

**GOVERNMENT-FUNDED SOFTWARE: SHOULD IT RESIDE IN THE PUBLIC DOMAIN
OR BE OWNED BY THE PRIVATE CONTRACTORS THAT CREATED IT?**

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INTRODUCTION

United States law and policy traditionally supports the open availability and unconstrained use of scientific data.¹ This regime, which remains among the world's most open,² has promoted the broadest possible dissemination and use of scientific data produced by governmental or government-funded sources. This policy has been implemented in several complementary ways: by expressly prohibiting intellectual property (IP) protection of all information produced by the federal government;³ by contractually reinforcing the tradition of sharing science through open data terms and conditions in federal research grants and contracts;⁴ by carving out a large and public domain for non-copyrightable data;⁵ or by applying other immunities and exceptions that favor science and education over intellectual property rights that otherwise protect collections of information.⁶

"Public domain" information is defined as sources and types of data and information whose uses are not restricted by statutory intellectual property laws or other legal regimes and are therefore available to the public for use without prior authorization. Information in the public domain, including scientific data and information, may be divided into three major categories: (1) information that is not subject to protection under exclusive intellectual property rights; (2) information that is protectable subject matter (such as scientific data collections) under some intellectual property legal regime, but yet is contractually designated as unprotected, i.e. is transferred or donated to a public archive or data center, or is made available directly to the public, with no rights reserved; and (3) information that becomes available under statutorily created immunities and exceptions, which is included here although it does not constitute public domain information *per se*.

The United States, unlike most other countries, operates under a non-proprietary principle regarding government employee-generated work, because the federal government is prohibited by law

¹ See NATIONAL RESEARCH COUNCIL, BITS OF POWER: ISSUES IN GLOBAL ACCESS TO SCIENTIFIC DATA 2 (1997).

² See PETER N. WEISS & PETER BACKLUND, INTERNATIONAL INFORMATION POLICY IN CONFLICT: OPEN AND UNRESTRICTED ACCESS VERSUS GOVERNMENT COMMERCIALIZATION, in BORDERS IN CYBERSPACE 300, 307 (Brian Kahin & Charles Nesson eds., 1997).

³ See 17 U.S.C. § 105 (2000) for statutory waiver of copyright in government production.

⁴ R.K. Merton, THE NORMATIVE STRUCTURE OF SCIENCE, in THE SOCIOLOGY OF SCIENCE 267-78 (R.K. Merton ed., 1973).

⁵ 17 U.S.C. §§ 102(a)-(b), 103(b) (2000); Feist Publ'ns, Inc. v. Rural Tel. Servs. Co., 499 U.S. 340 (1991).

⁶ See, e.g., 17 U.S.C. § 107 (2000) (fair use); § 108 (reproductions by libraries and archives); § 109(a) (first-sale doctrine); § 110(1) (face-to-face teaching activities); § 110(2) (educational broadcasts).

from claiming protection of its publications.⁷ The bulk of the data and information produced directly by the government therefore automatically enter the public domain year after year, with no proprietary restrictions.

Copyright protection is not available for any work of the U. S. Government.⁸ A “work of the U. S. Government” is defined as a work prepared by an officer or employee of the Government as part of that person’s official duties.⁹ The current language of 17 U.S.C.S. §105 was enacted as part of the general revision to the Copyright Act in 1976 that carried forward this provision,¹⁰ which was expressly mentioned in the Copyright Act of 1909.¹¹ The statutory prohibition against copyright in works of the Federal Government first appeared in the Printing Act of 1895,¹² and has been presumed to exist before that time.¹³

As a matter of public policy, works that are normal products of the Government (e.g., judicial opinions,¹⁴ administrative rulings,¹⁵ and legislative statutes¹⁶) or prepared by Government employees in the course of their official duties, may not be copyrighted.¹⁷ The federal government, however, is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

⁷ The Copyright Act of 1976, 17 U.S.C.S. §§ 101 *et seq.*

⁸ *Id.* § 105.

⁹ See NASH, RALPH C. & RAWICZ, LEONARD, *COMPUTER SOFTWARE, INFORMATION, AND CONTRACTOR REMEDIES* (1999).

¹⁰ See H.R. REP. NO. 94-1476, at 59 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5670. (“The basic premise of §105 of the bill is the same as that of section 8 of the present law (section 8 of former title 17) – that works produced for the U.S. Government by its officers and employees should not be subject to copyright. The provision applies the principle equally to unpublished and published works.”)

¹¹ Section 8 of The Copyright Act of 1909 (35 Stat. 1075, chap. 320) provided, in pertinent part that “...no copyright shall subsist ... in any publication of the United States Government or any reprint, in whole or in part thereof.”

¹² Chap. 23, 28 Stat. 601 (1895), section 52. See 765, *Note: A Constitutional Analysis of Copyrighting Government-Commissioned Work*, 84 Colum. L. Rev. 425, 430 (1985); (noting that the “impetus for enacting the Printing Law was the ‘Richardson Affair.’ Congressman Richardson had been assigned the task of assembling presidential documents for publication, which he printed with a copyright notice in his name. Although Richardson asserted that he did not claim copyright as against the government, a subsequent Senate investigation nevertheless declared his copyright invalid.”)

¹³ See Robert M. Gellman, *Twin Evils: Government Copyright and Copyright-like Controls Over Government Information*, 45 Syracuse Law Rev. 999 (1995) at 1024, (citing MORRIS B. SCHNAPPER, *CONSTRAINT BY COPYRIGHT: A REPORT ON “OFFICIAL” AND “PRIVATE” PRACTICES*. Wash. D.C., Public Affairs Press, 1960 at 98: (“Prior to 1895, it was generally recognized that copyrighting of federal government material was improper.”). On the history of the exclusion for works of the government, see also Jerry E. Smith, *Government Documents: Their Copyright and Ownership*, 5 Texas Tech Law Rev 71 (1973).

¹⁴ *Banks v. Manchester*, 128 U.S. 244 (1888).

¹⁵ *State of Georgia v Harrison Co*, 548 F Supp 110, 114 (ND Ga 1982).

¹⁶ *Howell v Miller*, (91 F 129 (1898).

¹⁷ The Compendium of Copyright Office Practices (Compendium II) section 206.01, Paragraph 3.6 at 14 February 2006).

For example, software developed under a Government contract may be copyrighted and transferred or licensed to the Government by an assignment. In this case, the author copyrights the material and may assign all ownership rights or grant licenses to the Government.¹⁸

The role of government in supporting scientific progress in general,¹⁹ and its influence on the creation and maintenance of the research commons in particular, cannot be overstated: the U.S. government produces the largest body of public domain data and information used in scientific research and education in the world. A number of well-established reasons support the policies that promote open access to and use of government-generated data, often at no cost to the public. The government needs no legal incentive to create the information; the taxpayer has already paid once for the production of a database, report, or software and should not pay twice; transparency of governance and democratic values would be undermined by limiting broad dissemination and use of public data and information; citizens' First Amendment rights might be compromised; and the nation generally benefits from broad, unrestricted access to and use of government databases and other public information by all citizens to promote economic, educational, and cultural values.²⁰

The federal government's current policies relating to scientific data activities date back to the era of "big science" following World War II, which established a framework for the planning and management of large-scale basic and applied research programs.²¹ Most of this research was initially conducted in the physical sciences and engineering, fueled by the Cold War and related national defense concerns. Although a substantial portion of this research was classified, at least initially, the default rule was that research data and information produced by the government entered the public domain.

¹⁸ See, e.g., GENERAL SERVS. ADMIN. ET AL., FEDERAL ACQUISITION REG. SUPP. 52.227-14, (b)(2),(d) (Sept. 2001) [hereinafter FAR]; U.S. DEP'T. OF DEFENSE, DEFENSE FEDERAL ACQUISITION REG. SUPP. 227.7103-4, 227.7203-4, (Aug. 17, 1998) [hereinafter DFARS].

¹⁹ For an overview of the role of the U.S. government in the domestic research system, see DONALD E. STOKES, PASTEUR'S QUADRANT: BASIC SCIENCE AND TECHNOLOGICAL INNOVATION (1997).

²⁰ See generally Henry H. Perritt, Jr., *Sources of Rights to Access Public Information*, 4 Wm. & Mary Bill Rts. J. 179 (Summer 1995).

²¹ See generally BIG SCIENCE: THE GROWTH OF LARGE-SCALE RESEARCH (Peter L. Galison et al. eds. 1994).

This research model yielded a succession of impressive scientific and technological breakthroughs and well-documented socio-economic benefits. However, in the 1980s, the success of Japan in rapidly marketing technology invented or discovered in the United States, yet still just “sitting on the shelf” in the USA, caused great consternation. The public outcry concerning “useless” university research subsequently created a driving force for the federal government to pass new laws and regulations that would have the effect of quickly and efficiently moving scientific research to the marketplace. This resulted, subsequently and consequentially, in a movement away from the Cold War-era research model. There has been a marked tendency to shift the production of science and technology from the public to the private sector, escalating during the last fifteen years, that has arguably led to a “commoditization” of scientific data, research, and works. This development occurred against the background of a broader trend in which the government's share of overall funding for research and development compared to that of the private sector has decreased significantly.²²

STATEMENT OF THE PROBLEM

Should software created by commercial firms acting as federal contractors which result from applied research that has been substantially or fully subsidized by the United States Federal Government by contracts be protected by copyright that belongs to the private contractor, or immediately enter the public domain? Some would argue that such works must be placed in the public domain in the same manner as works prepared by government employees. Certainly, they argue, works created by government employees are the same as works created by government funded employees, since the money comes from the same place: the taxpayer. Conversely, should the balancing of interests that has historically informed copyright policy be applied to commercially-generated works that have been government supported, and the works remain private property of the contractor? Should

²² GAO-02-723T: *Industry and Agency Concerns over Intellectual Property Rights: Hearings Before the Subcomm. on Technology and Procurement Policy, House Comm. on Government Reform*, 107th Cong. (May 10, 2002) (statement of Jack L. Brock, Jr., United States General Accounting Office.)

the software be distributed freely as open access software, to be used and revised as users desire?

The problem is exacerbated by the fact that current technology leadership has shifted from the government to industry, where most research and development (R&D) dollars are now spent. That means that more taxpayer dollars are converted into private property, when contractors get to keep copyrights in the software they develop. Has the government, by revising regulations in the 80s to allow commercial firms to retain copyright in federally-funded works, gone too far in order to spur innovation and create wealth?

Current debates include the issue of “fairness” to allow a commercial entity to use government funding to develop computer software which it then licenses to another commercial entity. Since the Government holds a license to that computer software and can sometimes release it to a third party for no fee, should the contractor copyright holder be required to disclose (through labeling or other means) to potential licensees that the Government can and will distribute this intellectual property to the public free of charge? Should the contractor be able to reap financial benefits from its hard work in developing the software, by licensing it to whomever it can? Why are there different standards and different requirements for copyright holders of computer software and data created with federal funding; material developed under federal contract law; and Copyright Act §105 matters?

This paper will explore these issues, evaluate several reform proposals, and end with a conclusion.

THE TENSION BETWEEN PUBLIC AND PRIVATE OWNERSHIP OF FEDERALLY-FUNDED IP

Copyright, from its beginnings in England in the sixteenth century, has been a means of protecting the “haves”: of limiting access to books and information in order to maintain order and discipline in the trade, of creating a monopoly over knowledge.

