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Research and Development Deliverables under Government Contracts, Grants, Cooperative Agreements and CRADAs: University Roles, Government Responsibilities and Contractor Rights

by
Danielle Conway-Jones*

I. INTRODUCTION

More than anything, the United States Government is committed to research and development that will ensure America’s position as the leader of nations. Nowhere is this truer than in the development of weapons and weapons systems, for these have, until recently, been the tools of superiority. From the tanks of World Wars I and II, to the guided weapons systems of today, to the unmanned fighting and space exploration vehicles of tomorrow, continued superiority of this nation will depend heavily upon the research and development of new technologies and innovation that must have dual uses for both the military and commercial sectors.

In the first half of the twentieth century, the United States Government was the single largest source of funding for research and development.1 During this period, the Government conducted extensive research and development in its own laboratories and in Government-owned laboratories run by

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The Government oversight agency, the General Accounting Office (renamed the Government Accountability Office under the George W. Bush Administration), estimated that Government laboratories spent $16.225 billion in Fiscal Year 1990 alone. Despite this investment in research and development and the immense productivity of these labs in developing patentable inventions, the United States Government began to lose its position as the leader in funding technology research and development. In fact, during the last decade of the twentieth century, technology leadership and funding shifted to private industry, where most research and development dollars are now spent. Representative Tom Davis cited statistics that the military's share of research and development has declined from 53% to 16% of the country's total spending from 1960 to 1999, while private sector research and development spending rose from one-third to two-thirds of the country's total spending during this time.

The reasons for the shift in leadership in research and development are myriad and complex. One factor contributing to this shift in leadership was the end of the Cold War. With the weapons draw-down following the break up of Soviet Russia, the military found itself pressured to reduce its budget, particularly in the areas of research and development. Another factor was the thriving economies of the 1980s and 1990s. Many private sector companies started underwriting their own efforts in research and development and delivering new technologies and innovations for commercial use, all this without consideration of military uses, or reliance on Government procurement or Government research and development dollars. Yet another factor contributing to the Government's decline in its leadership role in funding research and development is the way in which private companies view rights in their assets, particularly in their intellectual property assets. By no mea-

3. Id.
5. Id.
6. Id.
8. See UNDER SEC’Y OF DEF. FOR ACQUISITION, TECH. AND LOGISTICS, INTELLEC-
   TUAL PROPERTY: NAVIGATING THROUGH COMMERCIAL WATERS: ISSUES AND SOLUTI-
   after “DoD IP GUIDE”].
sure is this last factor subservient or less important than any of the other factors that have contributed to the Government’s decline as the leader in funding research and development for dual use purposes. Instead, this last factor is, in large measure, the reason why the private sector has distanced itself from research and development relationships, either under contracts or through grants, with the Federal Government.9

Realizing that global leadership requires achieving an intersection between military and defense leadership, research and development leadership, and information and technology leadership, the United States Government has embarked on a mission to redefine its own rhetoric and philosophy about free markets, intellectual property protection, innovation, and the roles of various constituents, including Federal contractors, universities, and the private commercial sector, in the research and development industry. The United States Government is keenly aware that it must look to the private commercial sector, including small businesses, for leadership in technology innovation. To ensure that technology innovation retains the characteristic of dual use, the Federal Government must be in a position to partner with the private commercial sector as well as universities to ensure that its military needs are considered during the research and development process.

With a significant amount of research and development funding being led by the private sector, the Federal Government has had to repackage itself to be a more attractive candidate for partnership. To support its “re-branding” efforts, the Government has enacted legislation that reduces the economic risks historically encountered by Federal contractors when doing business with the Government.10 In addition, the Federal Government has adjusted its procurement regulations and their underlying rationales to provide more balanced protection for intellectual property produced by contractors.11 Finally, the Federal Government has determined that standard procurement contract vehicles will not entice the best and brightest minds in universities and the private sector to partner with the Government; so in place of the these standard vehicles, the Government has initiated greater use of non-traditional, flexible binding instruments to facilitate mutually beneficial partnerships for the development of dual use technologies.12

9. See generally Dix et al., supra note 4, at 8-9 (explaining the Government’s view about why technically oriented contractors are reluctant to do business with the Federal Government).

10. Id.

11. Id. at 36.

12. Id. at 8.
II. GOVERNMENT, PRIVATE SECTOR, AND UNIVERSITIES

A. Government’s Role in Supporting Research and Development

The United States Government’s responsibility to govern and protect the nation is a primary reason for the spending of taxpayer dollars to acquire goods, services, and construction for the continued optimal operation of the American infrastructure. More pointedly, the Department of Defense has the responsibility to protect and defend the nation and the democratic ideology. Because of its significant defense role, the Department of Defense has been a dominant agency in the procurement of research and development as well as of intellectual property and technology deliverables. In acquiring items ranging from prototypes to software to weapons systems, the Department of Defense has played a significant role in developing an industry. In the United States, technological innovations and a high level of advanced development create new industries and sustain existing ones. Government and military needs and requirements create a catalyst for the creation of technology intensive industries, which in turn provide a wide range of professional, technical, and manufacturing jobs, increase economic productivity, and strengthen national competitiveness.

