United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Technology and Procurement Policy, Committee on Government Reform, House of Representatives

For Release on Delivery
Expected at 10:00 a.m., EDT,
Tuesday, July 17, 2001

INTELLECTUAL PROPERTY

Information on the Federal Framework and DOD's Other Transaction Authority

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GAO-01-980T

Mr. Chairman and Members of the Subcommittee:

Thank you for inviting GAO to participate in today's hearing on intellectual property. The U.S. government has made significant contributions to the world's science and technology base, both by supporting basic scientific research and by pursuing science and technology missions within federal agencies. At one time, federal agencies largely controlled this research and the patented products and processes resulting from it—known as intellectual property. In turn, this work was used to further a wide range of national interests, such as medical research, economic development, technology advancements, and national defense.

However, the research and development landscape has changed over the past two decades. Most research is being done outside of the government's span of control, and the federal government must now increasingly compete with others to obtain the research and technology it needs. And it must do so amid concerns about the burdens associated with federal controls over reporting, development, and commercialization of the intellectual property created under federal contracts. Further, most intellectual property created through federal research projects is now owned by contractors and grantees. This has helped to foster development of new products and processes and ensure that they are available for commercial purposes and scientific study.

I am here today along with John Stephenson, Director, Natural Resources and Environment, to discuss GAO's work related to two vehicles that have been created to bridge this gap. These are (1) the Bayh-Dole Act, which was passed in 1980 and supplemented by Executive Order 12591 in 1987, and (2) "other transaction" authority granted to DOD. The Bayh-Dole Act and Executive Order 12591 allow federal contractors and grantees to own—with certain restrictions—the inventions they create under federally funded research projects. DOD's "other transaction" authority enables DOD to enter into agreements that are generally not subject to the federal laws and regulations governing standard contracts, grants, and cooperative agreements. DOD has used this authority to increase its flexibility in negotiating intellectual property provisions and to attract commercial firms that traditionally did not perform research for the government. However, our work has shown that DOD needed better guidance to promote more effective use of the authority. DOD has taken actions to respond to our concerns, which I will also discuss.

The Bayh-Dole Act and Executive Order 12591

Prior to 1980, the government generally retained title to any inventions created under federal research grants and contracts, although the specific policies varied among the agencies. Over time this policy became increasingly a source of dissatisfaction. One, there was a general belief that the results of government-owned research were not being made available to those who could use them. Second, advances attributable to university-based research funded by the government were not pursued because the universities had little incentive to seek uses for inventions to which the government held title. Finally, the maze of rules and regulations and the lack of a uniform policy for government-owned inventions often frustrated those who did seek to use the research.

The Bayh-Dole Act[1] was intended to address these concerns by creating a uniform patent policy for inventions resulting from federally sponsored research and development agreements. The act was applicable to small businesses, universities, and other nonprofit organizations and generally gave them the right to retain title to and profit from their inventions, provided they adhered to certain requirements. The government retained nonexclusive, nontransferable, irrevocable, paid-up (royalty-free) licenses to use the inventions.[2]

The Bayh-Dole Act was extended to large businesses by a Presidential Memorandum issued to the executive branch agencies on February 18, 1983. It extended the patent policy of Bayh-Dole to any invention made in the performance of federally funded research and development contracts, grants, and cooperative agreements to the extent permitted by law. In 1984, the Congress amended the Bayh-Dole Act to include contractors operating government-owned laboratories. The 1984 amendments also specified that the act did not preclude agencies from allocating rights to inventions, as provided in the Presidential Memorandum, but that organizations acquiring these rights would be subject to certain requirements of Bayh-Dole. On April 10, 1987, the President issued Executive Order 12591, which, among other things, required executive

[1] The Bayh-Dole Act is the common name for the Patent and Trademark Laws Amendments of 1980 (P.L. 96-517, Dec. 12, 1980).

[2] The act is implemented through regulations issued by the Department of Commerce in 1987 (37 C.F.R. part 401). Similarly, the patent rights policies set out by the act and Executive Order 12591 are embodied in parts 27 and 52 of the Federal Acquisition Regulation. The regulations define the rights and responsibilities of the parties.

agencies to promote commercialization in accordance with the 1983 Presidential Memorandum.

Below are highlights of requirements related to the Bayh-Dole Act and Executive Order 12591.