There are, of course, very good arguments in favor of copyright. These include the principle that those who create and disseminate knowledge and knowledge products should economically benefit from these creations and that the creator should maintain some basic control over the creation. Also inherent in the idea of copyright is that intellectual creativity should also benefit society; this is indeed the underpinning of copyright as expressed in the American Constitution: with power (and copyright clearly bestows considerable power on the copyright holder) comes responsibility. There has always been a tension between protecting intellectual property and disseminating works freely. The tension between promoting public innovation and promoting private wealth is expressed in the U.S.

Constitution:

Congress shall have power . . . To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.²³

For the most part, those who hold most of the world's copyrights see copyright in purely legal and economic terms. There is virtually no recognition that there are inherent non-economic factors such as moral and ideological concepts, as well as legal and economic concepts, involved in copyright policy.

Currently, due to the provisions in Executive Order 12591²⁴ granting Federal contractors to retain rights to software, engineering drawings, and other technical data generated by Federal grants and contracts, in exchange for royalty-free use by or on behalf of the government, not all products of government sponsored research are placed in the public domain. This order required executive agencies to promote commercialization

Some would argue that this provision of the Executive Order should be rescinded, while others would point to the wisdom of the provision manifested in the explosion of tech transfer and innovation, with corresponding increase in wealth, made possible by allowing inventors to keep the exclusive right

²³ U.S. CONST. art. I § 8, cl. 8.

²⁴ 52 Fed. Reg. 13,414 (Apr. 10, 1987).

to their discoveries.²⁵ Current Federal government policy encourages the maximum practical commercial use of intellectual property developed while performing government contracts.

HISTORY AND POLICY OF FEDERAL IP FUNDING OF CONTRACTORS & IP RIGHTS ALLOCATION

Under the copyright law, an "author" has immediate copyright as soon as a "work" is fixed in a tangible medium of expression.²⁶ The old requirement for attaching a copyright notice to the work has been abolished (maybe it should be resurrected, at least on federally-funded software). Normally, the owner of the copyright is the author of the work, but if the work was prepared in the scope of the author's employment, the employer of the author is the owner under the "work for hire" doctrine.²⁷ Works of the Government--i.e., works of Government employees as part of their official duties--are not subject to copyright protection.²⁸ However, the copyright law does not preclude the Government from taking either license or title in works created by Government contractors during the performance of their contracts.

Another policy issue is the status of works that are not directly prepared by the government, its officers or employees, but are made under contract with substantial funding support from the government. While the Legislative History of the 1976 revision to the Copyright Act recognized this issue, it left the matter unresolved:²⁹

A more difficult and far-reaching problem is whether the definition should be broadened to prohibit copyright in works prepared under U.S. Government contract or grant. As the bill is written, the Government agency concerned could determine in each case whether

²⁵ Council of Advisors on Science and Technology, *Technology Transfer of Federally-Funded R&D*, <http://www.ostp.gov/PCAST/PCASTTechTransferReport.pdf> (last visited Mar. 30, 2007).

²⁶ 17 U.S.C. § 102(a).

²⁷ *Id.* § 201(b).

²⁸ *Id.* § 105

²⁹ H. Rep. 94-1476, 94th Cong., 2d Sess. (1976) at 59.

to allow an independent contractor or grantee, to secure copyright in works prepared in whole or in part with the use of Government funds.

Here, Congress recognized that agencies of the Federal Government should possess the power to determine whether copyright interests should arise in situations where the author has been subsidized by government funds. While not often invoked, this agency discretion to preclude copyright in favor of the public domain is enforceable.

For over a quarter of a century, the status-quo favoring broad copyrightability in federally supported works has remained undisturbed, and scant attention has been given to the underlying issue by government entities, policy makers, legislators, and members of the public. Given the growing importance of science, technology, and mathematics research and the publications that grow out of it, it seems an anomaly that the determination of copyright policy continues to be made on an ad-hoc basis at the agency level.³⁰

On April 10, 1987, President Reagan issued Executive Order 12591,³¹ implementing the Federal Technology Transfer Act of 1986,³² amending the Stevenson-Wydler Act.³³ This order, as amended by Executive Order 12618,³⁴ contains a single provision stating executive branch policy with regard to copyright policy on Government contracts. Section 1(b) stated:

“The head of each Executive department and agency shall, within overall funding allocations and to the extent permitted by law: cooperate, under policy guidance provided by the Office of Federal Procurement Policy, with the heads of other affected departments and agencies in the development of a uniform policy *permitting Federal contractors to retain rights to software, engineering drawings, and other technical data generated by Federal grants and contracts, in exchange for royalty-free use by or on behalf of the government.*”

This policy, if followed literally, would permit contractors to copyright all works created during

³⁰ See House Committee on Appropriations, House Rep. 108-188 (to accompany H.R. 2660) at 89 (expressing concern about lack of access to research data and rising subscription charges and asking for a report about potential remedies to alleviate such restrictive trends).

³¹ 52 Fed. Reg. 13,414 (Apr. 10, 1987).

³² Pub.L. No. 99-502, 100 Stat. 1785 (1986).

³³ 15 U.S.C. § 3710.

³⁴ 52 Fed. Reg. 48,661 (Dec. 24, 1987).

the performance of Government contracts and the Government to take a license in such works for Government purposes, all the while making no distinction between works specifically created as the end product of the contract and works that were a byproduct of contract performance. The reason that this language was included in the Executive Order was to encourage commercial firms to work with the Government (usually considered to be relatively inflexible and inefficient) to create new technology. A problem with this language is that it appeared that the taxpayer now pays twice for the new technology. Is the outcome justified?

Technology transfer of government-sponsored research to the private sector in the United States is affected by a number of laws and regulations. In particular, there are two laws, which cover technology funded or created by the U.S. Government: the Bayh-Dole Act,³⁵ which among other things, gave US universities, small businesses, and non-profits intellectual property control of their inventions that resulted from federal government-funded research, and the aforementioned Federal Technology Transfer Act. Both laws are supplemented by regulations issued by the Department of Commerce. In a May 2003 report, President Bush's Council of Advisors on Science and Technology concluded that these laws dramatically improved the nation's ability for moving ideas from research and development to the marketplace and into commerce.³⁶

During the late 1970s and early 1980s, businessmen and policymakers became increasingly concerned about the apparent deterioration of America's comparative advantage in high technology industries such as the semiconductor industry. In fact, trends within that industry became a catalyst for dramatic changes in the way the U.S. protects intellectual property.³⁷ A theory emerged that the loss of competitiveness of American firms could be explained at least partially by two "features" of the US national system of innovation.³⁸ First, the system, regarded as too much oriented towards basic

³⁵ 35 U.S.C. § 200-212.

³⁶ Council of Advisors on Science and Technology, *Technology Transfer of Federally Funded R & D*, <http://www.ostp.gov/PCAST/PCASTTechTransferReport.pdf> (last visited Mar. 30, 2007).

³⁷ R. HUNT, *WHAT HAPPENED IN THE 1980's ?* (1999).

³⁸ MIT, *MADE IN AMERICA* (1989).

research, was judged to be poorly designed to quickly and efficiently deliver its results to firms, in an age where time to market had become a key competitive argument; and second, results of research were too easily available for American rivals and insufficiently protected by the patent system. Thus, foreign rivals, specifically Japanese firms, could take advantage of American discoveries and inventions at zero or very low costs and turn them into a series of competitive products in the U.S. domestic market.³⁹ This double thesis, which quickly became dominant in the circles of decision-makers, was the impetus for studies and works sponsored by authorities, aiming to modify the general framework in which the various actors in the innovation community operated. A very peculiar “climax” prevailed in the 80’s in the United States.⁴⁰ Some of the recommendations formulated in those studies aimed at adjustments of regulations governing government sponsored research. These changes introduced new institutional policies, in such a way that in less than two decades, the functioning and the dynamics of American sponsored research and development changed dramatically.

Besides the Government Patent Policy Act of 1980,⁴¹ other notable acts were the National Cooperative Research Act of 1984⁴² which authorized the relaxation of antitrust laws for R&D, as well as the Omnibus Trade and Competitiveness Act of 1988,⁴³ including the " 301 special " section dedicated to defense and the international promotion of American IP rights. The following table shows the flurry of legislation produced in order to move the United States to a new regime that fostered a nimble and robust response to the “Japan” problem.

U.S. FEDERAL GOVERNMENT SOLUTION ON HOW TO ENCOURAGE THE PRIVATE-SECTOR TO FIND INNOVATIVE SOLUTIONS FOR GOVERNMENT TECHNOLOGY NEEDS

³⁹ C. EDQUIST, SYSTEMS OF INNOVATION: TECHNOLOGIES, INSTITUTIONS AND ORGANIZATIONS, Science, Technology and the International Political Economy Series, June 10, 1997.

⁴⁰ Kneller, Robert, *Intellectual Property Rights and University-Industry Technology Transfer in Japan*, in INDUSTRIALIZING KNOWLEDGE: UNIVERSITY-INDUSTRY LINKAGE IN JAPAN AND THE UNITED STATES (Lewis M. Branscomb et al. eds., 1999).

⁴¹ 35 USC §202.

⁴² 15 U.S.C. §§ 4301 – 4305.

⁴³ 19 U.S.C. 2906(6).

The concept of IP is fundamental to a capitalist society. A company's interest in protecting its IP from uncompensated exploitation is profound. Often companies will not consider jeopardizing their vested IP to comply with the Government contract clauses that have remained in use since the days when the Department of Defense (DoD) was the technology leader and frequent funder of research programs. The federal government was compelled to create a new environment for negotiating IP terms and conditions that protected the true interest of the Government, which is to incorporate technologically advanced solutions into weapons and management systems deployed by the government.

Year	Legislation
1980	Public Law 96-480, Stevenson-Wydler Technology Innovation Act, as amended in 1986 and 1990
1980	Public Law 65-517, Patent and Trademark Amendments Act Patent and Trademark Amendments Act, and 1983 Reagan's memo on government patent policy
1981	Public Law 97-34 Economic Recovery Act
1982	Public Law 97-219, Small Business Innovation Development Act
1983	Public Law 97-414, Orphan Drug Act, as amended in 1984, 1985, 1990
1984	Public Law 98-462, National Cooperative Research Act
1986	Public Law 99-502 Federal Technology Transfer Act
1986	Public Law 99-660, Drug Export Amendments Act de 1986
1987	Presidential Executive Order 12591
1988	Public Law 100-418, Omnibus Trade and Competitiveness Act
1993	National Cooperative Research and Production Act.
1993	Public Law 103-182, North American Free Trade Agreement
1993	Public Law 230-234, Defense Appropriations Act, Technology Reinvestment Program
1994	Public Law 103-465, General Agreement on Tariffs and Trade

Table 1: Selected legislation enabling a competitiveness R&D policy in the USA.⁴⁴

To this end, on January 5, 2001, the Under Secretary of Defense for Acquisition, Technology and Logistics [USD(AT&L)] highlighted the importance of engaging in certain practices currently permitted by regulation, including emphasizing the use of specifically negotiated license rights,

⁴⁴ Slaughter, S. and Rhoades, G., *The Emergence of a Competitiveness Research and Development Policy Coalition and the Commercialization of Academic Sciences and Technology*, SCIENCE, TECHNOLOGY, & HUMAN VALUES, 1996, pp. 309 - 339.

commonly referred to as “special licenses,”⁴⁵ exercising flexibility when negotiating patent rights, using performance-based acquisition strategies that may obviate the need for data and/or rights, and acquiring only data and/or rights to data truly needed for a given acquisition.

