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FEDERALLY FUNDED R&D CENTERS

Issues Relating to the Management of DOD-Sponsored Centers



**National Security and
International Affairs Division**

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The Honorable Curt Weldon
Chairman
The Honorable John M. Spratt, Jr.
Ranking Minority Member
Subcommittee on Military Research
and Development
Committee on National Security
House of Representatives

This report identifies issues that we believe merit closer attention as Congress and the Department of Defense (DOD) seek to resolve concerns relating to the management and use of DOD's federally funded research and development centers (FFRDC). We also discuss information from our March 1996 testimony on recent DOD actions to improve the management of FFRDCs.¹

Background

FFRDCs were first established during World War II to meet specialized or unique research and development needs that could not be readily satisfied by government personnel (due to limits on federal salaries and hiring) or commercial contractors. Additional and expanded requirements for specialized services led to increases not only in the size but also in the number of FFRDCs, which peaked at 74 in 1969. Today, 8 agencies, including DOD, fund 39 FFRDCs that are operated by universities, nonprofit organizations, or industrial firms under long-term contracts. Provisions of the Competition in Contracting Act² authorize agencies to award these contracts noncompetitively. The Office of Federal Procurement Policy (OFPP) within the Office of Management and Budget (OMB) establishes governmentwide policy on the use and management of FFRDCs.

The Director of Defense Research and Engineering is responsible for developing overall policy for DOD's 11 FFRDCs. The Director also determines the funding level for each FFRDC based on the overall congressional ceiling on FFRDC funding and FFRDC sponsors' funding requirements. Planned fiscal year 1996 funding for DOD's FFRDCs is about \$1.2 billion. DOD categorizes each of its FFRDCs as either a systems engineering and integration center, a studies and analyses center, or a research and development laboratory.

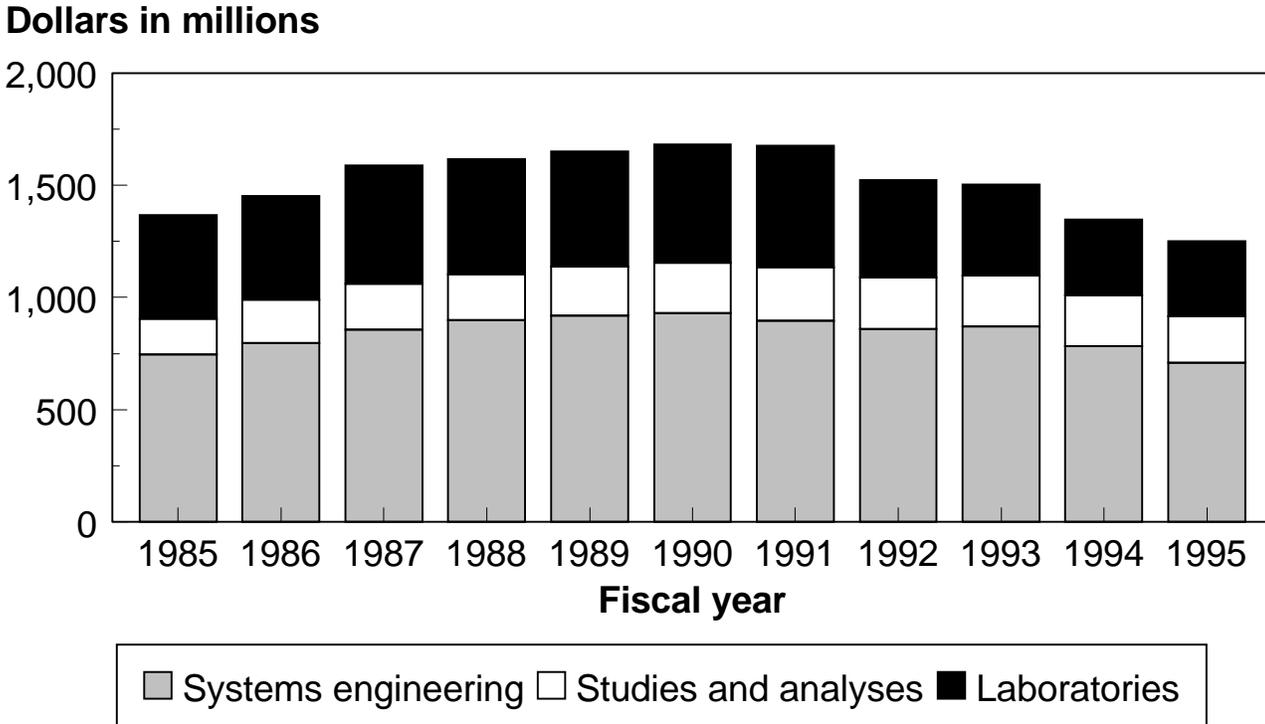
¹Federally Funded R&D Centers: Observations on DOD Actions to Improve Management (GAO/T-NSIAD-96-117, Mar. 5, 1996).