There are also other government policies that affect advanced development indirectly. The Federal Government affects the levels of advanced technology investment in certain areas by both creating incentives for private firms to invest and in supporting advanced technology in key areas where private participation is inadequate. The Federal Government’s policies for protecting intellectual property are major engines in promoting innovation. Similarly, the Department of Defense’s revised outlook on intellectual property protection for contract deliverables and research and development also stimulate to some degree dual use innovations. Finally, the Federal Government’s ability to open markets overseas impacts American firms’ willingness and ability to invest in research and development. Thus, at the policy level, the role of the Federal Government as well as the Department of Defense in the facilitation of increased research and development is to ensure an attractive legislative and regulatory climate for investment in innovation and advanced technologies.

13. See DoD IP GUIDE, supra note 8, at iii.
14. See DoD IP GUIDE, supra note 8, at 2-1.
15. DoD IP GUIDE, supra note 8, at 2-1.
16. See Dix et al., supra note 4, at 26.
17. See DoD IP GUIDE, supra note 8, at 2-1.
18. Id.
B. Private Industry’s Role in Supporting Research and Development

Like the Federal Government, the private commercial sector plays an important role in advancing research and development as well as new technologies and innovations. The private sector is responsible for bringing mid-level, applied research and product development to market for maximum profitability to shareholders. Private sector capitalization influences the growth and development of “start-up” companies. The private sector provides much needed capital to smaller companies that tend to operate in the absence of any revenues for extended periods of time. The private sector’s ability to provide original capital facilitates small company pursuits of basic research that often eventually leads to profitability. All of these activities take capital and investment. Like the Federal Government, private sector industry recognizes the benefit of collaborations for the purposes of sharing facilities, sharing ideas, and building on existing research. Accordingly, the private sector’s role is to identify investment opportunities with other business or government sectors to develop new or existing technologies to create further developments of products, processes, materials, or services that will enhance the nation’s industrial competitiveness.

C. Higher Education’s Role in Supporting Research and Development

Before World War II, universities were peripheral to the research and development enterprise of the United States. Today research universities are at the center of American research activities, thanks in large measure to an extraordinarily successful partnership with the Federal Government. The vital role research universities have played in the American economy is one of the greatest accomplishments of the American economy. As with the Federal Government and private industry, America’s world-renowned research universities have been a driving force behind the nation’s primacy in science and technology. The American research university is unquestionable.

19. See Dix et al., supra note 4, at 24.
21. Id.
22. Id.
23. Id.
24. See id.
25. Id.
bly the best in the world. It has successfully combined cutting-edge research and education, yielding an unmatched scientific and engineering workforce as well as the scientific breakthroughs in numerous critical technologies. In fulfilling its role as a catalyst for creating basic research, universities rely on government contracts, grants, and cooperative agreements to attract the best faculty and students to their institutions to conduct this necessary research. In addition, universities remain competitive in research by building intellectual property portfolios that generate capital for future research and development. Furthermore, universities spur philanthropy and endowments by generating intellectual property portfolios that capture the imaginations of institutional, corporate, and individual donors. Thus, universities have the significant role of spurring educational and investment excitement in the research and development of new technologies and innovations.

D. Historical Review of Government Acquisition of Inventions and Technology

Prior to the 1960s, the Federal Government and very large contractors, like AT&T and Bell Laboratories, drove the train of research and development and innovation. This model of innovation was extremely centralized and top down in terms of innovative direction. The areas of research and development that received attention were those areas that specifically interested the Federal Government and its list of large contractors. Thus, to accomplish technological and innovative research, a company had to be willing to submit to the centralized regime. Under the historical centralized system of innovation, the Federal Government often insisted upon taking commercial rights to inventions developed during the performance of government contracts. In return for contract performance, contractors received royalty-free, non-exclusive licenses for the benefit of the inventors or the inventors’ employers. In a time when large contractors received the equivalent of the benefit of a monopoly environment, such assignments of title to inventions were not repulsive because market entrants and competitors to these busi-

27. Id.
28. Id.
29. Dix, supra note 17.
30. Id.
31. See generally Lawrence Lessig, The Future of Ideas: The Fate of the Commons in a Connected World (Random House 2001) (describing that during its time, AT&T’s monopoly in communications was not all bad and, in fact, did lots of good by producing an extraordinary telephone system, linking 85% of American homes, and spending billions of dollars to support telecommunications research. AT&T succeeded during its monopoly to attract the very best telecommunications researchers.).
33. See DoD IP Guide, supra note 8, at Appendix E.
nesses were inconsequential. Historically, the Federal Government allowed its respective executive agencies to determine when the allocation of rights or title to inventions had to inure to the Government and usually these determinations varied depending on the needs of the acquiring agency. While most agencies, including the Department of the Defense, allowed title to remain in contractors, these agencies reserved for themselves irrevocable, non-exclusive, non-transferable and royalty-free licenses to practice the inventions for the benefit of the Government.