The government today is challenged to find ways to entice commercial industry into collaborating with the government, especially with the Department of Defense and the Department of Energy, in vital research efforts and to acquire commercial products using commercially friendly terms. Within the commercial sector, companies have identified a number of specific intellectual property concerns that affected their willingness to contract with the government, including perceived poor definitions of what technical data is needed by the government, issues with the government’s ability to protect proprietary data adequately, and unwillingness on the part of government officials to exercise the flexibilities available to them concerning intellectual property rights; all of these reasons leading to decisions by companies not to seek contracts or to collaborate with federal government entities.⁴⁶

“High-tech” start-ups have a legacy of innovation. Studies show that small businesses introduce roughly 2.5 times as many technological innovations per employee as large businesses, and also a disproportionately large share of the “breakthrough” innovations forming the foundation of U.S. military and economic strength.⁴⁷ High-tech start-ups also have a legacy of avoiding government contracts. Much of the commercial technology sector remains skeptical of the government’s commitment to reform, does not need the government’s business, and distrusts government contracting in general.⁴⁸

DoD clauses related to IP are currently built around the following framework: contractors are generally permitted to retain ownership (e.g., title) of the IP rights governing the

⁴⁵ DFARS 227.7103-5 (d), (Aug. 17, 1998).

⁴⁶ GAO-02-723T, *Industry and Agency Concerns over Intellectual Property Rights: Hearings Before the Subcomm. on Technology and Procurement Policy, House Comm. on Government Reform*, 107th Cong. (May 10, 2002) (statement of Jack L. Brock, Jr., United States General Accounting Office).

⁴⁷ Tim Foreman, June 17, 1999, Deputy Director, DoD OSDBU, Quoted in White Paper for Commercial and Government Practices for Purchasing R&D, www.abanet.org/contract/federal/randcomm/whitepaper.pdf (last visited Dec. 13, 2006).

⁴⁸ Executive summary to RAND Study DRR-2274-A, February 2000.

technologies/information that they develop or deliver under DoD contracts, and DoD receives only a (nonexclusive) license to use that IP. The scope of the license depends on the nature of the data, the relative source of funding for development, and negotiation between the parties. Contract relationships had to be in commercially friendly terms where industry had performed a substantial amount of R&D (sometimes over decades). Every effort had to be made to abide by protection and secrecy concerns, because the IP rights of the companies represent their lifeline to future success.⁴⁹

An investigation into the legislative background of this important policy issue concerning the status of works that are not directly prepared by the government, its officers or employees, but are made under contract with substantial funding support from the government, is instructive. While the legislative history of the 1976 revision to the Copyright Act recognized this issue, it left the matter unresolved:⁵⁰

A more difficult and far-reaching problem is whether the definition should be broadened to prohibit copyright in works prepared under U.S. Government contract or grant. As the bill is written, the Government agency concerned could determine in each case whether to allow an independent contractor or grantee, to secure copyright in works prepared in whole or in part with the use of Government funds.

Here, Congress recognized that agencies of the federal government should possess the power to determine whether copyright interests should arise in situations where the author has been subsidized by government funds. While not often invoked, this agency discretion to preclude copyright in favor of the public domain is enforceable. For example, in *S & H Computer Systems Inc. v. SAS Institute Inc.*⁵¹ a Federal District Court held that where a U.S. Department of Agriculture contract stated that the public would be granted all benefits of any copyrightable results of funded research, the resulting statistical software was in the public domain.⁵² The relevant contractual provision stated:

⁴⁹ OSD (AT&L) letter, Sept. 5, 2000; FAR Part 12.

⁵⁰ H. REP. NO. 94-1476, at 59 (1976).

⁵¹ 568 F. Supp. 416 (D.C. Tenn. 1983).

⁵² *Id.* at 418-19.

“With respect to the publication of any results of the research conducted under this Agreement . . . no copyrights shall subsist in any such publication. . . The public shall be granted all benefits of any patentable results of all research and investigations conducted and all information, data and findings developed under this Agreement.”

But copyright in a subsequent upgrade was not necessarily precluded. (“a genuine factual controversy exists regarding the alleged similarity of SAS 76.2 and SAS 79.5. All or at least some portions of SAS 79.5 may be validly copyrightable. Thus, the Court cannot dismiss the SAS claim for copyright infringement.”⁵³ Subsequently, the court found the upgrade to constitute “a new and original work of authorship, above and beyond the pre-existing work contained in earlier release of SAS. Accordingly, the copyright in SAS 79.5 is valid and fully enforceable.”⁵⁴

A 1976 House Report also discussed the policy arguments on both sides of the issue:⁵⁵

The argument that has been made against allowing copyright in this situation is that the public should not be required to pay a "double subsidy," and that it is inconsistent to prohibit copyright in works by Government employees while permitting private copyrights in a growing body of works created by persons who are paid with Government funds. Those arguing in favor of potential copyright protection have stressed the importance of copyright as an incentive to creation and dissemination in this situation, and the *basically different policy considerations*, applicable to works written by Government employees and those applicable to works prepared by private organizations with the use of Federal funds.

The Report does not explain what these “basically different policy considerations” are that distinguish works directly prepared by government employees from works prepared under federal subsidies. This crucial distinction is often referred to as one between “intramural” and “extramural” funding. According to the National Institutes of Health (NIH), “Intramural NIH research is done by scientists employed by the Federal government. Most of them work on the NIH campus in Bethesda, Maryland. Extramural NIH research is done across the United States and in some foreign countries by

⁵³ *Id.*, at 419.

⁵⁴ SAS Institute, Inc. v. S & H Computer Systems, Inc., 605 F. Supp. 816, 827 (D.C. Tenn. 1985).

⁵⁵ H. Rep. 94-1476, 94th Cong., 2d Sess. (1976) at 59.

investigators who have been awarded grants through the NIH grant program.”⁵⁶

The 1976 Act did not resolve the disparate treatment between in-house and commissioned works, but the House Report indicated the intention to leave the question open for a case-by-case determination on the part of individual funding agencies.⁵⁷

The bill deliberately avoids making any sort of outright, unqualified prohibition against copyright in works prepared under Government contract or grant. There may well be cases where it would be in the public interest to deny copyright in the writings generated by Government research contracts and the like; it can be assumed that, where a Government agency commissions a work *for its own use merely as an alternative to having one of its own employees prepare the work*, the right to secure a private copyright would be withheld. However, there are almost certainly many other cases where the denial of copyright protection would be unfair or would hamper the production and publication of important works. Where, under the particular circumstances, Congress or the agency involved finds that the need to have a work freely available outweighs the need of the private author to secure copyright, the problem can be dealt with by specific legislation, agency regulations, or contractual restrictions.

Currently, under the Federal Acquisition Regulations (FAR),⁵⁸ it is possible that when the Government sponsors and funds the creation and development of intellectual property, that technology developed with government funds can be provided to the government with “unlimited rights,” while the private contractors generally retain copyright in any work authored by them, regardless of the source of funds. Since the contractor holds a copyright, it can license the work, such as valuable computer software, to a third party for a licensing fee. However, if the Government holds “unlimited rights” in accordance with the terms of its contract, it has the right to use and disclose the data publicly, in any manner and for any purpose, and to permit others to do so.

DATA

Another issue that arises is the definition of “data.” The term “data” is commonly held to refer

⁵⁶ National Institutes of Health, *Researching the History of the NIH: Frequently Asked Questions*, <http://history.nih.gov/01Docs/about/FAQs.htm#Whatisthedifference> (last visited Mar. 30, 2007)

⁵⁷ H. Rep. 94-1476, 94th Cong., 2d Sess. (1976) at 59.

⁵⁸ 48 C.F.R. § 1.301.

to information, works protected by copyright, and the various tangible products that may arise from research, including embodiments of software. The FAR defines data as:

"Data . . . means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing or management information."⁵⁹

Data ownership is a bundle of rights. The concept of ownership, upon analysis, reduces to a bundle of socially sanctioned rights held by one party in relation to others in connection with some thing or set of things.⁶⁰ The bundle of rights that define ownership and property is not a set of necessary and sufficient conditions, such that whenever, and only whenever, those conditions obtain does ownership exist (i.e., may it be truly said that A owns a thing B). The jurist A. M. Honoré explains the concept of ownership as being characterized by the following set of rights: ⁶¹ (1) the right to possess; (2) the right to use; (3) the right to manage; (4) the right to income; (5) the right to capital (i.e., to alienate, consume, waste, or destroy); (6) the right to security (i.e., to remain owner indefinitely); (7) the right to transmit by gift, devise or descent; (8) the lack of any term on these rights; (9) the duty to refrain from using the object in ways that harm others; (10) the liability to execution for repayment of debts; and (11) residual rights on the reversion of lapsed ownership rights held by others. To Honoré's list, one might perhaps add the rights of access and disclosure, which are particularly important with regard to information.

Today, persons or entities that may hold rights related to scientific or technical data include a diverse assortment, including individual researchers (who may be faculty, staff, student, or collaborator from another institution), the institution, affiliated institutions, human subjects, the federal or state government, and private corporations. In addition, rights might be shared among more than one of

⁵⁹ 48 C.F.R. § 27.401

⁶⁰ e.g., S. R. MUNZER, A THEORY OF PROPERTY, at 17 (1990); M. Cohen, *Property and Sovereignty*, 13 Cornell L. Quarterly 8,12 (1927) ("property right is a relation not between an owner and a thing, but between the owner and other individuals in reference to things").

⁶¹ A. M. Honoré, *Ownership*, in OXFORD ESSAYS IN JURISPRUDENCE 108, 112-128 (A. G. Guest, ed., 1961).

these rights holders, or distributed among them.

“Data” can also be defined as “tangible research products (TRP):” tangible or corporeal items produced in the course of research projects supported by private or public sponsors. TRP includes such items as biological materials, engineering drawings, computer software, integrated circuit chips, computer databases, prototype devices, circuit diagrams, equipment.⁶² Ownership of tangible research products normally resides with the institution and control resides with the Principal Investigator (PI).

However, rights in tangible products can quickly become complicated. The institution may have actual physical possession of the material, but such possession may have little to do with understanding the rights associated with the material. When research is supported by funding from the Federal Government, careful attention is necessary to determine the federal government's rights in data and IP, which are governed by the funding agreement between the institution and the government.

Generally, three types of contracts exist: (1) procurement contracts, which are used when the government is acquiring property or services for the direct benefit or use of the U.S. Government; (2) grants, which are used when the principal purpose of the relationship is to transfer a thing of value to the recipient to carry out a public purpose and substantial involvement with the granting agency is not expected; and (3) cooperative agreements, which, like grants, are used when the principal purpose of the relationship is to transfer a thing of value to the recipient to carry out a public purpose, but, unlike grants, when substantial involvement with the granting agency is expected.⁶³

Data and IP rights related to procurement contracts are governed by the FAR. Data and IP rights related to grants and cooperative agreements are governed by Office of Management and Budget (OMB) Circular A-110⁶⁴ and by agency-specific regulations and policies, which may incorporate specific provisions of the FAR. Section 36 of OMB Circular A-110 defines rights in intangibles.

Relevant provisions for copyrights include that the recipient of federal funds may own the copyright in

⁶² Stanford University, Research Policy Handbook, <http://www.stanford.edu/dept/DoR/rph/5-3.html> (last visited Nov. 13, 2006).

⁶³ 31 U.S.C. §§ 6303-6305.

⁶⁴ <http://www.whitehouse.gov/omb/circulars/a110/a110.html> (last visited May 23, 2007).

any work that was developed or purchased under an award. Further,⁶⁵

"[t]he Federal awarding agency(ies) reserve a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so."