²See 10 U.S.C. 2304 (b)(1)(C) and (c)(3)(B).

The military services and defense agencies sponsor individual centers and award and administer 5-year contracts after reviewing the continued need for the FFRDCs. Unlike a commercial contractor, an FFRDC accepts restrictions on its ability to manufacture products and compete for other government or commercial business. These restrictions are intended to (1) limit the potential for conflicts of interest when FFRDC staff have access to sensitive government or contractor data and (2) allow the DOD sponsor to form and maintain a special or strategic relationship with its FFRDC.

As DOD downsizing continues, attention has turned to the infrastructure supporting DOD's research and technology programs. DOD has, for example, initiated efforts to consolidate and downsize military-operated laboratories to eliminate redundant facilities. In line with heightened attention accorded DOD's technology infrastructure, Congress has renewed its long-standing concern over DOD's use of FFRDCs and undertaken several initiatives to control the centers more tightly. The Department of Defense Appropriations Act, 1995, Public Law 103-335, prohibited the creation of new FFRDCs, imposed more specific restrictions on their operations, and limited the total funding DOD provides such centers. For example, overall funding for DOD's FFRDCs, in constant 1995 dollars, increased by about 23 percent, from almost \$1.4 billion in fiscal year 1985 to a peak of approximately \$1.7 billion in fiscal year 1990, after which Congress began reducing DOD's FFRDC funding. Since fiscal year 1990, funding for DOD's FFRDCs has decreased by almost 26 percent to about \$1.3 billion in fiscal year 1995. Figure 1 shows the obligations of DOD's FFRDCs, in constant 1995 dollars, from fiscal years 1985 to 1995.

Figure 1: Obligations for DOD's FFRDCs From Fiscal Years 1985-95 (in Constant 1995 Dollars)



Source: DOD.

Results in Brief

On the basis of our work on FFRDCs, as well as studies done by others, we have identified four issues we believe merit attention as Congress and DOD work to resolve concerns relating to FFRDCs. These issues are whether DOD (1) limits its FFRDCs to performing appropriate work, (2) adequately safeguards the objectivity of its FFRDCs, (3) oversees its FFRDCs effectively, and (4) adequately considers cost-effective alternatives to using FFRDCs.

First, the DOD Inspector General's office and others have raised concerns that FFRDC mission statements are too broad and do not clearly identify the specialized tasks that FFRDCs should perform. An overly broad charter may allow FFRDCs to diversify into areas outside their proper scope. For example, an FFRDC might assume work that commercial contractors could perform as effectively under competitive contracts. On the other hand,

there is some debate as to whether FFRDCs may be performing inherently governmental functions that should be performed by civil servants. DOD now defines the role of FFRDCs as performing work that is consistent with the FFRDC's purpose, mission, capabilities, and core competencies and requires a special relationship between the FFRDC and its sponsor.

While DOD states that it is important to ensure that tasks assigned to the FFRDC meet the core work criteria, we believe it will continue to be difficult to determine whether a task meets these criteria. We found that FFRDC mission statements remain broad, and FFRDCs' recently identified core competencies differ little from the previous scope of work descriptions. As we stated in our 1988 report, the need for the special relationship is the key to determining whether a task is appropriate for an FFRDC.³ However, determining whether one or more of the characteristics of the special relationship is required for a task may be difficult, since determining the need for an element of the special relationship requires potentially difficult and subjective judgments.