Figure 1: Highlights of Requirements

- The contractor or grantee must disclose to the appropriate federal agency any invention created with the use of federal funds within 2 months of the date the inventor discloses the invention in writing to the contractor or grantee.
- If the contractor or grantee decides to retain title to the invention, it generally must notify the agency within 2 years of the date of disclosure that it has elected to do so.
- The contractor or grantee must apply for a patent on the invention within 1 year of its election to retain title or within 1 year of the publication, sale, or public use in the United States, whichever is earlier.
- In applying for a patent, the organization must add a government interest statement that discloses the government's rights to the invention.
- The contractor or grantee must attempt to develop or commercialize the invention.
- If the contractor or grantee is a nonprofit organization, it generally must give priority to small businesses when licensing the invention.
- When granting an exclusive license, the contractor or grantee must ensure that the invention will be "manufactured substantially" in the United States.

No single federal agency is responsible for monitoring compliance with the Bayh-Dole Act or Executive Order 12591, although the Department of Commerce was given the responsibility for drafting Bayh-Dole regulations. Rather, the agency responsible for funding the contract or grant that led to the invention is responsible for ensuring that the requirements are followed. If the contractor or grantee does not disclose the invention, does not elect title within the established periods, or elects not to retain title, the agency may acquire title to the invention if the agency makes a written request within 60 days after it learns of the failure of the contractor or grantee to make the proper disclosures or elections. The agency can also require the contractor or grantee to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant under terms that are reasonable under the circumstances if, for example, the organization does not develop or commercialize the invention or if action is needed to alleviate health or safety concerns. This is known as the government's "march-in" right.

Our work on the Bayh-Dole Act has focused on the reporting requirements contractors and grantees are required to follow.[3] We found that contractors and grantees were not always abiding by the reporting requirements and that the royalty-free licenses retained by the government were of little, if any, use in federal procurements. We noted that the Congress might wish to consider standardizing, improving, and streamlining the reporting process under the act and executive order, which we believe would make the process less burdensome and more useful to both the government and its contractors and grantees.

DOD's Use of Its Other Transaction Authority

Over the past decade, both Congress and DOD expressed concern that government-unique procurement requirements—often implemented through specified contract provisions—inhibited DOD's ability to take advantage of technological advances made by the private sector and increased the costs of goods and services DOD acquired. For example, traditional defense contractors reported that they required additional personnel to comply with government financial management requirements, while commercial companies reportedly declined to accept DOD research contracts in order to protect their intellectual property. Many requirements could be waived or tailored through existing contracting procedures, but both DOD officials and potential contractors found this to be difficult and time consuming.

One approach to address these concerns has been the use of "other transactions." Other transactions are not generally subject to the federal laws and regulations governing standard procurement contracts, grants and cooperative agreements. DOD officials believe the use of other transactions provides additional flexibility to negotiate terms and conditions, including those pertaining to intellectual property; and, thereby, helped attract firms that traditionally did not perform research for the government.

There are two basic types of other transactions. The first type had its origins in 1989, when Congress enacted legislation—codified at 10 U.S.C. 2371—to provide the Defense Advanced Research Projects Agency (DARPA) temporary authority to enter into cooperative

[3] These include our May 1998 report, *Technology Transfer: Administration of the Bayh-Dole Act by Research Universities* (GAO/RCED-98-126, May 7, 1998); and our August 1999 report, *Technology Transfer: Reporting Requirements for Federally Sponsored Inventions Need Revision* (GAO/RCED-99-242, Aug. 12, 1999).

agreements[4] and "other transactions" for advanced research projects. The legislation did not define "other transactions," thus giving DARPA flexibility to deal with unique situations encountered when fostering technology, especially dual-use technology. The legislation also required that, to the extent the Secretary of Defense determined practicable, recipients should provide at least 50 percent of the project's funding. In 1991, Congress made the authority permanent and subsequently extended it to the military services. Other transactions entered into under 10 U.S.C. 2371 are assistance instruments, which are used when the principal purpose is to stimulate or support research and development activities for both public and government purposes. Other transactions could only be used when other instruments were not appropriate or feasible.