CURRENT ROLE OF R&D IN THE U.S. INNOVATION SYSTEM

The issue of whether copyright of government-funded works should remain in the public domain, or if copyrights should be granted to contractors in order to provide incentives for these commercial enterprises to work for the government, is increasingly important because R&D is a substantial and growing enterprise in the United States. All in all, the U.S. invested an estimated \$312 billion in R&D in 2004,⁶⁶ representing 2.66% of the nation's Gross Domestic Product (GDP). The largest share of this money (64%) came from industrial firms. Most of the balance (30%) came from the Federal Government, while colleges and universities, private foundations, other nonprofit institutions, and state and local governments provided the remainder.

Industry's share of national R&D funding has been growing steadily for several decades. From the end of World War II to 1980, the federal government supported the largest share of the nation's R&D. Despite its relatively modest share of total U.S. R&D funding, the Federal Government's role is critical to the nation's science and technology enterprise. Federal agencies support nearly two-thirds of the nation's basic research and 58 % of the R&D performed in U.S. colleges and universities. Basic research is the primary source of the new knowledge that ultimately drives the innovation process in the U.S. At the same time, federally funded research at colleges and universities plays a key role in

⁶⁵ FEDERAL OFFICE OF MANAGEMENT AND BUDGET, CIRCULAR NO. A-110, Section 36, PERFORMANCE OF COMMERCIAL ACTIVITIES (Aug. 4, 1983, revised 11/19/93, as further amended 9/30/99).

⁶⁶ AAAS INTERSOCIETY WORKING GROUP, AAAS REPORT XXXI: RESEARCH AND DEVELOPMENT FY 2007, AAAS Publication Number 06-1A, (2006).

educating the next generation of scientists and engineers. Federal applied research and development programs also provide direct support for key government missions, such as improving the nation's health and medical care, exploring space, and national security.

The proposed federal R&D portfolio in FY 2007 is \$136.9 billion, 1.8 % or \$2.4 billion above FY 2006's funding level.⁶⁷ In real terms, the total federal R&D portfolio would therefore decline for the first time since 1996 after flattening out the last few years. Development would be the clear winner: increases for weapons development in the Department of Defense (up \$4.2 billion) and space vehicles development in NASA (up \$907 million) would be far greater than the overall \$2.4 billion increase, leaving all other R&D programs collectively with less money. Development funding would hit a new high of \$77.9 billion (up 6.0 %). Total federal support of research (basic and applied) would fall 3.3 % to \$54.8 billion, even with large proposed increases for physical sciences and related research in NSF, DOE's Office of Science, and NIST. In real terms, the federal research portfolio would fall nearly 6%.

Although the President's budget presentation each year generally contains a section devoted to R&D and a number of tables summarizing proposed federal R&D expenditures, it is important to recognize that there is no overall "R&D budget" and no special treatment for R&D within the budget. Expenditures for R&D programs are regular budget items. They are contained, along with other types of expenditures, within the budgets of more than twenty federal departments and independent agencies. For some of those agencies, such as NSF, NASA, and NIH, R&D is a dominant activity. For others, such as the Department of Housing and Urban Development (HUD), it is a small part of a much larger set of programs. Some R&D programs are "line items" in the budget and are relatively easy to identify as R&D. Others are included within larger line items and are more difficult to ferret out.

Federal R&D expenditures represent 4.9% of the overall proposed \$2.8 trillion federal budget for FY 2007. Nearly all federal R&D comes from the discretionary budget, the one-third of the budget that is subject to annual appropriations decided by the President and the Congress. (The remaining

⁶⁷ *Id.*

two-thirds of the federal budget goes to mandatory programs (entitlements) such as Social Security, Medicare, Medicaid, and interest on the national debt. Less than 0.2% of the federal R&D portfolio is mandatory spending. Federal R&D is roughly one out of every seven discretionary dollars. On the whole, trends in R&D funding have closely followed trends in federal discretionary spending. Despite the fact that R&D funding trends are the combination of hundreds of different budget decisions that are only combined after a budget is finalized, the two trends have matched almost perfectly on the non-defense side for the past thirty years.

On the defense side, R&D has grown as a share of the defense budget over the years as high-tech weapons systems have claimed increasing shares of defense spending.

Although the government maintains several hundred laboratories around the country, only a quarter of federally supported R&D is actually carried out in these labs. The largest share of federally funded R&D is performed by industrial firms under contracts (36% of the total; see Figure 1). A quarter is conducted under federal grants in colleges and universities. Other nonprofit institutions perform a small portion, and 8 % of the portfolio is performed by Federally funded R&D centers (FFRDCs) operated by contractors, such as the Department of Energy's (DOE) Los Alamos National Laboratory and Sandia National Laboratory in New Mexico. Although these figures apply to the overall federal R&D portfolio, each federal funding agency has its own mix of performers depending on the agency's mission and historical relationships with performers.

The majority of DoD's R&D portfolio is performed by industry, for example, while DOE sends the majority of its R&D portfolio to its network of FFRDCs; nearly all of the NSF portfolio, however, goes to universities.

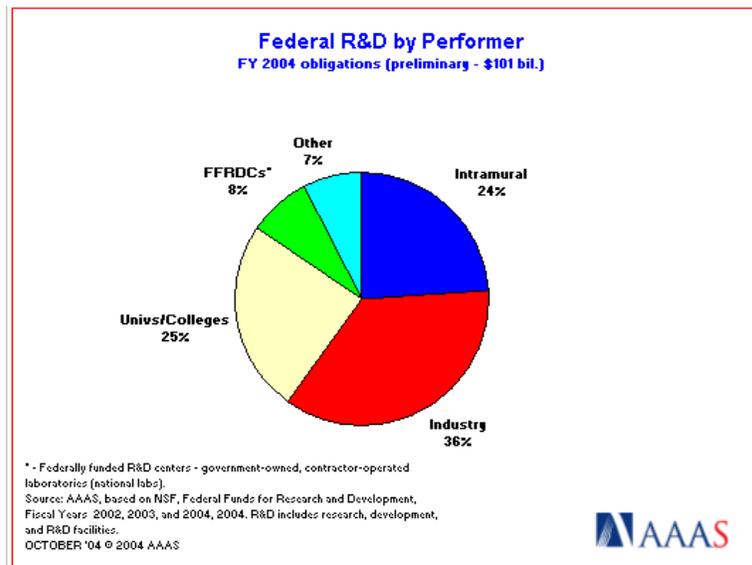


Figure 1. Federal R&D by performer

Altogether, including the research that firms support with their own funds and that which is conducted under government contracts, industry is responsible for performing more than two-thirds (70%) of the nation's total R&D. U.S. academic institutions perform 14%, while federal laboratories, nonprofit institutions (research institutes, hospitals, etc.), and FFRDCs perform the remainder.

FEDERAL ACQUISITION REGULATIONS (FAR), INCLUDING THE DFARS AND THE DEAR

The Federal Acquisition Regulations (FAR) are a series of regulations issued by the federal government of the United States that concern the requirements of contractors for selling to the government, the terms under which the government obtains ownership, title and control of the goods or services purchased, and rules on specifications, payments and conduct and actions regarding solicitation of bids and payment of invoices. Thus, the FAR is the governing regulatory document that allows government contractors to keep copyrights in government-funded IP works, specifically software. It is important to understand what these regulations permit and do not permit, in order to

fully understand the public domain vs. contractor ownership issue of federally-sponsored copyright development. These regulations implement the policy of Executive Order 12591, making it possible for contractors to retain copyright in the software they develop with taxpayer funds. Many have suggested that the complexity of complying with the FAR discourages competition -- especially by small companies. In addition, I suggest that the complexity of the FAR also makes a law student trying to fulfill her writing requirement go insane.

The FAR is codified in Title 48 of the United States Code of Federal Regulations,⁶⁸ is issued pursuant to the Office of Federal Procurement Policy Act of 1974,⁶⁹ and prepared, issued, and maintained jointly by the Secretary of Defense, the Administrator of General Services, and the Administrator, National Aeronautics and Space Administration (NASA).⁷⁰ The FAR consists of two parts: the general acquisition regulations that govern all transactions with the government, in general, and the specific regulations issued by a specific federal agency that govern transactions with that agency. One of the best-known examples of the latter is the Defense Federal Acquisition Regulation Supplement (DFARS) which is used by the Department of Defense. Other specific regulations include the NASA FAR Supplement, the Department of Energy AR (DEAR), the Transportation AR (TAR), the Environmental Protection Agency AR, the Agriculture AR, and the Health and Human Services AR. All the acquisition regulations can be found on the FARSite.⁷¹

The purpose of the FAR is to specify exactly how the government is to acquire a particular product or service, how it is to be judged in terms of quality and price, and to ensure the government does not pay for certain prohibited practices such as cost of lobbying, cost of financing (the government is presumed to pay its bills and thus the supplier should not have to include loss reserves), and to prevent kickbacks, undue influence, corruption and other misconduct.

These regulations govern the Federal government's interactions with contractors. The broadest

⁶⁸ 48 CFR

⁶⁹ Pub. L. No. 93-400.

⁷⁰ 48 C.F.R. §1.103.

⁷¹ FARsite, <http://farsite.hill.af.mil>, (last visited Nov. 26, 2006).

license that the Government obtains is unlimited rights in an item, but this right is still less than title. The essence of title in intellectual property is the right to exclude others, a negative right, whereas a license is merely permission to use, not to exclude. Even with unlimited rights, the Government can exclude no one, but the contractor can still exclude anyone without a license. However, if the Government obtains unlimited rights, any trade secrets in the data are destroyed. Unlimited rights are inconsistent with trade secrets. Nevertheless, the contractor still retains the copyright under which the Government is licensed. Therefore, while the information may be in the public domain, protection under the copyright is retained. This is a very valuable right for computer software because whenever the software is loaded onto a computer, it is copied.

For some data the Government always receives unlimited rights regardless of the source of funding for its development, such as form, fit, and function data (defined as technical data that describes the required overall physical, functional and performance characteristics of an item, component or process to the extent necessary to permit identification of physically and functionally interchangeable items), instructional materials (except for detailed manufacturing and process information), data previously released without restriction, and corrections to Government furnished data.

All of the rights other than unlimited rights have restrictions on the Government's ability to disclose or use. "Limited rights" for technical data and "restricted rights" for computer software are the most restrictive, permitting disclosure for specific purposes, not including for re-procurement or commercial purposes, and no in-house manufacture for technical data. When disclosed, the data's proprietary nature must be protected and the permitted recipient must agree to non-disclosure. This is also true for rights intermediate between unlimited and limited or restricted, such as "government purpose rights," where the Government can disclose the data for any Government purpose, including re-procurement.

The FAR provision for “Computer Software”⁷² requires that the government obtain only the rights in commercial computer software (including commercial computer software documentation) that are customarily provided to the public. In short, the government obtains only those rights which a contractor includes in its standard commercial license agreements, but not including the copyright. Commercial computer software or commercial computer software documentation shall be acquired (by the government) under licenses customarily provided to the public to the extent such licenses are consistent with Federal law and otherwise satisfy the Government needs.⁷³ The Government shall only have those rights specified in the license contained in any addendum to the contract.⁷⁴ In addition, there is no prescribed restrictive legend for commercial computer software, except for FAR 52.227-19(C)(4), which states:

To the extent feasible the Contractor shall affix a Notice substantially as follows to any restricted computer software delivered under this purchase order/contract; or, if the vendor does not, the Government has the right to do so:

Notice Notwithstanding any other lease or license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract (or Purchase Order) No. _____.