In the late 1960s and early 1970s, the Government’s policy on patent rights came under severe attack by private industry. In various studies, the Government was seen as a detractor to the full commercialization of inventions for the benefit of the American economy. Observers concluded that the Government was either not developing technologies or not funding such development in a proper fashion. Likewise, private industry refused to develop technologies in which there would be no control incentive in the commercialization of applied research and development. Government and congressional studies indicated that the Government’s research and acquisition policies were incompatible with the development and commercialization of innovative technologies.

As evidence of this incompatibility, one need only look at the Federal Government’s posture with respect to ownership of inventions as compared to industry’s posture. Prior to the passage of the Bayh-Dole Act of 1980, various statutes and regulations concerning patents established the Government’s right to take title to federally funded patents developed during the performance of government contracts. In addition, the Government retained the right to distribute the information resulting from these federally funded projects to the general public. The Government premised its right to release information from these federally funded patents on the theory that taxpayer dollars paid for the research and its outcomes; therefore, the results

35. See DoD IP GUIDE, supra note 8.
36. Kerrigan & Brasco, supra note 1, at 279.
37. See id. at 282-83.
38. Id. at 279.
40. See id. at 46.
41. Id. at 45.
should inure to the general public. Thus, patents from these sponsored projects were freely published or provided to anyone requesting access to the materials for unrestricted purposes. Contractors during this time period were competing without the benefit of government sponsored or approved monopolies as this was the era of free market competition. Accordingly, free and open access to patents developed during the performance of government contracts presented insurmountable problems to private industry. Contractors wanted to retain the benefits of commercial applications of new technologies for themselves and any economic benefits that flowed from their research. The thought that the Government would give away freely what seemed proprietary convinced contractors, universities, and research centers not to develop potentially commercially viable technologies.

In response to critical observations and reports about the dysfunctional nature of Government use and deployment of technology to the market, Congress enacted crucial legislation to balance government and industry interests in developing and commercializing new technologies. Congress enacted a series of laws to promote technology transfer and to provide technology transfer mechanisms and incentives. The intent of these laws is to encourage partnerships in the use of resources and in the development of dual use technologies. Three legislative initiatives inspired the decentralization of the research and development industry - The Stevenson-Wydler Technology Innovations Act of 1980; the Bayh-Dole Act of 1980; and the Federal Technology Transfer Act of 1986. With these three pieces of legislation, Congress began its trek to enhance private sector development and application of results from federally funded research previously ongoing at universities, research institutions, and federal laboratory facilities.

E. Technology Transfer History

With the passage of the Stevenson-Wydler Technology Innovation Act, Congress for the first time made the transfer of technology from federal labo-

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42. Id.
43. See DoD IP GUIDE, supra note 8, at Appendix E-1.
44. See FEDERAL TECHNOLOGY TRANSFER LEGISLATION, supra note 39, at 45.
45. See DoD IP GUIDE, supra note 8, at Appendix E-1.
46. Id.
47. Id.
48. See FEDERAL TECHNOLOGY TRANSFER LEGISLATION, supra note 39, at 45.
ratories to the private or commercial sector a national priority. Primarily a vehicle to introduce the concept of technology transfer, the Stevenson-Wydler Act stated broad policies to generate previously waning industry interest in dealings with the Government in the areas of research and development. The Act focused on disseminating research information from federal laboratories and universities to private industries in order to facilitate technical cooperation. While the Act was a permissive statute that encouraged technology transfer of Government owned inventions as opposed to a requirement to transfer such information, the Act did require the establishment of an Office of Research and Technology Applications at all Government-owned-Government operated or Government-owned, Contractor-operated laboratories with annual budgets greater than $20 million. Although technically the impetus for future technology transfer, the Stevenson-Wydler Act was widely criticized because its permissive, non-authoritative scope generated very little movement within the Federal Government to begin actual technology transfers for the benefit of exploiting the commercial benefits of dual use technologies.

In an effort to promote the policies of the Stevenson-Wydler Act and to entice contractors, universities, and research centers back into the government industrial base, Congress passed the Bayh-Dole Act of 1980. Focused on generating dual use technologies from basic and applied research, the Bayh-Dole Act allowed small businesses, non-profit scientific and educational organizations, and universities to retain title to their respective inventions even though those inventions resulted from work performed during the course of a government contract, grant, or cooperative agreement. Congress viewed Bayh-Dole as providing a set of broad federal rules governing patent law that would encourage industry to develop federally funded research into marketable, commercial products. As mentioned previously, the Federal Government, specifically the Department of Defense, generally maintained the policy that contractors retained title to their inventions, but the Bayh-Dole Act was the first instance in which legislation clearly articulated this policy. In a contextual view, this mandate is critical when read against the incentives and limited monopoly provisions of intellectual prop-