In 1993, under Section 845 of the National Defense Authorization Act for Fiscal Year 1994,[5] Congress authorized a second type of other transaction to carry out prototype projects directly relevant to weapons or weapon systems proposed to be acquired or developed by DOD; that is, for government-unique purposes. The legislation did not require participants to share in the costs of the project or require that the agreements be used when a standard contract, grant, or cooperative agreement was not appropriate or feasible, two conditions required to use an assistance-type other transaction. These "Section 845 agreements" were initially limited to use by DARPA for a 3-year period; legislation has since been passed to extend their use to the military services and other defense agencies and to extend the authority's expiration date to September 30, 2004.

GAO Findings Related to DOD's Use of Other Transactions

We have reported twice on DOD's general use of its other transaction authority.[6] Overall, while a number of benefits were cited, including the ability to tailor intellectual property clauses and to attract firms that traditionally did not perform research for the government, we also found that DOD needed more specific guidance to help its personnel select and

[4] Subsequent legislative changes enabled DOD to use cooperative agreements as part of its basic authority under 10 U.S.C. 2358 to conduct research.

[5] P.L. 103-160, Nov. 30, 1993.

[6] We have also reviewed DOD's proposed use of an other transaction for its Evolved Expendable Launch Vehicle program, but we did not address intellectual property matters (see *Evolved Expendable Launch Vehicle: DOD Guidance Needed to Protect Government's Interests* (GAO/NSIAD-98-151, June 11, 1998).

structure the instruments appropriately and assess the benefits from using the agreements.

In March 1996, we reported on DOD's use of 72 cooperative agreements and other transactions that were entered into under 10 U.S.C. 2371 between fiscal years 1990 and 1994. We found that the instruments appeared to have provided DOD a tool to leverage the private sector's technological know-how and financial investment, and attracted firms that traditionally did not perform research for the government by enabling more flexible terms and conditions than the standard provisions found in DOD contracts and grants.

As an example, we cited a 1994 DARPA other transaction with a Hewlett-Packard-led consortium to advance the state of the art in the manufacture of more affordable optoelectronics systems and components. Hewlett-Packard had previously told us that it declined to accept government research and development funds to protect its technical data rights.[7] Under the agreement, however, the intellectual property provisions were structured so that

- the consortium had up to 4 months (rather than the 2 months typically allowed) after the inventor discloses a subject invention to his company to notify the government;
- the consortium had up to 24 months (versus 8 months allowed for large businesses) to inform DARPA whether it intends to take title to inventions arising from the agreement after its disclosure to the government;
- DARPA agreed to delay exercising its government purpose license rights to inventions in which the consortium retained title until 5 years after the agreement was completed; and
- the consortium had the authority to maintain inventions and data as trade secrets for an unspecified period of time under certain conditions.

[7] With regard to technical data, DOD generally obtains unlimited rights when technical data were developed or created exclusively with government funds, government purpose rights when the data were created with mixed funding, and limited rights when the data were created exclusively at private expense. These rights differ in the degree to which DOD may provide or authorize parties outside of the government to use the data. Unlimited rights provide the government the ability to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so. Government purpose rights enable the government to allow others to use the data for government purposes, while limited rights generally require the government to obtain the contractor's written permission before doing so.

Further, under the agreement, DARPA did not receive any rights to any technical data produced under the agreement unless DARPA invoked its "march-in" rights. In combination, these terms provided the consortium additional time to commercialize the technology, while limiting the government's rights to that technology.

Overall, we estimated that 42 percent of the 275 firms commercial firms that participated in 1 or more agreements were firms that traditionally had not performed research for DOD. We did not, however, attempt to determine to what extent more flexible intellectual property provisions played a role in each firm's decision to participate or evaluate how each of the agreements addressed intellectual property issues.

We identified two emerging issues that pertained to instrument selection and structure of cooperative agreements and other transactions.[8] First, DARPA and the military services were selecting different instruments and treating specific issues, such as audit requirements, differently, thereby resulting in some confusion among firms that were negotiating agreements with both DARPA and the services. Additionally, we found that there remained disagreement between the military services and DARPA on whether the Bayh-Dole Act applied to other transactions. Consequently, we recommended that DOD provide revised guidance, in part, to promote increased consistency among DOD components on the selection and structure of the instruments. DOD has since issued guidance on several occasions, most recently in February 1999. In general, this guidance established a single class of assistance instruments called "technology investment agreements" to reduce confusion and increase consistency in the types of assistance instruments used by DOD, and clarified that DOD personnel could provide more flexible terms than would be available under Bayh-Dole should the situation warrant it.