Second, questions have been raised by Congress and others about whether DOD efforts to safeguard the objectivity⁴ of its FFRDCs are adequate. Specifically, these questions have been raised because DOD (1) has issued little specific FFRDC-wide guidance on safeguarding objectivity or regulating the outside interests of Board of Trustee members, relying instead on FFRDC sponsors to design appropriate internal controls and (2) has not historically exerted strong control over work FFRDCs' parent organizations perform through non-FFRDC divisions. The ability to give impartial, objective advice is a key characteristic of DOD's special relationship with FFRDCs and is fundamental to the value DOD attaches to their use. DOD believes the risk of abuse is low and generally relies on its sponsors to design appropriate safeguards. We found that some sponsors have implemented more rigorous controls than others. Further, we found that FFRDC trustees had a broad network of affiliations with private industry, universities, and government. As the Department of Defense Appropriations Act, 1992, Public Law 102-172, directed, DOD now requires an approved conflict-of-interest policy for FFRDC trustees, but rather than establishing departmentwide criteria, DOD relies on sponsors to design appropriate internal controls.

³Competition: Issues on Establishing and Using Federally Funded Research and Development Centers (GAO/NSIAD-88-22, Mar. 7, 1988).

⁴Objectivity in this context is generally understood to mean the ability to provide technical and analytical support that is unbiased, impartial, free from real or perceived conflicts of interest, and solely in the public interest.

Likewise, DOD has not historically exerted strong control over work FFRDCs' parent organizations perform through non-FFRDC divisions. The question of whether accepting work from organizations other than its sponsor impairs an FFRDC's ability to provide objective advice has long been discussed. DOD has revised its FFRDC management plan to incorporate criteria to limit diversification by FFRDC parent corporations and control the non-FFRDC work they perform. The ultimate effectiveness of the criteria in alleviating concerns about parent corporations' diversification will depend largely on the quality and thoroughness of sponsor reviews of proposed non-FFRDC work.

Third, Congress and others have repeatedly raised questions about the adequacy of DOD policy guidance and oversight. Concerns have been raised regarding whether DOD policy guidance ensures that sponsors (1) adequately justify awarding noncompetitive contracts for the operation of the FFRDCs, (2) adequately screen tasks assigned to FFRDCs, (3) implement adequate audit controls for the FFRDCs, (4) award reasonable contract fees, and (5) make certain that FFRDC employees' compensation is reasonable. For example, concerns remain as to whether DOD sponsors adequately justify the continuing need for the FFRDCs. Under federal policy, an agency may continue sponsorship of an FFRDC and award a noncompetitive contract for its operation only after demonstrating a continuing need for the center. We found that recently completed reviews to justify the continuing need for FFRDCs generally contained extensive analyses and discussion and addressed the criteria required by DOD. These reviews, however, did not include formal market surveys to identify alternatives to using FFRDCs. Similarly, we and others have raised recurring questions about how FFRDCs use their contract fees. Our recent work at The Aerospace Corporation and the MITRE Corporation found that these two organizations used contract fees to pay costs for items such as entertainment, personal expenses for company officers, and employee benefits.

While DOD has taken some steps to address the concerns regarding oversight, a Defense Science Board (DSB) Task Force recently noted a significant distrust of DOD's use and management of its FFRDCs and recommended the establishment of an independent advisory panel to address this distrust.⁵ This panel was established in late 1995 with the mission of reviewing and advising DOD on the management of its FFRDCs. During meetings earlier this year, we observed that the panel members

⁵The Role of Federally Funded Research and Development Centers in the Mission of the Department of Defense, Defense Science Board Task Force, April 25, 1995.

appeared to be approaching their task with the utmost seriousness and asking tough questions of both DOD and FFRDC officials.

Fourth, concerns have long been expressed that DOD does not adequately consider hiring civil servants or contracting with commercial firms as alternatives to using FFRDCs. DOD maintains that in-house and commercial contractor alternatives to the centers are not as effective. While limits on hiring additional civil servants make in-house alternatives difficult to pursue, we concluded in 1994 that managers should be required to analyze the relative cost of performing a function both by contract and in-house when deciding to contract for services.⁶ A 1991 Air Force initiative, known as Coral Convert, illustrates the potential benefits of such analyses, projecting \$17.9 million in annual savings by using civil servants to replace FFRDC and service support contractor personnel.⁷ Similarly, the complexity of awarding competitive contracts to commercial firms may create incentives to use FFRDCs without adequately examining competitive alternatives. We identified two alternatives—using broad agency announcements⁸ to obtain information on the capabilities of non-FFRDCs, or using procedures for the award of task order contracts for advisory and assistance services that were authorized under the Federal Acquisition Streamlining Act of 1994 Public Law 103-355—which could alleviate some of the administrative burdens of competitive contracting.