52. See DoD IP GUIDE, supra note 8, at Appendix E-1.
55. See Duncombe, supra note 53.
56. See FEDERAL TECHNOLOGY TRANSFER LEGISLATION, supra note 39, at 46.
57. See Kerrigan & Brasco, supra note 1, at 279.
58. See id.
erty legislation, particularly the Patent Act,\textsuperscript{59} the Copyright Act,\textsuperscript{60} and the Lanham Act.\textsuperscript{61}

In its original form, the Bayh-Dole Act did not include large businesses and government-owned, contractor-operated facilities as beneficiaries of the mandate to recognize title to inventions in the contractor.\textsuperscript{62} This exclusion was remedied by President Reagan’s “Memorandum to the Heads of Executive Department and Agencies: Government Patent Policy,” dated February 19, 1983.\textsuperscript{63} President Reagan’s Memorandum directs the heads of all departments and agencies to extend the benefits of Bayh-Dole to all research and development contractors, including large businesses and profit-making organizations.\textsuperscript{64} The President’s rationale for this sweeping inclusion results from the view that more often than not “allowing inventing organizations to retain title to inventions made with Federal support is the best incentive to obtain risk capital necessary to develop technological innovations.”\textsuperscript{65} The President and his administration further supported the extension of Bayh-Dole benefits to large businesses by citing that “the new products and processes that result will improve the productivity of the United States economy, create new jobs, and improve the position of the United States in world trade.”\textsuperscript{66}

The 1980 legislative attempts at launching technology transfer received a significant boost by the passage of the Federal Technology Transfer Act of 1986 (“FTTA”).\textsuperscript{67} The FTTA authorized the promotion of economic competitiveness in research and development by recognizing that applied research would be a significant factor to achieve success in the global marketplace. The Act also required federal agencies to work closely with industry to accomplish technology transfer of research from federal laboratories; and it tied significant government employee and laboratory incentives to any government-industry relationship that became commercially profitable.\textsuperscript{68} The crowning features of the FTTA include placing responsibility of technol-

\textsuperscript{62} \textit{See} Kerrigan & Brasco, \textit{supra} note 1, at 280.
\textsuperscript{63} Memorandum to the Heads of Executive Departments and Agencies, 19 Weekly Comp. Pres. Doc. 252, 253 (Feb. 18, 1983).
\textsuperscript{64} \textit{Id}.
\textsuperscript{66} \textit{Id}.
\textsuperscript{68} Duncomb, \textit{supra} note 52, at 609.
ogy transfer success with federal laboratory scientists and engineers, creating a reward system for government employees, providing funding for technology transfer initiatives, providing for the exchange of personnel, services, and equipment with industry partners, and authorizing federal laboratory directors to enter into cooperative research and development agreements ("CRADAs") with private industry.

Arguably, the proactive authority for federal laboratory directors to enter into CRADAs is groundbreaking and transformative. Federal laboratories have broad authority to fashion CRADAs in any way that permits a maximum exchange of technology.\textsuperscript{69} However, this authority expressly stops short of allowing a federal laboratory to turn over its appropriated funds to a private company as an incentive to enter into a CRADA.\textsuperscript{70} This limitation is necessary in order to comply with the Competition in Contracting Act.\textsuperscript{71} Without the limitation, federal laboratories could circumvent the requirement of full and open competition—the overarching principle that promotes the integrity of the federal procurement system.

Technology transfer legislation has the potential of renewing old ties between government, private industry, and universities. The broad authority that permits federal laboratories to enter into CRADAs for research and development in areas of technology consistent with the laboratory’s mission has been credited with enticing private industry and universities to seek out advantageous relationships with particular government laboratories.\textsuperscript{72} The deployment and use of CRADAs allow for arm’s length negotiations of research and development agreements with user-defined provisions related to title and ownership interests, free flow of information, use of state of the art laboratories and equipment, access to personnel with unique experiences and technical capabilities, and profit sharing arrangements following the successful commercial exploitation of applied research.

The future success of technology transfer largely depends on the public’s awareness of the importance of science and technology to market economies, education, national security, and government acquisitions. Also, the success of technology transfer equally depends on public perceptions of fairness and integrity regarding the exercise of government functions. To increase public awareness about technology transfer, it is imperative that government agencies, private industry, and universities, both large and small, appreciate the Federal Government’s methods for obtaining goods and services with aspects of intellectual property or new technologies. How the Government categorizes goods and services will determine the required approach to contract vehicles or cooperative agreements used to establish mutu-

\textsuperscript{69} See Shirk, supra note 5, at 65.
\textsuperscript{70} Shirk, supra note 5, at 66.
\textsuperscript{72} See Dix et al., supra note 3, at 30.
ally beneficial relationships. The vehicles that define and balance contractual relationships have different characteristics, purposes, and outcomes. For each vehicle to accomplish its respective goals, all users of the various vehicles must have some working knowledge of the instrument’s scope and effectiveness. Accordingly, the remainder of this article will describe when certain vehicles, ranging from procurement contracts to CRADAs, should be used to accomplish a particular goal of the Government in receiving research and development.