In April 2000, we reported on DOD's use of 97 Section 845 agreements that had been awarded as of October 1998.[9] As part of this review, we discussed the extent to which DOD had used Section 845 agreements, for

[8] We also noted that about 10 percent of the recipients' planned contributions was attributable to the value of past research efforts, rather than concurrent financial or in-kind contributions. We noted that this practice may not provide accurate depiction of the relative financial contributions of the parties under the agreement. Current DOD guidance does not allow the cost of prior research to count as part of a recipient's cost-share.

[9] *Acquisition Reform: DOD's Guidance on Using Section 845 Agreements Could be Improved* (GAO/NSIAD-00-33, Apr. 7, 2000).

what types of projects, their dollar value, and the reasons cited by DOD components for using Section 845 agreements, among other things. We also reported on how DOD tailored these agreements to address intellectual property issues and the degree to which DOD attracted commercial firms.

To determine how the agreements addressed intellectual property issues, we compared the agreement's language with the standard contract provisions required under the Federal Acquisition Regulation to assess whether and how they differed. We found that DOD personnel incorporated the applicable standard contract provision governing patent rights in 25 agreements. In the other 72 agreements, DOD incorporated language that varied widely. For example, DOD personnel often provided contractors between 4 to 12 months to notify the government of an invention under Section 845 agreements, compared to 2 months provided in a standard procurement contract. In some cases, the contractor was allowed to maintain inventions as trade secrets; in other cases, the government declined patent rights altogether. Finally, some agreements clarified the definition of an invention to specifically exclude pre-existing inventions. With regard to obtaining rights to technical data under Section 845 agreements, most agreements used tailored clauses, which could involve DOD declining any rights to data or accepting government purpose rights for 10 years.

Similar to what we found in our earlier report, DOD personnel attributed, in part, the participation of commercial firms to their ability to tailor the agreement's terms and conditions, including the intellectual property provisions. For example:

- A small commercial firm submitted an unsolicited proposal to DARPA to develop and demonstrate an unmanned aerial vehicle capable of vertical take-off and landing based on the company's existing proprietary technology. The company, however, was unwilling to work under a standard contract, citing, among other factors, intellectual property concerns. DARPA agreed to not accept any technical data in the $16.7 million agreement; however, the agreement provided DARPA options to subsequently acquire government purpose rights to the data at a cost ranging from $20 million to $45 million or by purchasing 300 vehicles. According to the agreement, the rights would be sufficient to establish a second source for competition.
- In January 1997, the National Imagery and Mapping Agency solicited proposals to develop and exploit commercial information technologies for national security purposes. Contractor representatives suggested that

using a Section 845 agreement would help their consortium attract commercial firms, in part by being able to provide more flexible intellectual property provisions. The resulting Section 845 agreement had a potential value of $75 million. Contractor officials indicated that about half of the work is being performed by business units that for various reasons would not have participated under a standard contract.

Overall, however, we reported that Section 845 agreements achieved mixed results in attracting commercial firms that traditionally did not do research for the government at either the prime contractor or subcontractor level. For example, 84 of the 97 agreements were awarded to traditional defense firms. At the subcontractor level, DOD officials indicated that traditional defense firms attracted commercial firms in 24 of the 84 agreements they were awarded. For the remaining agreements, DOD officials reported that either the prime contractor did not attract commercial firms at the subcontract level (20 agreements) or they did not know whether the prime contractors had attempted to do so (34 agreements). Agreement officers did not provide information on six agreements.

Additionally, we found that DOD analyses supporting these arrangements often did not address why either the standard contract provision or a tailored approach was selected, or discuss the anticipated benefits of the approach selected. In part, this was due to the use of a model agreement that was developed by DARPA and which formed the basis for many of the agreements. Consequently, our review of the agreement officers' analyses found that discussions were often limited to how the terms differed from the model agreement.

At the time of our review, DOD was in the process of developing additional guidance to enable its personnel to both take advantage of the flexibility afforded by the agreements and protect the government's interests. We recommended that this guidance, among other things, provide a framework to tailor the terms and conditions appropriate for each agreement. We also recommended that DOD establish and use a set of metrics, including the number of commercial firms participating in Section 845 agreements, which are measurable and directly related to the agreement's use.