In our March 1996 testimony, we reported that DOD had recently provided an update on initiatives it was taking to (1) define FFRDC core work appropriate for FFRDCs, (2) establish stringent criteria for the noncore work FFRDCs' parent corporations accept, (3) develop guidelines to ensure that management fees are based on need and detailed justification, and (4) establish an independent advisory panel as the DSB Task Force recommended. We generally support the direction DOD has taken with these initiatives to address long-standing issues related to management of FFRDCs. Because the initiatives are just now being implemented, it is too

⁶Government Contractors: Contracting Out Implications of Streamlining Agency Operations (GAO/T-GGD-95-4, Oct. 5, 1994).

⁷In 1991, the Air Force Materiel Command (AFMC) proposed hiring civil servants to replace certain contractor personnel at its Electronic Systems Center and Space and Missile Systems Center. In a limited test of this proposal, AFMC successfully recruited qualified personnel for civil service positions, and officials reported that cost savings were being achieved. The test was not expanded, however, due to federal workforce reductions imposed after the National Performance Review report.

⁸The Federal Acquisition Regulation 6.102 (d)(2)(i) provides that a broad agency announcement is a general announcement of an agency's research interest, including criteria for selecting proposals, and soliciting the participation of all offerors capable of satisfying the government's needs.

early to tell how effectively they will be implemented or how well they will address long-standing concerns regarding use of FFRDCs.

Agency Comments

DOD generally concurred with this report (see app. V). DOD also provided some technical comments and suggested clarifications that have been incorporated into the report as appropriate.

Scope and Methodology

Our review included the 11 FFRDCs DOD sponsors. We did not include DOD's university-affiliated research centers in our review, since DOD's internal reviews of FFRDC issues did not include these centers until May 1995, and the studies on which we relied did not include information on the university-affiliated centers.⁹

We based this review on our work related to FFRDCs as well as reports and studies done by others. We supplemented this information with limited additional data collection to provide up-to-date information on DOD activities. We did not attempt to provide definitive answers to policy questions or recommendations for resolving the issues. We obtained information from documents, reports, and interviews with officials from the Office of the Director of Defense Research and Engineering, Defense Contract Audit Agency, selected FFRDCs and their sponsors, and OMB. We also interviewed officials from Johns Hopkins University's Applied Physics Laboratory—currently a university-affiliated research center that had been an FFRDC until the mid-1970s—and the Professional Services Council.¹⁰ We reviewed legislation and federal regulations pertaining to FFRDCs and reviewed prior reports by DOD, the DSB Task Force, Senate Governmental Affairs Committee, Congressional Research Service, Office of Technology Assessment, and our office. We conducted our review between October 1994 and May 1996 in accordance with generally accepted government auditing standards.

Appendix I provides additional details on the issues discussed above relating to the management of DOD-sponsored FFRDCs, and appendix II lists the reports issued by us and others relating to DOD's FFRDCs. Appendix III includes general information on DOD's FFRDCs, and appendix IV compares

⁹DOD's internal advisory group decided to include university-affiliated research centers when reviewing FFRDCs due to the similar manner in which the organizations function.

¹⁰The Professional Services Council is a trade association representing commercial professional services' firms.

the FFRDCs' former scope of work descriptions and their recently identified core competencies. Appendix V contains comments from DOD.

We are providing copies of this report to the Secretary of Defense, Administrator of OFPP, and other interested congressional committees and subcommittees. Copies will also be made available to others on request.

Please contact me at (202) 512-4587 if you or your staff have any questions concerning this report. Major contributors to this report are listed in appendix VI.

A handwritten signature in black ink that reads "David E. Cooper". The signature is written in a cursive style with a large, sweeping initial "D".

David E. Cooper
Associate Director,
Defense Acquisitions Issues

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Abbreviations

AFMC	Air Force Materiel Command
C ³ I	command, control, communication, and intelligence
DCAA	Defense Contract Audit Agency
DOD	Department of Defense
DSB	Defense Science Board
FFRDC	federally funded research and development centers
IDA	Institute for Defense Analyses
MTS	members of technical staff
NASA	National Aeronautics and Space Administration
OFPP	Office of Federal Procurement Policy
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense

Issues Relating to the Management of DOD-Sponsored FFRDCs

This appendix discusses issues that we believe merit attention as Congress and the Department of Defense (DOD) work to resolve concerns relating to federally funded research and development centers (FFRDC), including the (1) missions and core functions of FFRDCs, (2) safeguards for FFRDC objectivity, (3) DOD oversight of the centers, and (4) alternatives to using the centers. This appendix also discusses information from our March 1996 testimony on recent DOD actions to improve the management of FFRDCs.