F. Procurement Contracts

The major statute governing competition requirements in federal contracting is the Competition in Contracting Act of 1984 ("CICA"). The CICA requires executive agencies to seek full and open competition in all sealed bid or negotiated procurements, except as specifically permitted by statute. “Full and open competition” is defined as permitting all responsible sources to submit sealed bids or competitive proposals in response to Government solicitations.

The Government’s policy regarding competition has been revised with the enactment of the Federal Acquisition Streamlining Act ("FASA") and the Clinger-Cohen Act of 1996. These revisions allow the Government to

73. See 41 U.S.C. § 253 (2000), Pub. L. 98-369, 98 Stat. 1175 (1984). The Competition and Contracting Act of 1984 amended Title III of the Federal Property and Administrative Services Act of 1949 to establish a statutory preference for the use of competitive procedures in awarding federal contracts for property or services. It also requires the use of competitive procedures by federal agencies when purchasing goods or services with sealed or competitive bids. And, it directs the head of each agency to appoint an advocate who will challenge barriers to competition in the procurement of property and services by the agency and review the agency’s procurement activities. Division D of Public Law 104-106 contains language that retains the current statutory competition standard, but it also requires that the standard be applied consistently with the government’s need to “efficiently” fulfill its requirements. Further provisions allow competition officials more discretion in determining the number of proposals in the “competitive range,” to provide for pre-award debriefings of unsuccessful offerors, and to authorize the use of special two-phase procedures for design and construction of public buildings.


75. See Federal Acquisition Streamlining Act, Pub. L. No. 103-355, 108 Stat. 3243 (1994). In the FASA, Congress made various changes that encourage and reward innovation in acquisition, increase the procurement of commercially-available items in more streamlined procedures, place more emphasis on past contractor performance and best value contracting in making source selections, and encourage greater professional development of the government’s procurement workforce.

procure goods and services with greater ease by placing the government in a position similar to a commercial buyer. While the government evolves into a quasi-commercial entity in certain procurements, it still remains responsible for ensuring competition to the maximum extent practicable. The Federal Acquisition Regulation continues to set forth the government’s requirements in the area of competition.77 Thus, to satisfy competition requirements, not every prospective bidder need be afforded the opportunity to bid. This interpretation is based upon the Government’s efforts to reasonably inform prospective bidders of work, not requiring the Government to inform all prospective bidders.78 This adequacy of competition can be challenged if a bidder or offeror can show that the Government had a conscious and deliber-

tracting by stating that they “should, to the maximum extent practicable, use modular contracting for an acquisition of a major system of information technology.” Id. It further directs that the FAR provide that acquisitions of major systems of information technology may be divided into several smaller acquisition increments that: (1) are easier to manage individually than in one comprehensive acquisition; (2) address complex information technology objectives incrementally in order to enhance the likelihood of achieving workable solutions for attainment of those objectives; (3) provide for delivery, implementation, and testing of workable systems or solutions in discrete increments each of which comprises a system or solution that is not dependent on any subsequent increment in order to perform its principal functions; and (4) provide an opportunity for subsequent increments of the acquisition to take advantage of any evolution in technology or needs that occur during performance of earlier increments. See id. The statute additionally states that modular contract increments should be awarded to the maximum extent practicable within 180 days after the date on which the solicitation is issued, and if the contract for that increment cannot be awarded within that time, it should be considered for cancellation. See id. It also states that the information technology provided for in the modular contract should be delivered within 18 months after the date on which the solicitation was issued. See id.

77. See 48 C.F.R. § 6.000 (1995) (setting forth “policies and procedures to promote full and open competition in the acquisition process and to provide for full and open competition, full and open competition after exclusion of sources, other than full and open competition, and competition advocates”).

78. See 48 C.F.R. § 6.101 (1995). The policy of this regulation appears as follows:

10 U.S.C. 2304 and 41 U.S.C. 253 require, with certain limited exceptions (see subparts 6.2 and 6.3), that contracting officers shall promote and provide for full and open competition in soliciting offers and awarding Government contracts.

Contracting officers shall provide for full and open competition through use of the competitive procedure(s) contained in this subpart that are best suited to the circumstances of the contract action and consistent with the need to fulfill the Government’s requirements efficiently. Id.
ate intent to impede the participation of prospective bidders. The Federal Government’s acquisition of deliverables that contain features or components of intellectual property are subject to the Federal Acquisition Regulation and the Defense Federal Acquisition Regulation. Practically, what that means is that the Federal Government’s standard boilerplate language is the starting point for such solicitations. Typically, the procurement of technology will subject government contractors and others performing under government contracts to the data rights provisions of the Government’s acquisition regulations. For purposes of this article, the Defense Federal Acquisition Regulation will be the primary reference because most technology in this area is procured by the Department of Defense. These regulations are constantly evolving and, thus, create a landmine for the unwary. The task of analyzing and applying these regulations is not made any easier when the Government procures research and development.