An additional concern is the provision in FAR 12.207 that allows only “firm fixed-priced contracts or fixed-price contracts with economic price adjustment for the acquisition of commercial items.” Is FAR 12.207 an impediment to the FAR Guiding Principle of “the Acquisition Team is to exercise personal initiative and sound business judgment in providing the best product or service to meet the customer’s needs?”⁷⁵

DFARS COPYRIGHT LICENSE

⁷² FAR 12.211.

⁷³ *Id.* 12.212(a).

⁷⁴ *Id.* 12.212(d).

⁷⁵ *Id.* 1.102(d).

Since 1984, the FAR has generally controlled all Government acquisitions. Under FAR 1.101, these regulations were "established for ... acquisition by all executive agencies." However, FAR 27.400(a) states "Due to the special mission needs of the DoD and as required by 10 U.S.C. §2320, ... the DoD policies, procedures, and instructions with respect to rights in data and copyrights and acquisition of data are contained in the DoD FAR Supplement (DFARS)." Hence, even though the FAR contains data rights policy and clauses, because of special needs, the DoD agencies must follow the DFARS, particularly Part 227.

Under the DFARS 252.227-7014(b), whenever the Government purchases technical data or computer software, it receives a "license to use and distribute" only, in accordance with the applicable FAR/DFAR provision. Title at all times remains with the developer/contractor even if 100% government funds were used for the development of the data or software. Both the FAR and the DFARS have varying licensing clauses, depending on the classification of the data/software. A contractor's assertion of copyright in a work produced under a DFARS contract does not provide any restrictions to the Government's use of the work^{76, 77}.

In 1987, there was an attempt at uniformity through Executive Order No. 12,591, which states:

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The head of each Executive department and agency shall, within overall funding allocations and to the extent permitted by law:

* * *

(6) co-operate under policy guidance provided by the Office of Federal Procurement Policy, with the heads of other affected departments and agencies in the development of a uniform policy permitting Federal contractors to retain rights to software, engineering drawings, and other technical data generated by Federal grants and contracts, in exchange for royalty-free use by or on behalf the government.

This is the principle that is applied in the Executive Branch generally with respect to patents, and it holds true for rights in technical data and computer software under Government contracts. That is, under both the FAR and the DFARS the contractor retains its ownership rights in data and software that are developed during the performance of the contract, and the Government obtains license rights--rights of use--in the technical data and computer software.⁷⁹ Thus, even if the item, component, process, or software was developed entirely at Government expense and the Government accordingly obtains unlimited license rights,⁸⁰ the contractor will still retain "ownership" of the IP rights. Thus,

⁷⁶ DFARS 227.7103-9.

⁷⁷ *Id.* 227.7203-991.

⁷⁸ 52 Fed. Reg. 13,414 (Apr. 10, 1987), amended by Exec. Order No. 12,618, 52 Fed. Reg. 48,661 (Dec. 24, 1987).

⁷⁹ *See, e.g.*, FAR 52.227-14, paras. (b)(2), (d); DFARS 227.7103-4, 227.7203-4

⁸⁰ *See* DFARS 252.227-7013, para. (b)(1), 252.227-14, para. (b)(1).

Government "unlimited" rights, although extensive, are not "exclusive" rights.

The Government's ability to exercise its unlimited (or limited or restricted) rights would be constrained if the Government did not commensurately obtain some form of a copyright license since it would be unable to reproduce copies of the work (or display or distribute it). Accordingly, the basic data rights provisions of the FAR and DFARS provide a copyright license to the Government.⁸¹ The scope and nature of this license vary significantly between the military and the civilian agencies.

The copyright concept of the current DFARS is straightforward and essentially the same as its predecessors. The DoD obtains a copyright license coextensive with whatever other "data" rights it obtains. This is specifically addressed with respect to software where the DFARS⁸² requires a contractor to grant, or obtain for the Government, license rights which permit the Government to reproduce the software or documentation, distribute copies, perform or display the software or documentation and, through the right to modify data, prepare derivative works.

The extent to which the Government, and others acting on its behalf, may exercise these rights varies for each of the five standard data rights licenses obtained under the clause: unlimited rights, Government purpose rights, limited rights (in data), restricted rights (in software), and specifically negotiated license rights.⁸³ In other words, if the Government gets restricted rights in software, it gets a copyright license to reproduce, distribute, perform, display, and prepare derivative works of the software as needed to implement those restricted rights. For negotiated rights, Contracting Officers are precluded from negotiating copyright licenses that provide less than restricted rights in software or limited rights in technical data.⁸⁴ The broadest application of this license right at the DoD is with respect to unlimited rights. "Unlimited rights" are defined under the Department of Defense clauses as the following rights:⁸⁵

⁸¹ FAR 27.404(f)(iv); DFARS 227.7103-4, 227.7203-4.

⁸² DFARS 227.7203-9 "Copyright:" (a) Copyright license. (1) The clause at Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation

⁸³ *Id.* 227.7103-5, 227.7203-5.

⁸⁴ *Id.* 227.7103-9, 227.7203-9.

⁸⁵ *See, e.g.*, DFARS 252.227-7013, para. (a)(15), 252.227-7014, para. (a)(15).

to use, modify, reproduce, perform, display, release, or disclose technical data (or computer software or computer software documentation) in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so. The Government's copyright license is unbounded under this clause and, as a practical matter, is coextensive with the author's rights but for title.⁸⁶

The breadth of the Government's copyright license also raises interesting, and so far unlitigated, questions as to what rights a third party may have when the Government obtains unlimited rights data or software. Without doubt, under this license the government may "give" the data to any third party for any reason;⁸⁷ this right can be likened to the right to "sublicense" the data.⁸⁸ It also seems clear that the party to whom the data is given can use the data to perform for the government. It is not certain, however, whether the third party could use the material (including data in which the Government has an unlimited rights license) for any other purpose, such as a commercial nongovernmental use. In other words, although the Government has a broad license, this wording is probably not expressly an unlimited sublicense to third parties to reproduce or distribute the data.

That there might be some preclusion on a third party is supported inferentially by the statute⁸⁹ that provides the basis for the unlimited rights definition, that states that, for technical data, the Government shall have the unlimited rights to do the following:⁹⁰ (i) use technical data pertaining to the item or process; or (ii) release or disclose the technical data to persons outside the Government or permit the use of the technical data by such persons. "Use" in this context need not encompass reproduction or distribution, display, or performance.

A related question is how a third party would know that the contractor has a copyright interest in data or software developed under a Government contract. The DFARS clauses clearly permit

⁸⁶ See generally Nash, *Protecting Unlimited Rights Data: The Inadequate Clauses*, 18 Nash & Cibinic Rep. ¶ 21 (May 2004).

⁸⁷ DFARS 252.227-7013, para. (a)(15), 252.227-7014, para. (a)(15).

⁸⁸ SIMCHAK & VOGEL, *LICENSING SOFTWARE AND TECHNOLOGY TO THE U.S. GOVERNMENT* (2000).

⁸⁹ 10 U.S.C.A. § 2320.

⁹⁰ *Id.* § 2320(a)(2)(A)

marking unlimited rights data or software with a copyright notice, stating that the contractor may affix "a notice of copyright as prescribed under 17 U.S.C. 401 or 402."⁹¹ Therefore, DOD contractors should be marking their unlimited rights data and software with a copyright legend. This puts third parties on notice of the contractor's rights.⁹² Although marking will not preclude others from receiving the copyrighted information from the Government or using it, should the Government direct them to do so, marking does point out that the third party may not be able to reproduce the data or display or distribute the data without the contractor's permission.

Under the DFARS there is no basic data rights clause for commercial computer software. Instead, contractors and subcontractors supply commercial software in accordance with their "standard" software license agreements.⁹³ Again, these should (and typically would) include copyright prohibitions. Indeed, there is no contemplation in the DoD regulations or guidance that Contracting Officers are to deviate from standard software license agreements with respect to copyright. Moreover, in almost no circumstances would it be necessary for the Government to obtain unlimited rights in commercial software or, for that matter, anything broader than Government purpose rights. Typically, the Government's right to use commercial software for the application of the contract is sufficient.

The principles under the DFARS with respect to third-party copyrighted technical data are similar to those under the FAR. The DFARS "Rights in Technical Data--Noncommercial Items" clause provides:⁹⁴

The Contractor shall not, without the written approval of the Contracting Officer, incorporate any copyrighted data in the technical data to be delivered under this contract unless the Contractor is the copyright owner or has obtained for the Government the license rights necessary to perfect a license or licenses in the deliverable data of the appropriate scope set forth in paragraph (b) [standard license rights] of this clause, and has affixed a statement of the license or licenses obtained on behalf of the Government

⁹¹ DFARS 252.227-7013, para. (f), 252.227-7014, para. (f).

⁹² *See Innovative Concepts, Inc. v. Symetrics Indus., Inc.*, Civil Action No. 02-1040-A, (E.D. Va. 2003) (contractor's rights in software are only enforceable if the contractor takes proper steps to put third parties on notice of copyrights by attaching the appropriate markings or legends).

⁹³ FAR 52.227-14, para. (c)(2).

⁹⁴ DFARS 252.227-7013(d)

and other persons to the data transmittal document.

In general, for commercial companies, the economy benefit of having DoD pay for the cost of developing new software typically outweighs the disadvantages of contracting with the government. Many companies' experience has been that it is better to "accept the King's shilling" at the cost of providing a royalty-free license to some software than to deal with "vulture capitalists." However, commercial companies do continue to distrust government contracts because many of these companies remain unaware of how to use FAR part 12.⁹⁵

Highlights of technical data requirements under the FAR are shown in Figure 3.

FAR COPYRIGHT LICENSE

The Government's copyright license, as well as a contractor's ability to mark its data and software with a copyright notice, is very different under the FAR than under the DFARS. The FAR's definition of "unlimited rights" draws upon the language of the Copyright Act and also appears to provide no constraints on the Government's copyright license:⁹⁶

DOD Framework

Type of Data Rights	Definition	Applies to
Unlimited Rights 227.7103-5(a)	Right to use and disclose the data publicly, in any manner and for any purpose and to permit others to do so.	Data created exclusively with government funds and certain types of other data delivered to the government regardless of funding.
Government Purpose Rights 227.7103-5(b)	Right to use or disclose within the government without restriction or disclose to third parties for government purposes only. Third parties cannot use the data for commercial purposes.	Data developed with a mix of government and private funds.

⁹⁵ Jerome S. Gabig, GOVERNMENT IP RIGHTS: PERSPECTIVE OF A "HIGH TECH" START-UP, <http://www.abanet.org/contract/federal/randcomm/0402pres/gabig.ppt> (last visited Dec. 12, 2006)

⁹⁶ FAR 52.227-14 (a).

Limited Rights 227.7103-5(c)	Right to use or disclose data internally. No disclosure to third parties without written permission except under limited conditions (e.g., emergency repair)	Data pertaining to items components, or processes developed at private expense.
Specifically negotiated license rights 227.7103-5(d)	Right to use data for agreed-to governmental purposes. Other rights may be tailored as needed and negotiated.	Data developed with a mix of government and private funds.
Civilian Agency Framework		
Unlimited Rights 52.227-14(b)	Right to use and disclose the data publicly, in any manner and for any purpose and to permit others to do so.	Data first produced or delivered in the performance of the contract; form, fit and function data; and data needed for repairs or maintenance.
Negotiated Rights ^a	Right to use data for agreed-to governmental purposes. Other rights may be tailored as needed and negotiated.	Data developed with a mix of government and private funds.
Limited Rights 52.227-14(f)	Right to use or disclose internally. Cannot disclose outside the government without permission except for certain agreed-on purposes.	Data (other than computer software) developed at private expense that embody trade secrets, or are commercial or financial and confidential or privileged.