The Missions and Core Functions of DOD's FFRDCs

The DOD Inspector General's office, among others, has raised concerns that FFRDC mission statements are too broad and do not clearly identify specialized tasks that the FFRDC can perform most effectively. The mission statement of the Lincoln Laboratory FFRDC, for example, states that the Laboratory is to "carry out a program of research and development pertinent to national defense. . . ." There has been some concern within Congress and among others that FFRDCs may be diversifying into areas outside their proper scope. DOD, however, now defines the role of FFRDCs as performing work that is consistent with the FFRDC's purpose, mission, capabilities, and core competencies and requires a special relationship to exist between the FFRDC and its sponsor. Such work need not require unique capabilities. Using the special relationship to identify work appropriate for the FFRDCs will require potentially difficult and subjective judgments to determine whether a task is appropriate for an FFRDC to perform. Further, there is some debate that the FFRDCs may perform inherently governmental functions that government employees should perform.

Role of FFRDCs Is Defined in Terms of Special Relationship Rather Than Unique Capabilities

As a robust private sector professional services industry grew to meet the demand for technical services, it became apparent that industry had the capability to perform some tasks assigned to FFRDCs. As early as 1962, the Bell Report noted criticism that nonprofit systems engineering contractors had undertaken work traditionally done by private firms.¹ A 1971 DOD report stated, "It is pointless to say that the [systems engineering FFRDC] function could not be provided by another instrumentality. . . ." According to this report, private contractors could also do much the same type of work as the studies and analyses of FFRDCs. The report pointed to the flexibility of using the centers and their broad experience with sponsors' problems as reasons for continuing their use. In 1994, the DOD Inspector General concluded that FFRDC mission statements did not identify unique

¹Complete citations for all references to specific reports and studies are provided in app. II.

**Appendix I
Issues Relating to the Management of
DOD-Sponsored FFRDCs**

capabilities or expertise, resulting in FFRDCs being assigned work without adequate justification.

In a 1988 report, we pointed out that governmentwide policy did not require that FFRDCs be limited to work that industry could not do; FFRDCs could also undertake tasks they could perform more effectively than industry. FFRDCs are effective, we observed, partly because of their special relationship with their sponsoring agency. This special relationship embodies elements of access and privilege as well as constraints to limit their activities to those DOD deems appropriate.

DOD has recently elaborated on and refined the concept of the FFRDC special relationship. According to DOD, FFRDCs perform tasks that require a special or strategic relationship to exist between the task sponsor and the organization performing the task. Table I.1 shows DOD's description of the characteristics of this special relationship. According to the Defense Science Board (DSB) Task Force, these characteristics allow an FFRDC to perform research, development, and analytical tasks that are integral to the mission and operation of the sponsor.

Table I.1: Characteristics of the Special Relationship Between an FFRDC and Its DOD Sponsor

Characteristic	Description
Long-term continuity.	Uninterrupted, consistent support based on a continuing relationship.
Comprehensive knowledge of sponsor needs and operations.	Expertise on and institutional memory about issues of enduring concern to the sponsor.
Adaptability.	Ability to respond to emerging needs of their sponsors.
Objective, high-quality, current research.	A highly educated and skilled professional staff that can produce thorough, independent analyses to address complex technical and analytical problems and maintain currency in their fields of expertise.
Freedom from real or perceived conflicts of interest.	Independence of commercial, shareholder, political, and other associations and dedication to the public interest.
Broad access to sensitive government and commercial proprietary information.	Lack of institutional interests that could lead to misuse of information or cause contractor reluctance to provide such information.
Quick response capability.	Short-term assistance to help sponsors meet urgent and high-priority requirements.

DOD Seeks to More Clearly Identify Work to Be Performed by FFRDCs

In 1995, the DSB Task Force and an internal DOD advisory group concluded that there is a continuing need for FFRDCs for certain core work that requires the special relationship previously described. Giving such tasks to commercial contractors, DOD concluded, would raise numerous concerns, including questions about potential conflicts of interest. Accordingly, DOD has defined an FFRDC's core work effort as tasks that (1) are consistent with the FFRDC's purpose, mission, capabilities, and core competencies and (2) require the FFRDC's special relationship with its sponsor. The DOD advisory group estimated that this core work effort represents about 3.4 percent of DOD's research, development, and analytic effort. The Task Force and advisory group also found that FFRDCs performed some noncore work that did not require a special relationship and concluded that this work should be transitioned out of the FFRDCs and acquired competitively.