When the Government contracts for research and development, it will frequently require the contractor to deliver technical information in a form that is usable to the Government in the future. This information typically consists of specifications, drawings, technical reports, maintenance and operating manuals, parts lists, computer software, and other types of recorded information. This compilation of information is referred to as technical data. Often, the drafters of the regulations as well as the contracting agencies have conflated the data submission requirements for research and development contracts with rights in data that represent the actual deliverable sought by the agency. The former information can be characterized as instructions that assist the Government in understanding and using the deliverable, while the latter is the actual deliverable. Obviously, these fine distinctions can create problems for contractors and the Government in the event of a dispute. There are also substantial difficulties in assessing how much information the contractor should turn over to the Government and what protection the Government will afford to the information or the deliverable that the contractor submits pursuant to the requirements of the procurement contract. The problems emanate from the distinct interests of the Government versus the contractor. The Government is concerned with acquiring a deliverable, but also operating and maintaining the deliverable from many points around the globe, while the contractor is concerned with protecting its competitive edge or know-how within the industry. Contractors are also much more aware of their intellectual property and proprietary rights, especially with respect to achieving maximum commercial exploitation of that intellectual property.

The Federal Government, especially the Department of Defense, is keenly aware that its past practices in the realm of procurements involving


80. For the purposes of this article, the Government’s license rights in both technical data as well as computer software shall be simply referred to as “data rights.”
intellectual property garnered very few fans in various segments of the procurement community, much less truly commercial businesses. In an effort to woo these contractors and businesses back to the Federal research and development sector, the Federal Government, specifically, the Department of Defense, revised its regulations to try to seek a balance between the competing interests of the contractor on one hand and the Government on the other. The new regulations explicitly provide that the Government obtains rights in technical data under an irrevocable license granted or obtained for the Government by the contractor.\textsuperscript{81} The contractor on the other hand retains all rights in the data not granted to the Government, which means that the contractor is the owner of the technical data in the event that national security, export controls, or prior Government rights do not limit the contractor’s ownership interest.\textsuperscript{82} The Government’s license or use rights fall into three categories and one outlying category. The three categories include a limited rights license,\textsuperscript{83} a Government purpose rights license,\textsuperscript{84} and an unlimited rights license.\textsuperscript{85} The outlying category is called a special negotiated license,\textsuperscript{86} which is formed under special circumstances. The categories determine what uses the Government can make of the technical data that it receives from a particular contractor. The category of license that will apply to the Government is determined by the source of funding the contractor received in performing the Government contract.\textsuperscript{87}

The Government is entitled to unlimited use rights in technical data in various situations, notably when the data pertaining to items, components, or processes have been or will be developed exclusively with Government funds or when technical data is generated directly from the performance of experimental, developmental, or research work specified as an element of performance under a government contract or subcontract.\textsuperscript{88} The broad scope of this use right entitles the Government to use or disclose technical data to anyone for any purpose.\textsuperscript{89} Moreover, the Government retains the right to permit others to use or to disclose the technical data with few restrictions.\textsuperscript{90} Notably, this license permits the Government to disclose technical data to a contractor’s competitor. The scope and breadth of the unlimited use rights stabs at the heart of all things proprietary. While the disclosure of technical

\begin{itemize}
\item \textsuperscript{81} 48 C.F.R. § 227.7103-4 (1995).
\item \textsuperscript{82} Id.
\item \textsuperscript{83} Id. § 252.227-7013(a)(13).
\item \textsuperscript{84} Id. § 252.227-7013(a)(12).
\item \textsuperscript{85} Id. § 252.227-7013(a)(15).
\item \textsuperscript{86} Id. § 252.227-7013(b)(4).
\item \textsuperscript{87} Id. § 252.227-7013(b)(1)-(b)(4).
\item \textsuperscript{88} Id. § 252.227-7013(b)(1)(iii).
\item \textsuperscript{89} Id. § 252.227-7013(a)(15).
\item \textsuperscript{90} Id.
\end{itemize}
data under the government contract does not destroy the nature of a contractor's information as a trade secret or as proprietary information, the future right of another to disclose the trade secret obtained from the Government will destroy the proprietary and secret character of the information. For this reason alone, private industry contractors interested in research and development will shy away from doing research under government contracts. To encourage commercial utilization of technologies developed under government contracts, the provisions instruct that the Government may agree to accept technical data subject to Government purpose license rights. This reduction in use rights is an example of the Department of Defense’s compromise in recognizing the intellectual property and proprietary interests of private industry.

The Government is entitled to only Government purpose license rights in technical data associated with an item, component, or process developed in part with Government funds and in part at private expense whenever a contractor provides notice of such mixed funding with respect to such data. This type of license anticipates a prior negotiation between the Government and the contractor. The Government purpose rights license grants the Government a right to use, modify, disclose, or release technical data within the Government without restriction, but limits similar conduct to only Government purposes when the technical data will be released outside of the Government to a third party who must agree to a use and non-disclosure agreement that limits the third party’s use to the same Government purposes. The time period for the life of a Government purpose rights license is five years, after which the license converts to an unlimited use rights license. Examples of Government purposes include competitive procurement and foreign military sales. Government purposes obviously do not include disclosure of technical data for commercial purposes. The problem that the private industry has identified with Government purpose rights is that the five-year window of time to commercialize a dual use technology may not be long enough to recoup the private portion of the mixed-funding investment in the item, component, or process before the Government purpose

93. Dix, supra note 4, at 16.
95. See generally id. § 252.227-7013(a)(11) (2004) (defining Government purpose as any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.).
rights license converts into an unlimited rights license for the benefit of the Government.