- a. The term “negotiated rights” does not actually appear in the Federal Acquisition Regulation. However, the regulation allows for the tailoring of rights for cosponsored research and development activities.

Figure 2: Technical data requirements under the FAR.

"Unlimited rights," as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

The "Rights in Data—General - Allocations of Rights" ⁹⁷ clause modifies this unlimited rights definition, however, to: (1) except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights" ⁹⁸ In turn, paragraph (c) of the clause, "Copyright," changes the Government's unlimited copyright license into what is essentially a “government purpose rights” license when a contractor seeks the written permission of the Contracting Officer (CO) to

⁹⁷ *Id.* 52.227-14 (b).

⁹⁸ *Id.* 52.227-14(b)(1).

establish a claim to copyright.⁹⁹ In other words, when that permission is granted, the Government does not obtain an unlimited copyright license. There are several key issues that contractors requesting such permission should consider.

First, with respect to data first produced in the performance of a FAR contract, a contractor need not seek permission of the CO to assert a copyright, but only if the contractor is claiming copyright in scientific and technical articles "based on or containing data first produced in the performance of this contract and published in academic, technical or professional journals, symposia proceedings or similar works."¹⁰⁰ Nor is permission required in any circumstance when "Alternate IV" of the clause is used.¹⁰¹

Second, unlike under the DFARS where it is granted automatically, the contractor must get the express written permission of the CO to establish (really to "assert") a claim to copyright in all other data first produced in the performance of the contract.¹⁰² The FAR states that permission to establish claim to copyright will be granted in most typical circumstances and describes the form of copyright notice the contractor must use.¹⁰³ Although arguably this process of seeking permission is contrary to the copyright statute, which automatically vests the copyright in the author, it is consistent with the legislative history indicating that agencies can restrict a contractor's copyright interest. Third, if the contractor requests the permission of the CO and it is granted, then the Government obtains what is essentially a "government purpose rights" copyright license. Paragraph (c)(1) of the FAR "Rights in Data--General" clause¹⁰⁴ states in pertinent part:

When claim to copyright is made, the Contractor shall affix the applicable copyright notices of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including contract number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For data other than computer software the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive,

⁹⁹ *Id.* 52.227-14 (c).

¹⁰⁰ *Id.* 52.227-14 (c)(1).

¹⁰¹ *Id.* 27.404(f)(1)(iii), 27.409(e), 52.227-14 (c)(1) (Alternate IV).

¹⁰² *Id.* 52.227-14 (c)(1).

¹⁰³ *Id.* 27.404(f)(1)(ii), (v).

¹⁰⁴ *Id.* 52.227-14 (c)(1)

irrevocable worldwide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Contractor grants to the Government and others acting in its behalf, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government.¹⁰⁵

Thus, the copyright license is restricted to activities "by or on behalf of the Government." It would be unusual for activities "by or on behalf of the Government" to encompass the authority to provide copyrighted data or software for commercial purposes. This is, therefore, effectively a Government purpose rights license. Note also that the clause provides fewer rights with respect to software by eliminating the Government's right to "distribute" copies of the software to the public.

It is important to note that when contractors work with non-defense agencies (NASA, etc.) the copyright license is restricted to activities "by or on behalf of the Government." This is not the case with contractors working under the DFARS. Additionally, the FAR requires that any contractor claiming copyright ownership to material first produced under a FAR contract affix the copyright notice and acknowledgement of government sponsorship (including the contract number) on all copies delivered to the Government, on all published copies, and on all copies deposited with the U.S. Copyright Office¹⁰⁶ although the Copyright Law has no copyright notice requirement for works created on or after March 1, 1989. If these notices are not affixed, the Government has unlimited rights.

An example of a copyright statement, which includes a government license, for use with works created under contracts with civilian agencies and NASA is:¹⁰⁷

COPYRIGHT STATUS: This work, authored by _____ employees, was funded in whole or in part by _____ under U.S. Government contract _____, and is, therefore, subject to the following license: The Government is granted for itself and others acting on its behalf a paid-up, nonexclusive, irrevocable worldwide license in this work to reproduce, prepare derivative

¹⁰⁵ *Id.* 52.227-14 (c)(1).

¹⁰⁶ *Id.* 27.404(f)(1)(v)106.

¹⁰⁷ *See* DFARS 252.227-7013(f)and 252.227-7014(f)107.

works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. All other rights are reserved by the copyright owner

In most cases a contractor may use works it produced under a government contract; however, depending on the data rights clause in the contract, some restrictions may apply. Under the FAR general data rights clause, the contractor must obtain authorization from the Contracting Officer to assert claim to copyright in a work created under the contract or no copyright may be asserted¹⁰⁸. However, in either situation, the contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the contractor in the performance of the contract, except to the extent such data may be subject to the federal export control or national security laws or regulations, may include restrictive markings or notices, or unless otherwise set forth in the contract.¹⁰⁹ Agency FAR supplements may include more restrictive terms including the right to require the contractor to assign the copyright to the Government.

DFARS AND FAR “SPECIAL WORKS”

The term "special works" connotes a creative work that, generally, is authored or commissioned for the Government, such as a public service announcement, a painting, or a compilation of information for investigative purposes that is to be maintained in confidence. The FAR includes a comprehensive list of typical special works¹¹⁰ including “the development of computer software programs, where the program--(A) May give a commercial advantage; or (B) Is agency mission sensitive, and release could prejudice agency mission, programs, or follow-on acquisitions.”

The FAR has a clause addressing data rights in special works at FAR 52.227- 17. The DFARS counterpart is at DFARS 252.227-7020. Both of these clauses give the Government broad copyright

¹⁰⁸ FAR 52.227-14.

¹⁰⁹ *Id.* 27.404(g) and FAR 52.227-14(d)).

¹¹⁰ *Id.* 27.405(a)(1).

licenses. The DFARS clause requires assigning the copyright to the Government (and requires indemnification by the contractor), with the contractor retaining "use and disclosure rights" in the work unless the Government negotiates for restrictions.¹¹¹

Under the FAR special works data rights clause¹¹², the contractor shall not use any work first produced in the performance of the contract for purposes other than the performance of the contract, nor shall the contractor release, reproduce, distribute, or publish any such work, nor authorize others to do so, without written permission of the Contracting Officer. The FAR "Special Works" clause continues the principle of requiring the contractor to seek permission of the Government to assert claim to copyright and continues the Government's "unlimited" rights "by or on behalf of the Government" when permission is granted.¹¹³ But, unlike under the basic FAR "Rights in Data--General" clause, the Government can require the contractor to assign its copyright to the Government or a third party.¹¹⁴ The FAR "Special Works" clause also precludes the contractor from using its data for anything other than the purposes of the contract or to give it to third parties:¹¹⁵

Except as otherwise specifically provided for in this contract, the Contractor shall not use for purposes other than the performance of this contract, nor shall the Contractor release, reproduce, distribute, or publish any data first produced in the performance of this contract, nor authorize others to do so, without written permission of the Contracting Officer.

-, given the reach of these clauses, they are to be used only in limited circumstances. Under the FAR, they are to be used (1) in contracts that are primarily for producing or compiling data for "the Government's own use"; (2) when "there is a specific need to limit distribution and use of the data"; or (3) where the Government requires indemnification for liabilities that might arise out of using the data.¹¹⁶ From the contractor's perspective, if none of these circumstances is present, use of the clause

¹¹¹ DFARS 227.7106(b), 227.7205(b), 252.227-7020 (c), (e)

¹¹² *Id.* 52.227-17.

¹¹³ FAR 52.227-17 (c).

¹¹⁴ *Id.* 52.227-17 (c)(1)(ii).

¹¹⁵ *Id.* 52.227-17 (d).

¹¹⁶ *Id.* 27.405(a)(1).

is inappropriate and should be resisted. From the taxpayer who funded the work's perspective, contracts should contain this language, if the taxpayer believes the IP should be deposited in the public domain.

The DFARS clause similarly is to be used when the Government "has a specific need to control the distribution" of the works or the Government has "a specific need to obtain indemnity" from liabilities arising out of the work.¹¹⁷ Absent those circumstances, the basic DoD data rights clauses are applicable. DFARS clause 252.227-7020 automatically directs the contractor to assign the copyright to the Government.

Under the FAR special works data rights clause,¹¹⁸ in addition to requiring the Contracting Officer's written permission before a contractor may assert copyright ownership in material first produced under the contract, the Contracting Officer may instead direct the contractor to assign the copyright to the Government. Additionally, in accordance with FAR Section 27.404(g)(3), agencies may, to the extent provided in their FAR supplements, place limitations or restrictions on the contractor's right to use, release to others, reproduce, distribute, or publish any data first produced in the performance of the contract, including a requirement to assign copyright to the Government. Thus, Agency FAR supplements (e.g., the NASA FAR Supplement at 1852.227-14) may also direct contractors in this way.

DEAR COPYRIGHT LICENSE

Although familiarity with the policies and procedures set forth in the FAR and DFARS will guide contractors through the intricacies of rights in data and software in most Government procurements, contractors must still be sure to refer to the various agency FAR supplements for possible additional or alternate rules that may apply to specific procurements. Because of peculiar agency mission requirements, some agencies in addition to DoD have promulgated rights in technical

¹¹⁷ DFARS 227.7106(a), 227.7205(a).

¹¹⁸ *Id.* 52.227-17.

data rules that supplement or replace the regulatory text and contract clauses found in the FAR. The two most notable examples of this are found in the Department of Energy FAR Supplement¹¹⁹ and the NASA FAR Supplement.¹²⁰ Although these regulations are not wholly inconsistent with the rules set forth in the FAR, certain of the "standard" FAR approaches may be altered in certain procurements.

DEAR 927.404 "Rights in Technical Data in Subcontracts" paragraph (g)(4) states that contractors are required by paragraph (d)(3) of the clause at FAR 52.227-14, as modified pursuant to 48 CFR 927.409(a)(1), to acquire permission from DOE to assert copyright in any computer software first produced in the performance of the contract. This requirement reflects DOE's established software distribution program, recognized at FAR 27.404(g)(2), and the Department's statutory dissemination obligations. When a contractor requests permission to assert copyright in accordance with paragraph (d)(3) of the Rights in Data--General clause as prescribed for use at 48 CFR 927.409(a)(1), government patent counsel shall predicate its decision on the considerations reflected in paragraph (e) of the clause at 970.5204-82 Rights in Data--Technology Transfer.

The DFARS¹²¹ recognizes the contractor's copyright, while it directs the contractor to assign the copyright to the Government.¹²² However, it notes that a contractor "retains use and disclosure rights" even after such an assignment.¹²³ Therefore, the Government must negotiate a special license if it wishes to restrict a contractor's use of works it produced under contract. There may be other restrictions to the contractor's use, such as export control, national security, etc.

If a special clause is inserted into a contract¹²⁴ the contractor must assign the copyright to the Government.

IS A CHANGE IN THE STATUS QUO DESIRABLE?

¹¹⁹ DEAR subpt. 927.4, 970.2705, 970.2706.

¹²⁰ NFS subpt. 18-27.4.

¹²¹ DFARS 252.227-7013.

¹²² *Id.* 252.227-7020.

¹²³ *Id.* 227.7106(b).

¹²⁴ *Id.* 252.227-7020.

The Constitution originally established the right to copyright creative works. The Congress enacted the 1909 and subsequently the 1976 Copyright Acts that legislated that Government works created by Federal workers could not be copyrighted. However, since an Executive Order has granted Federal contractors the right to retain rights to software, engineering drawings, and other technical data generated by Federal grants and contracts in exchange for royalty-free use by or on behalf of the government, not all products of government sponsored research are placed in the public domain. Contractors' rights vary according to the pertinent regulation; for example, the Government has more rights – including the right to publicly distribute software – under defense contracts than under civilian contracts.