On the basis of these conclusions, DOD required each sponsor to review its FFRDC's core competencies, identify and prioritize the FFRDC's core work effort, and identify the noncore work that should be transitioned out of the FFRDC. We found, however, that the core competencies the sponsors identified differed little from the scope of work descriptions that were in place previously (see app. IV). In several cases, the core competencies simply restated the functions listed in an FFRDC's scope of work description. In others, the core competencies summarized the scope of work functions into more generic categories. The sponsors we spoke to told us they identified little, if any, noncore work being performed at their FFRDCs.

Even though DOD states that it is important to ensure that tasks assigned to the FFRDC meet the core work criteria, we believe it will continue to be difficult to determine whether a task meets these criteria. FFRDC mission statements remain broad, and core competencies differ little from the previous scope of work descriptions. As we stated in our 1988 report, the need for the special relationship is the key to determining whether work is appropriate for an FFRDC. However, determining whether one or more of the characteristics of the special relationship is required for a task may be difficult, since the need for an element of the special relationship is normally relative rather than absolute. For example, we believe DOD would expect objectivity in any research effort, but it may be difficult to demonstrate that a particular task requires the special degree of objectivity an FFRDC is believed to provide.

Uncertainty about whether an FFRDC's special relationship allows it to perform a task more effectively than other organizations also accompanies

decisions to assign work to an FFRDC. In our 1988 report, we stated that full and open competition between FFRDCs and non-FFRDCs could provide DOD assurance that it has selected the most effective source for the work. However, the report also stated that exposing FFRDCs to marketplace competition would fundamentally alter the character of the special relationship.

**FFRDC's Role in
Supporting Governmental
Functions Should Be
Closely Monitored**

There is some debate that FFRDCs may perform some inherently governmental functions.² We believe this concern arises in part as a result of the difficulty in clearly distinguishing work that should be performed by FFRDCs. DOD officials believe that it is clear that the FFRDCs are not performing inherently governmental functions but are performing work that supports such functions. Because of both the nature of the functions FFRDCs perform and the nature of the special relationship between an FFRDC and its sponsor, we believe that DOD needs to devote continuing management attention to ensuring that inherently governmental functions are not tasked to the FFRDCs.

On the basis of a review of agency use of advisory contractors, we reported in 1991 that defining inherently governmental functions was difficult and subject to substantial judgment. We concluded that examining the nature of the relationship between the government and an advisory contractor was more useful than developing a specific list of functions that are inherently governmental. Further, we stated that government officials must retain final authority to decide government policy as well as maintain an active role in the decision-making process to allow officials to make independent judgments regarding a contractor's policy recommendations. OFPP's 1992 policy statement on inherently governmental functions endorses this conclusion, stating that when service contractors are used, government action must be "taken as the result of informed, independent judgments made by Government officials who are ultimately accountable to the President."

While DOD officials believe that the FFRDCs are not performing inherently governmental functions, they clearly perform functions that federal officials should monitor closely. OFPP's policy statement includes a list of functions for which agencies must devote additional management attention regarding the contractor's manner of performance. OFPP does not

²According to the Office of Federal Procurement Policy (OFPP), "inherently governmental functions" are functions so intimately related to the public interest as to mandate performance by government employees. OFPP cites as examples such functions as commanding military forces, hiring federal employees, or awarding government contracts.

classify these functions as inherently governmental but requires additional management attention for them so as to ensure that appropriate agency control is maintained. FFRDCs routinely perform several of these functions, including the following:

- services that relate to analyses, feasibility studies, and strategy options to be used by agency personnel in developing policy;
- services in support of acquisition planning;
- technical evaluation of contract proposals;
- assistance in developing statements of work; and
- work in situations that permit access to sensitive government or proprietary information.

We believe that in addition to closely monitoring FFRDCs' performance of such functions, DOD should closely monitor the assignment of work to FFRDCs to ensure that contracting out for such services is appropriate. Although the special relationship between an FFRDC and its sponsor is an important criterion for assigning work to the FFRDCs, certain characteristics of the special relationship can raise questions about whether functions performed by FFRDCs should be performed in-house.