The Government obtains only a limited rights license in unpublished technical data pertaining to items, components, or process developed exclusively at private expense, provided that the contractor properly marks the technical data with the appropriate limited rights legends before submitting the technical data to the Government.\textsuperscript{96} The limited rights license allows the Government to use or disclose technical data only within the Government.\textsuperscript{97} The Government cannot use the data to manufacture the item, component, or process, except in the event that an emergency repair or overhaul is required.\textsuperscript{98} The Government may, however, with the contractor’s consent, disclose the technical data to third parties who may need to provide service and support for the item, component, or process.\textsuperscript{99}

Finally, the Government can enter into negotiations with a contractor to develop a special license.\textsuperscript{100} The standard rights referred to above may not satisfy either the contractor’s needs or the Government’s needs. In rare situations, the Government may even be willing to accept lesser rights in technical data. The purpose for specially negotiated rights is to allow the Government to assess its true minimum needs. If the Government can take lesser rights than it is entitled to under a particular procurement, then the Government should take such an opportunity to develop goodwill amongst its contractors. Several provisions may be the subject matter of a specially negotiated license, including escrowing technical data with third parties unless and until an actual Government contingency is encountered, limiting the particular use of technical data to a certain agency instead of allowing full disclosure within the entire Government, and extending the time limit when Government purpose rights license converts to unlimited license rights.

\textbf{G. Other Transaction}

The Other Transaction vehicle is not a procurement contract, grant or cooperative agreement, or a cooperative research and development agreement (“CRADA”), but it is a legal instrument to be used when it is not appropriate or feasible to use a procurement contract or a cooperative agreement.\textsuperscript{101} Often referred to as “freedom of contract” instruments, Other

\begin{itemize}
\item \textsuperscript{96} Id. § 252.227-7013(b)(3)(A).
\item \textsuperscript{97} Id. § 252.227-7013(a)(13).
\item \textsuperscript{98} Id. § 252.227-7013(a)(13)(i).
\item \textsuperscript{99} MATTHEW S. SIMCHAK & DAVID A. VOGEL, LICENSING SOFTWARE & TECHNOLOGY TO THE U.S. GOVERNMENT: THE COMPLETE GUIDE TO RIGHTS TO INTELLECTUAL PROPERTY IN PRIME CONTRACTS AND SUBCONTRACTS 133 (CCH Inc. 2000).
\item \textsuperscript{100} 48 C.F.R. § 227.7103-5 (1995).
\item \textsuperscript{101} 10 U.S.C. § 2371(e)(2) (2000).
\end{itemize}
Transaction vehicles are subject to fewer laws and regulations than procurement contracts and CRADAs. The Department of Defense is one of the few agencies authorized to use the Other Transaction instrument, which may be of two types.

The first type is the Science and Technology Other Transaction, which can be used to accomplish basic research, applied research, or advanced research projects. The characteristics of a Science and Technology Other Transaction include a funds out mechanism in which the Government pays funds for the research, but the Government seeks, when practicable, a 50% cost share agreement. In addition, the Government cannot duplicate already existing research. Finally, the Government must report the use of the Science and Technology Other Transaction instrument to Congress.

The second type of Other Transaction is the Prototype Other Transaction, which is directly relevant for the development of weapons or weapons systems that the Department of Defense plans to acquire. The characteristics of this type of Other Transaction are again flexibility, the proscription that prototype research cannot already be ongoing under another contract mechanism, the contractor is paid according to a funds out method from the Government, cost sharing by the contractor is not required, a fee or profit is available for the contractor, the Government uses competitive procedures when practicable, and the agency must provide a report to Congress annually when the instrument is used to acquire a prototype. In essence, the use of an Other Transaction instrument is akin to allowing the Government and the contractor to write a contract beginning with a blank sheet of paper as opposed to incorporating myriad contract clauses required by the Defense Federal Acquisition Regulation or the many regulations of the Office of Management and Budget. The Other Transaction vehicle is probably the closest the Government will ever come to negotiating agreements like market participants in private industry. Negotiating terms from the inception of a relationship allows the contractor to maintain a competitive advantage in the commercial marketplace while permitting the Government to have access to cutting-edge technologies.