The acquisition regulations that govern contractor funding are complex, confusing, and intimidating to use. Are they fulfilling the goal of promoting technology commercialization at the greatest efficiency and lowest cost to the taxpayer? Is the taxpayer losing value, or is the taxpayer benefiting by a better economy, more tax revenues, and a better standard of living? The President's Council of Advisors on Science and Technology (PCAST) recently found that existing technology-transfer legislation works and should not be altered; individual agencies and government laboratories need to provide regular transaction "process reviews" to reduce the complexity of, and time required to complete, technology transfer transactions; and the Government should centralize information on technology transfer into a single, accessible location.¹²⁵

If nothing else, much work needs to be done to improve the process of government-sponsored funding of privately-created intellectual property. PCAST also found that the transfer of government-funded R&D involving technology to the private sector has grown significantly in the last two decades and today represents an increasingly important part of the overall industrial commercialization of

¹²⁵ <http://www.ostp.gov/PCAST/PCASTTechTransferReport.pdf> (last visited Dec. 15, 2006)

technology, as shown in Figure 3. Equally important, the transfer of publicly funded technology is a critical mechanism to optimizing the return for this substantial taxpayer investment, particularly where other benefits are not measurable at all or are long-term and therefore not measurable for years or even decades.

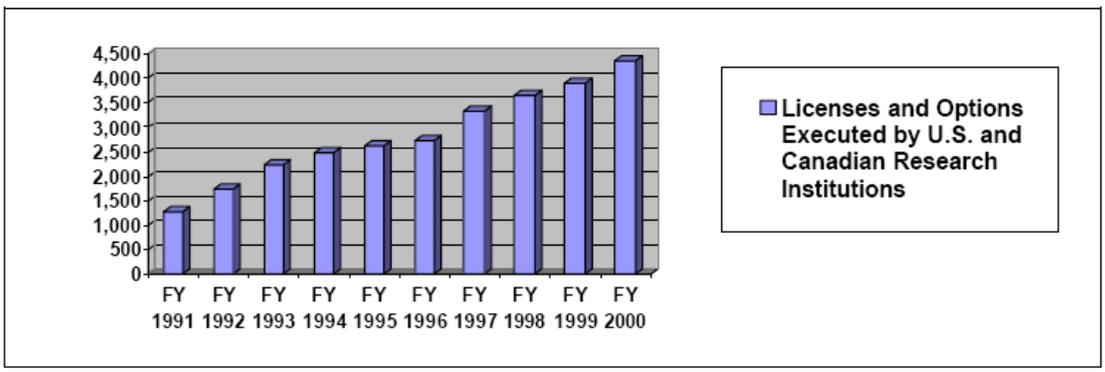


Figure 3: Licenses and Options executed by US and Canadian Research Institutions

Statutes, regulations, congressional oversight, public pressure, and court decisions may all play a part if a change in the federally-funded-private-contractor-developed-software-copyright status quo is determined to be necessary or desirable. Some possible paths forward include (1) simplifying each and every federal acquisition regulation; (2) revising all FAR “special works” clauses to include all privately-developed software in every agency’s acquisition regulation; (3) affixing copyright notices to software to notify potential licensees that the software is potentially available from the Federal Government for no cost, and then using GOCC.gov to house a software database of all such labeled software; (4) implementing legislative efforts that change government policies to develop public access to software; (5) developing a compulsory licensing system; (6) developing a trust system for the benefit of the American taxpayer; (7) designating all government-funded software as open source; and (8) implementing no change; all are discussed below.

POSSIBLE PATHS FORWARD

The FAR, DFARS, and other acquisition regulations can be revised, simplified, and standardized, which would result in greater efficiency and cost-savings for all parties concerned.

At this time, the Government has the policy, regarding computer software as well as technical data, that intellectual property rights are distinct from ownership of the software or technical data. Because copyright is addressed in the contract clauses dealing with rights to technical data and computer software, it is dealt with differently in the civilian FAR and the defense DFARS. The DFARS “Special Works” clauses¹²⁶ can be revised to cover all (not just some) software developed by private contractors and every agency FAR (NASA, DOE, etc.) can be revised to include the same type of clause.

Significantly, no revisions or additions to the regulations are needed if a policy change is desired: simply impose all requirements in the “Special Works” clause of the DFARS to all software developed with Federal Government funding. As mentioned above, the clause applies to works first created, generated, or produced and required to be delivered under a government/commercial entity contract, such as a computer data base, computer program, computer software, or computer software documentation. The Government shall have unlimited rights in works first produced, created, or generated and required to be delivered under a contract regulated by DFARS. “Unlimited rights” means the rights to use, modify, reproduce, perform, display, release, or disclose a work in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so. When a work is first produced, created, or generated under such a contract, and such work is required to be delivered under the contract, the *contractor shall assign copyright in those works to the Government.*

¹²⁶ DFARS 252.227-7020 Rights in Special Works

The contractor, unless directed to the contrary by the Contracting Officer, shall place the following notice on such works: “© (Year date of delivery) United States Government, as represented by the Secretary of (department). All rights reserved.” Furthermore, the Contractor grants to the Government a royalty-free, world-wide, nonexclusive, irrevocable license to reproduce, prepare derivative works from, distribute, perform, or display, and to have or authorize others to do so, the Contractor's copyrighted works not first produced, created, or generated under this contract that have been incorporated into the works deliverable under this contract.

Thus it is clear that under the “Special Works” clause, the Government is assigned a copyright in the computer software and thus can provide the software to the public, perhaps in the form of an open license. However, the concern that contractors will not choose to work with the government unless they retain a copyright in their works is valid here.

Another path forward involves Congress passing laws that require the contractor that develops software to affix any applicable copyright notice, like that required for “visually perceptible copies”¹²⁷ and “phonorecords of sound recordings.”¹²⁸ The contractor could be required to acknowledge Government sponsorship by using legal disclaimers and labeling of federally-funded software developed by commercial firms. The DFARS clauses clearly permit marking unlimited rights data or software with a copyright notice, stating that the contractor may affix “a notice of copyright as prescribed under 17 U.S.C. 401 or 402.”¹²⁹ Therefore, DOD contractors should be marking their unlimited rights data and software with a copyright legend. This puts third parties on notice of the contractor's rights.¹³⁰ If all parties, including competing commercial firms and the public are aware that such copyrighted works that are licensed to the government are available from the government to the public free of charge, then no misrepresentations will occur.

¹²⁷ 17 U.S.C. § 401.

¹²⁸ *Id.* § 402.

¹²⁹ DFARS 252.227-7013, para. (f), 252.227-7014, para. (f)

¹³⁰ See *Innovative Concepts, Inc. v. Symetrics Indus., Inc.*, Civil Action No. 02-1040-A, (E.D. Va. 2003) (contractor's rights in software are only enforceable if the contractor takes proper steps to put third parties on notice of copyrights by attaching the appropriate markings or legends).

However, in order for this kind of marking scheme to work, the federal government would have to create some kind of online database of government-owned or government-licensed intellectual property, including software, which would be available free to commercial firms and the public. The software could even be designated free open source software in addition to its being public domain software. The Federal Freedom of Information Act (FOIA)¹³¹ already lays the foundation for this. The FOIA is important in at least two ways for institutions, public or private, that receive research funding from federal agencies. First, if the grantee institution provides data developed within a federally funded project to the granting agency (or if the agency should exercise its right to obtain the data), then the data becomes an agency record subject to release under FOIA unless one of the FOIA exemptions applies. Second, recent amendments to OMB Circular A-110,¹³² which governs federal grants, make federally funded research data explicitly subject to FOIA under some circumstances. Until this amendment, FOIA did not reach or apply to federally funded data that were in the possession and control of private parties.¹³³ The Shelby Amendment, as implemented through OMB Circular A-110, overturned this principle. Under the recent revisions to A-110, FOIA reaches a grantee's "research data," a term defined in A-110 for purposes of the FOIA-related section¹³⁴ if it relates to published research results that were used by a federal agency to develop an agency action that has the "force and effect of law." FOIA should be extended to include federally funded data and software, as well as research data.

FOIA supports public access to government information and should limit the ability of federal agencies to restrict or regulate public use of agency data or federally-sponsored works in which the government holds a license.¹³⁵ Another model is the Government Open Code Collaborative (GOCC)¹³⁶, comprised of a group of state and local governments that has banded together to collect and

¹³¹ 5 U.S.C. §552

¹³² www.whitehouse.gov/omb/circulars/a110/a110.html (last visited Dec. 6, 2006).

¹³³ E.g., *Forsham v. Harris*, 445 U.S. 169, 100 S. Ct. 977 (1980).

¹³⁴ § 36(d)(2)(i)

¹³⁵ 5 U.S.C. §552 (1992)

¹³⁶ www.gocc.gov

distribute freely the costly software that normally runs taxpayers \$100 billion annually. This organization states that its members work together voluntarily to encourage "the sharing, at no cost, of computer code developed for and by government entities where the redistribution of this code is allowed." In addition to state and local governments, the organization also encourages collaboration between public sector entities and non-profit academic institutions. With Web facilities hosted by the University of Rhode Island, GOCC.gov has a repository dedicated to hosting open-source software for download by any state or local government, or private citizen. If all contractor-developed software using "Special Works"-type clauses was made available on GOCC.gov, citizens would immediately have access to the software developed with their tax dollars. Another thought would be to provide the software as "open access," thus ensuring that the software would be free and continuously improved at no cost to the taxpayer.

However, there are three basic reasons given by those in not in favor of permitting government software copyrights. First, private industry will not commercialize U.S. government computer programs if they cannot get exclusive rights and foreign governments, enterprises, and individuals benefit from placing U.S. government works into the public domain.

A policy consideration is encouraging the continued expansion of the openness-in-government culture that was sparked by the passage of the FOIA.¹³⁷ In the years since passage of the FOIA in 1966, government workers have become more accustomed to disclosing information, and a formal process for disclosure has developed and taken root. More recently, President Clinton was a strong advocate of using the developing information superhighway for a wide variety of purposes, including increasing the availability of government information.¹³⁸ This disclosure can be extended to the disclosure of government funded software.

As agencies see that the public release of information is encouraged by the Executive branch,

¹³⁷ *Id.*

¹³⁸ See, e.g., Exec. Order No. 12,864, 58 Fed. Reg. 48,773 (1993) (establishing an Advisory Council on the National Information Infrastructure).

fewer barriers are likely to be erected. Rewards in the form of increased appropriations, broader public support, and new constituencies for agency activities would also encourage sharing of information and intellectual property and discourage restrictive proprietary actions. Regulatory policies, such as OMB Circular A-130, also direct agencies to share information resources with the public.¹³⁹ While there are holes in these statutes and policies, their purpose and support for unrestricted government information is apparent.

The negative of such government-mandated databases is increased bureaucracy and layers of government-controlled and government-administered management, resulting in increased government intrusions into citizens' lives.

Legislative attempts to redefine the rules that apply to federally-funded IP are yet another way to address the question of how to deal with federally-funded software. The following history of the Public Access to Science Act is demonstrative.