Our 1991 report on whether service contractors are performing inherently governmental functions proposed guidelines to help agencies in determining whether contracting out for consulting services would be appropriate. The guidelines do not specify which functions are governmental, but address, among other things, the nature of the relationship between a government agency and a prospective contractor as aspects for consideration in contracting out for services. For example, while these guidelines suggest that government officials must set a definite time period for the use of a contractor and use government employees if the need is for a long or indefinite period, an FFRDC is expected to have a long-term, continuing relationship with its sponsor. Similarly, while the guidelines suggest that the institutional memory about agency programs must reside with the agency rather than the contractor, the FFRDC is expected to maintain program institutional memory for the sponsor. In this regard, we believe the guidelines are appropriate for use by DOD when it considers whether to contract out for FFRDCs' services or perform these services in-house.

Safeguards for FFRDC Objectivity

According to DOD, the ability to give impartial, objective advice is a key characteristic of the special relationship and is fundamental to the value DOD attaches to the use of FFRDCs. DOD believes the risk of abuse is low and generally relies on sponsors to identify and report or avoid potential conflicts of interest and to design appropriate internal controls. Some sponsors have seen a need to implement more rigorous controls than others. Similarly, DOD has not historically exerted strong control over work FFRDCs' parent organizations performed through non-FFRDC divisions. The question of whether accepting work from organizations other than its sponsor impairs an FFRDC's ability to provide objective advice has long been discussed. Finally, as Congress directed (P.L. 102-172), DOD has implemented controls over FFRDC trustees' affiliations with defense contractors. DOD's approach to implementing these controls is to rely on sponsors' action rather than to establish departmentwide criteria.

Controls to Ensure Objectivity Vary

Since objectivity is a key characteristic of FFRDCs, questions have been raised about whether DOD efforts to safeguard the objectivity of its FFRDCs are adequate. According to the DSB Task Force's 1995 report, DOD-sponsored FFRDCs are valuable largely because they provide objective, high-quality work. The Task Force reported that the special relationship between FFRDCs and their sponsors allows the centers to offer unbiased advice, analyses, and evaluations that focus on the public interest. DOD sponsors also identified objectivity as one of the more important aspects of the special relationship. Objectivity is particularly important because FFRDCs help DOD develop and analyze policy and strategy options and assess alternative technology directions. In some cases, FFRDCs also evaluate contractors' performance and participate in source selections for weapon system procurements.

DOD sponsors believe that the potential for bias in FFRDC advice is small. According to the DSB Task Force, nonprofit corporations or universities operate DOD's FFRDCs and therefore are not influenced by corporate or shareholder interests. Further, DOD asserts that FFRDCs operate under restrictions more stringent than applied to other government contractors. For example, to prevent an FFRDC's judgment from being swayed by prospective profits, DOD prohibits the centers from undertaking long-term hardware production. DOD also prohibits the centers from competing with commercial firms for government service contracts. These restrictions, DOD maintains, are sufficient to allow FFRDCs to provide impartial advice. Accordingly, DOD has issued little specific guidance on safeguarding FFRDC objectivity.

In the absence of specific DOD guidance, some sponsors have seen the need to implement more rigorous controls to safeguard objectivity than have other sponsors. For example, DOD's sponsoring agreement with the MITRE Corporation provides that MITRE will avoid any action that will place its personnel in possible or actual conflict of interest positions. The Navy's agreements with The CNA Corporation also refer to ensuring freedom from conflicts of interest but include additional controls not present in the agreements between DOD and MITRE. The CNA Corporation's charter and bylaws require an annual conflict of interest statement for each employee and annual statements of outside affiliations and financial interests for trustees, corporate officers, and senior managers. Further, in its Code of Ethics and Standards of Conduct, The CNA Corporation warrants that it should avoid organizational conflicts of interest and agrees to disclose any conflicts that it discovers to the contracting officer. Also, the Code states that if The CNA Corporation employees do not report perceived or actual conflicts to the appropriate supervisors, they may be subject to disciplinary action, which may include termination of employment.