In December 2000, DOD issued guidance that is intended to provide a framework for DOD personnel to consider when using Section 845 agreements. Our initial observations of the section dealing with intellectual property indicated that it does provide various factors for DOD

personnel to consider when structuring and negotiating intellectual property provisions. In general, the guide indicates that DOD personnel should seek to obtain intellectual property rights consistent with the Bayh-Dole Act for patents and 10 U.S.C. 2320 and 10 U.S.C. 2321 for technical data, but notes that they may also negotiate rights of a different scope when necessary to accomplish program objectives and foster government interests. For example, the guide notes that when the government overestimates the intellectual property rights it will need, the government might pay for unused rights and dissuade new business units from entering into an agreement. At the same time, DOD personnel needed to consider such factors as the costs associated with the inability to obtain competition for the future production, maintenance, upgrade and modification of prototype technology, or the inability of the government to adapt the developed technology for use outside the initial scope of the prototype project. The guide also requires DOD personnel to collect information on the prime contractor and commercial firms that participate to a significant extent in the prototype project.

I would also like to note that on April 30, 2001, DOD issued a guide that specifically focused on intellectual property issues. This guide was in response to a September 2000 memorandum issued by the Under Secretary of Defense (Acquisition, Technology and Logistics) that called for DOD to create an environment where industry is willing to share commercially generated research with defense communities so that weapons systems can keep pace with technology. The guide provides a description of the fundamental principles and concepts of negotiating intellectual property rights, a framework of the key aspects of intellectual property and how it is treated in government contracting, a description of the major intellectual property issues that keep some companies from responding to solicitations, as well as possible solutions to attract their involvement. The guide provides DOD personnel another resource to identify ways to negotiate provisions that meet each parties' needs, whether on standard procurement contracts or on other transactions.

Before concluding, I would like to note two recent legislative changes that affect DOD's use of Section 845 agreements that were not related to intellectual property issues, but more to the overall management and oversight of Section 845 agreements. First, Congress passed legislation in October 1999 that required that agreements that provide for payments in excess of $5 million include a clause providing GAO the right to examine

the records of participants.[10] This requirement can be waived under certain circumstances. In recommending the provision, the Senate Armed Services Committee noted that DOD had used Section 845 authority to fund such efforts as the billion dollar Evolved Expendable Launch Vehicle program and a new Navy oceanographic research ship, and had sought legislation to extend the authority to production contracts. Consequently, as the size, costs and complexity of programs being funded using other transactions increased, the committee wanted to ensure that GAO had audit access in relation to the higher levels of spending and risk.

Additionally, in October 2000, Congress passed legislation that required that a Section 845 agreement include at least one nontraditional defense contractor participating to a significant extent in the effort; if not, at least one third of the total cost of the project was to be provided by parties other than the federal government.[11] The requirement for cost-sharing could be waived by DOD's senior procurement executive. The legislation also defined what constituted a nontraditional defense contractor and clarified our audit access rights to exclude commercial firms who had done business with government only under other transactions or through cooperative agreements, and clarified the types of records to which we had access. In recommending a similar provision, the Senate Armed Services Committee noted it would support using Section 845 agreements to attract companies that typically do not do business with DOD, and encourage cost sharing and experimentation in potentially more efficient ways of doing business with traditional defense contractors. The committee also noted that it was important for DOD to have the flexibility to use innovative instruments to provide access to advanced commercial technology, but that there were improvements that could be made in managing and overseeing Section 845 agreements.

Conclusion

The research and development environment has changed dramatically over the past several decades. The government is no longer in the driver seat, yet it still needs access to research and technology advances. At the same time, its effort to compete for access must be balanced against a range of commercial, economic, legal and other interests. The vehicles I've discussed today are among the tools that the government can use to attract new players to the research and development arena and to

[10] P.L. 106-65, October 5, 1999.

[11] P.L. 106-398, October 30, 2000.

maintain access to advances. However, effective use of these tools requires good training and a greater exercise of reasoned discretion among program officials and contracting officers. The Department of Defense has taken a very good first step in developing appropriate guidance. However, the next steps are more critical: providing the training and assurances that the guidance will be appropriately implemented.

Mr. Chairman, this concludes our prepared statement. We will be happy to respond to any questions you or other Members of the Subcommittee may have.

Contact and Acknowledgment

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