H. Grants and Cooperative Agreements

Most Government activities are carried out directly by the Government or under funds out agreements with other parties for the benefit of the Gov-

102. Dix, supra note 4, at 26.
103. Id. at 25.
104. See id.
105. See id.
106. See id.
107. Dix, supra note 4, at 24.
108. Id. at 25.
ernment. Grants and cooperative agreements, while funds out mechanisms, are not procurement instruments and, therefore, these instruments cannot be used to acquire goods and services for the direct benefit of the Government.\textsuperscript{109} Despite this restriction, the Government can use a grant or cooperative agreement vehicle if the Government’s primary purpose in doing so is to provide technical assistance or promote assistance relationships for the public. A Federal agency may use a grant or cooperative agreement instead of a procurement contract when

the principal purpose of the relationship is to transfer a thing of value to the State or local government or other recipient to carry out a public purpose of support or stimulation authorized by a law of the United States instead of acquiring (by purchase, lease, or barter) property or services for the direct benefit or use of the United States Government. . .\textsuperscript{110}

The choice between using a grant or a cooperative agreement depends on whether the Government intends to be substantially involved in the project. If there is substantial Government involvement, then the appropriate instrument for use is a cooperative agreement; otherwise, when Government involvement is less than substantial, then the appropriate instrument for use is a grant.\textsuperscript{111} Federal grants and cooperative agreements are relatively flexible in that they are only subject to the Office of Management and Budget’s informal advisories and agency regulations.\textsuperscript{112}

I. Cooperative Research and Development Agreements

A Cooperative Research and Development Agreement (“CRADA”) is defined as 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 that are consistent with the missions of the laboratory.\textsuperscript{113}

The primary purpose of a CRADA is to encourage the transfer of commercially useful technology from Federal laboratories to the private sector. Unlike funds out agreements where the Government distributes appropriated

\textsuperscript{109} Dix, \textit{supra} note 4, at 27.
\textsuperscript{111} \textit{Id.} § 6304(2).
funds to a contractor, grantor, or collaborator, CRADAs expressly prohibit
the distribution of appropriated funds to a non-Federal CRADA party.114

Cooperative Research and Development Agreement authority emanates
from the Stevenson-Wydler Act.115 All Federal Government-owned labora-
tories, which are operated either by Government personnel or contractor per-
sonnel, have flowed down CRADA authority.116 Unlike garden-variety
procurement contracts, there are no government-wide standard clauses or
regulations for CRADAs. In fact, CRADAs are distinguishable from pro-
curement contracts in one major respect—the transfer of funds for CRADA
collaboration flows, if at all, from the contractor or private entity to the Fed-
eral laboratory, and not the other way. In addition, Federal laboratory direc-
tors do not enter CRADAs for research and development that are inconsistent
with that particular laboratory’s mission. Furthermore, CRADA relation-
ships are typically characterized by a private non-Federal entity directing the
research and development of a project as opposed to the Government di-
recting the research and development. With such a relationship, the private
entity is bearing more of the risk as compared to the Government laboratory.
Thus, the protection afforded by strict contract clauses and regulations for the
benefit of the Government and for the taxpayer is relatively unnecessary to
achieve during the performance of a CRADA because the risks of nonper-
formance are borne, at least financially, by the private entity partner to the
CRADA.

Because there are no strict requirements for contract clauses and provi-
sions, a director of a laboratory may negotiate terms including licensing
agreements, payment of funds into the Government, the availability of per-
sonnel and services, intellectual property agreements, the granting of pre-
sumptive rights to inventions, and the waiver of Government rights to
inventions except for a Government purpose license. The CRADA mecha-
nism is a very flexible approach to maintaining a relationship with the Gov-
ernment and directing Government research and development without many
of the risks of loss of intellectual property or proprietary interests. The bene-
fits of CRADAs are myriad and the private industry can take advantage of
the opportunity to partner with the Federal Government to develop and then
commercialize dual use technologies.

III. Conclusion

There are many roles to be played in the research and development of
technology for the 21st Century. Innovation depends on industry players
performing these roles under optimal circumstances. The Government has
the role of setting policy, promoting leadership in innovation, and providing

114. Carl L. Vacketta et al., Technology Transfer, 94-12 BRIEFING PAPERS 1, 3
(1994).
116. See id.
the means and the mechanisms to accomplish research and development at the basic research, applied research, and advanced research levels of science and technology. A significant role for the Government is to train its agencies, departments, and personnel about supporting innovation efforts through correct identification and uses of contractual vehicles to form lasting and productive relationships with private industry and universities to ensure continued leadership in research and development. Likewise, private industry and universities have distinct roles to play in providing resource capital investment and human capital investment, respectively. In addition, private industry and universities must seek out opportunities to collaborate with Federal, State, and local governments to advance research and development for the continued growth of community as well as national infrastructures.

Finally, there may be times when the Government, private industry, and universities must also balance the national interest in promoting knowledge innovation with the conveyance of individual proprietary interests. There may be circumstances in which the national public interest must prevail over individual property rights in order to achieve strong leadership in the research and development of technology and innovation. Procurement laws and policies were established to balance the very interests of fair competition with social and economic interests of the nation-state. This balancing is no less important in the various segments of the entire procurement community. One thing is clear: successful collaboration for optimal research and development outcomes is only assured when all parties are well versed in the mechanisms applicable to building contractual and special relationships with the Government for the advancement of technology and innovation.