On June 26, 2003 during the 108th Congress, Representative Martin Olav Sabo (Democratic-Farmer-Labor Party -MN) introduced H.R. 2613, the Public Access to Science Act. The legislation proposed to exclude scientific research substantially funded by the Federal Government from copyright protection. The bill was referred to the House Committee on the Judiciary, where no action was taken. The bill aimed to amend existing US copyright law so that research that had been "substantially funded" by the US federal government can also not be copyrighted, ensuring its free availability to the public. The Act specifically stated that:

IN GENERAL- Copyright protection under this title is not available for *any* work produced pursuant to scientific research substantially funded by the Federal Government to the extent provided in the funding agreement entered into by the relevant Federal agency pursuant to paragraph (2).

(2) PROVISION IN FUNDING AGREEMENTS- *Any* Federal department or agency that enters into a funding agreement with *any* person for the performance of scientific research substantially funded by the Federal Government shall include in the agreement a provision that states that copyright protection under

¹³⁹ O.M.B. Circular A-130 (Dec. 12, 1985).

this title is not available for *any* work produced pursuant to such research under the agreement.

4) DEFINITION- In this subsection, the term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any Federal agency and any person for the performance of scientific research funded by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of such research'

The latest major action taken on the bill occurred on September 4, 2003 where it was referred to House Subcommittee on Courts, the Internet, and Intellectual Property.¹⁴⁰

In addition, the Federal Research Public Access Act of 2006 was introduced in Senate during the 109th Congress, 2d Session, as S. 2695, on May 6, 2006, to provide for Federal agencies to develop public access policies relating to research conducted by employees of that agency or from funds administered by that agency. Senator John Cornyn (R-TX) (for himself and Senator Joe Lieberman, D-CT) introduced the bill, co-sponsored by Senator Jeff Sessions, R-AL, which was read twice and referred to the Committee on Homeland Security and Governmental Affairs.¹⁴¹ The last major action occurred on May 6, 2006, where the bill was referred to the Subcommittee on Federal Financial Management, Government Information, and International Security.¹⁴²

The bill provided for Federal agencies to develop public access policies relating to research conducted by employees of that agency or from funds administered by that agency; it does not cover software. The bill stated that each Federal research public access policy should provide for submission to the Federal agency of an electronic version of an author's final manuscript of original research papers that had been accepted for publication in peer-reviewed journals and that had resulted from research supported, in whole or in part, from funding by the Federal Government.

Both of these bills have languished and died in committee. However, the November 7, 2006 elections have had the effect of changing chairmanships and memberships of all Congressional committees and subcommittee. The time may be right for a reintroduction of the PASA or the

¹⁴⁰ <http://thomas.loc.gov/cgi-bin/bdquery/z?d108:HR02613:@@X> (last visited May 22, 2007)

¹⁴¹ <http://thomas.loc.gov/cgi-bin/bdquery/z?d109:s.02695>: (last visited May 23, 2007)

¹⁴² <http://thomas.loc.gov/cgi-bin/bdquery/z?d109:SN02695:@@X> (last visited May 23, 2007)

introduction of similar legislation. Although Representative Sabo declined to run for re-election to the U.S. House in 2006, other elected legislators have been alerted to the public domain / private contractor issue. It will take public pressure for legislators to act again on this subject.

One piece of legislation that could serve as a model is the CURES Act. The U.S. CURES Act would mandate open access. Senator Joe Lieberman (D-CT) has introduced a bill into the U.S. Senate that would mandate OA to the bulk of federally-funded medical research. Called the American Center for CURES Act of 2005 (S.2104), it's co-sponsored by Thad Cochran (R-MS), Kay Bailey Hutchison (R-TX), and Thomas Carper (D-DE). The bipartisan bill was announced on December 7, 2005 and formally introduced on December 14, 2005. The CURES Act would create a new agency within the NIH, the American Center for Cures, whose primary mission would be to translate fundamental research into therapies.

However, a valid concern is that commercial contractors will work with the government, even when fully funded, if they do not retain a property interest in the work created by the sweat of their brow. This concern leads to yet another way to address the software copyright issue: to create an ASCAP-type framework to disseminate copyright that would allow the government to encourage technology innovation by financially rewarding contractors, yet also retain the software in the public domain, in order to create value for taxpayers.

This system allows creating a “collective administration” licensing system, similar to that used by ASCAP, (American Society of Composers, Authors and Publishers) a performing rights organization (PRO) which licenses and collects royalties for performance of its members’ copyrighted works. ASCAP protects its members' musical copyright, ensuring that their copyrighted music which is broadcast, or otherwise publicly performed, whether live or recorded, is properly licensed by the music users via an ASCAP license to compensate the creators of that music. In the United States, ASCAP competes with two other performing rights organizations: Broadcast Music Incorporated (or BMI) and Society of European Stage Authors & Composers (SESAC).

ASCAP monitors performances of the music of their respective members, and protects the rights of its members by licensing and distributing royalties for the non-dramatic public performances of their copyrighted works. ASCAP's licensees encompass all who want to perform copyrighted music publicly. ASCAP makes giving and obtaining permission to perform music simple for both creators and users of music. Through agreements with affiliated international societies, ASCAP also represents hundreds of thousands of music creators worldwide. ASCAP is created and controlled by composers, songwriters and music publishers, with a Board of Directors elected by and from the membership.

Collective administration of copyrights is not limited to performing rights and is often advocated as a solution to many copyright licensing and enforcement problems. In Canada, for example, the government has viewed collective administration to be a desirable practice for a variety of copyrights¹⁴³ and a series of amendments to Canada's Copyright Act has led to the formation of a world record 36 collective organizations representing a variety of copyright holders and administering a variety of rights.¹⁴⁴

The general idea behind the proliferation of collective administration of copyrights is that, because individual administration is often impracticable, or at least uneconomical, collective administration is the most efficient method for licensing, monitoring and enforcing copyrights and, therefore, when this is the case, society is better served by a single seller, here, the Federal Government. Although not generally articulated in these words, the argument behind collective administration of copyrights in general is that the market for the licensing of such rights is a “natural monopoly.” Examples of claimed natural monopolies include telecommunications, water services, electricity, and mail delivery. Consequently, regulation,¹⁴⁵ rather than an attempt to foster competition,

¹⁴³ See e.g., Government of Canada, Supporting Culture and Innovation: Report on the Provisions and Operation of the Copyright Act 30-31 (2002), available at <http://strategis.ic.gc.ca/epic/internet/incrp-prda.nsf/vwGeneratedInterE/tp00863e.html>.

¹⁴⁴ See Daniel J. Gervais & Alana Maurushat, *Fragmented Copyright, Fragmented Management: Proposals to Defrag Copyright Management*, 2 CAN. J. L. & TECHH. 15 (2003).

¹⁴⁵ Regulation in this connection includes not only regulation by a specific regulatory body but also intervention in the operations of PROs under antitrust law, as is the case in the United States and some other countries.

is the optimal response.

The Federal Government could set up an entity modeled on ASCAP that would monitor use of the software developed by respective contractors, thus protecting the rights of its contractor members by licensing and distributing royalties for the use of their copyrighted works. The taxpayer could get a fair share of the revenues generated, perhaps in the form of a tax rebate. A share of the licensing fees generated could also be used to fund specific governmental agencies to be used to develop future software.

Creating a compulsory license in IP rights systems is a traditional solution around the world. Legislation granting IP rights is conditioned, under this approach, with a statutory mandate that the rights must be licensed to all comers willing to pay the pre-set price.¹⁴⁶ Rates charged can be frequently adjusted by such an entity. Statutes, on the other hand, are difficult to change. Because interested parties can often spend enough to veto a change in legislation,¹⁴⁷ compulsory licenses in the IP rights field are subject to "legislative lock-in." Although in practice, virtually all compulsory licenses in the IP rights field have been enacted by statute, there is no reason in theory why they could not be administered judicially. Compulsory copyright license is an exception to copyright law that is usually philosophically justified as an attempt by the government to correct a market failure. As an exception to copyright, another party can exercise one or more of the copyright's exclusive rights without having to obtain the copyright holder's permission (hence "compulsory") but will have to pay a licensing fee.

In cases when it is judged too burdensome for scattered or small-scale buyers and sellers to find one another and negotiate a price, governments sometimes issue a compulsory license for the use so that the relative difficulty of obtaining permission for it does not extinguish it. In these types of cases,

¹⁴⁶ See Jane D. Comerford, *Note, CBS v. ASCAP: Blanket Licensing and the Unresolved Conflict Between Copyright and Antitrust Law*, 13 Conn. L. Rev. 465, 470-76 (1981). Note that an international study of IP rights collectives by a group of economists found striking similarities in their basic organization and administration. See STANLEY M. BESEN & SHEILA NATARAJ KIRBY, COMPENSATING CREATORS OF INTELLECTUAL PROPERTY: COLLECTIVES THAT COLLECT (RAND Study) (1989); Stanley M. Besen et al., *An Economic Analysis of Copyright Collectives*, 78 Va. L. Rev. 383, 385-90 (1992).

¹⁴⁷ Kenneth A. Shepsle & Barry R. Weingast, *The Institutional Foundations of Committee Power*, 81 Am. Pol. Sci. Rev. 85, 89 (1987) (discussing the pervasiveness of "veto groups" in legislatures).

the license must often pass the Berne¹⁴⁸ three-step test: members shall confine limitations and exceptions to exclusive rights (1) to certain special cases which (2) do not conflict with a normal exploitation of the work and (3) do not unreasonably prejudice the legitimate interests of the rights holder.

Another path forward is forming a national trust to collect, copyright by using the language in the “Special Works” clauses, and manage government-funded, commercially-created software. The trust's charter could include evaluating the software for commercial viability; assembling a business case for commercializing selected software; selecting suitable private enterprises to commercialize the selected software; collecting and distributing royalties; collecting and cataloging software and perhaps databasing it online; and working with government agencies to ensure that each agency's needs are satisfied, and if not, contracting with commercial firms to ensure that the needs are met.

The trust assets would be licensing fees from the technology developed with Federal funding. This trust would operate in a similar fashion to the trust system that currently exists to manage the Native American trust lands for the fiduciary benefit of Native Americans; here the benefit would be for the American taxpayer. A trust board could be formed comprised of representatives from industry, banking and finance, academia, national laboratories, public, and government officials to administer the trust.

Congress would probably need to prepare legislation to establish and charter the trust, establish a means of accountability, decide on who would be the trust beneficiaries, identify how to dissolve the trust, specify what happens in the event the trust is dissolved, and explain how to remove the trustees. After establishing the trust, the trust should be required to set documented standards for performance of each of its duties. The trust could claim copyright for the taxpayers of the United States rather than the government.

The “no-change” option is also available and defensible. Some would argue that the current

¹⁴⁸ Berne Convention Implementation Act of 1988, 17 USC 101, note

federal funding scheme is working very well. The government spurs the development of needed intellectual property, capitalism is enhanced, and small businesses make money. Indeed, the Constitution itself promotes just such a way of doing business.

CONCLUSION

The debate continues regarding government-sponsored, privately-developed software: should it be placed in the public domain or should the status quo remain? Is the software private property intended for private gain, that will launch technology into the stream of commerce more quickly and efficiently than if the government controls the copyright? As shown above, reports show that the legislation that enables this commercialization is working well. However, some legislators and citizens argue that the taxpayer is paying twice. One thing that everyone agrees on is that the acquisition regulations that govern the process are poorly formulated, intimidating, and confusing.

Alternate mechanisms, leading away from the status quo can lead to process simplification. These alternate mechanisms also provide a middle ground where the public as well as the private contractor benefits financially from government-funded R&D. The recommended path forward is the option that provides the best middle ground between private gain and public domain.

In the end, the price of unrestricted government information may be eternal vigilance. Continuing vocal resistance by the taxpayer may be needed to maintain the flow of government information and to prevent the direct or indirect exercise of agency information controls.