DOD Is Seeking Stronger Oversight as FFRDCs Diversify

The question of whether accepting work from organizations other than its sponsor impairs an FFRDC's ability to provide objective advice has long been discussed. As early as 1962, the Bell Report raised this question but noted that no clear consensus had developed as to whether concerns about diversification were well founded. The report recognized that studies and analyses FFRDCs could effectively serve multiple clients but concluded that systems engineering organizations were primarily of value when they served a single client. During the early 1970s, DOD encouraged its FFRDCs to diversify into nonsponsor work. According to a 1976 DOD report on the management of federal contract research centers,³ FFRDCs that did not diversify suffered efficiency and morale problems as their organizations shrank in the face of declining DOD research and development budgets. Nonetheless, this report recommended that the systems engineering FFRDCs limit themselves to DOD work and adjust their workforces in line with changes in the DOD budget. Regarding the MITRE Corporation, the report recommended that MITRE create a separate organization to carry out its non-DOD work. In 1994, concerns were raised within Congress that the activities of non-FFRDC organizations resulted in "an ambiguous legal, regulatory, organizational, and financial situation," and DOD was directed to prepare a report on non-FFRDC activities (Senate Report 103-282). More recently, however, the DSB Task Force concluded in

³FFRDCs were previously called federal contract research centers.

its 1995 report that FFRDCs and their parent companies should be allowed to accept work outside the core domain only when doing so was in the best interest of the country; the Task Force did not propose criteria for determining whether accepting nonsponsor work was in the country's best interest.

Acceptance of non-FFRDC work is now common at seven of the eight parent organizations operating DOD's FFRDCs. Except for the Institute for Defense Analyses, each parent organization performs some non-FFRDC work either within the FFRDC or through an affiliated organization created to pursue non-FFRDC work. Some affiliates are quite small: The CNA Corporation's Institute for Public Research accounts for about 3 percent of the Corporation's total effort. Other affiliates are more significant: prior to its division in 1996, the MITRE Corporation's two non-FFRDC affiliates accounted for about 11 percent of MITRE's total effort, and RAND's five non-FFRDC divisions account for about 32 percent of RAND's total effort. The Massachusetts Institute of Technology and Carnegie-Mellon University—parent organizations of Lincoln Laboratory and the Software Engineering Institute, respectively—each pursue a diverse range of non-FFRDC activities.

DOD has recently become more active in seeking to oversee work the parent organizations perform through non-FFRDC divisions. Sponsors have historically had the opportunity to oversee nonsponsor work performed within the FFRDC because the work is carried out under the FFRDC contracts that sponsors administer. This contract oversight mechanism is not available for non-FFRDC divisions. During 1995, for example, the Air Force expressed great reluctance to support The Aerospace Corporation's proposal to establish a non-FFRDC affiliate, indicating its concerns about the perception of a conflict of interest. Similarly, the MITRE Corporation's Board of Trustees decided to create a separate corporate division to perform non-FFRDC work for government and commercial customers after DOD rejected a MITRE proposal to establish an affiliated organization to handle commercial and non-FFRDC work. DOD generally concurred with the direction of the Board's plan to divide the corporation and formally expressed the Department's position that any cost recovery and distribution of assets and liabilities be legally appropriate, justified, and subject to audit by the Defense Contract Audit Agency (DCAA). This new corporation has a separate Board of Trustees and its own corporate officers. Further, no work is to be subcontracted between the two entities in order to preclude the sharing of employees involved in DOD work—and

knowledge developed in the course of DOD work—with the new corporation.

FFRDC Sponsors Oversee Affiliations of Trustees

A long-standing concern has been that the personal financial interests and affiliations of FFRDC trustees may affect the objectivity of the advice they provide DOD. In 1962, the Bell Report noted that the boards of organizations such as FFRDCs were often comprised of representatives of universities and commercial firms involved in federal research. Although acknowledging that it was in the public interest to have such organizations “controlled by the most responsible, mature, and knowledgeable [individuals] available in the nation,” the report pointed to the clear possibility that the potential for conflicts of interest inherent in such interlocking directorships could harm the public interest. The report concluded that FFRDC trustees should observe the spirit of recently adopted government policy concerning government consultants and advisers. This policy required consultants and advisers to fully disclose their private interests and abstain from rendering advice on matters that would affect their private interests.

FFRDC trustees have a broad network of affiliations. Our 1995 report on the affiliations of the 141 trustees who served on FFRDC boards during fiscal year 1993 showed that these individuals had affiliations with 447 private sector firms, 126 universities, and 91 federal government or military organizations. Further, 51 of the private sector firm affiliations and 77 of the university affiliations were with organizations that were among the top 100 prime contractors to DOD. For example, one individual served as a trustee of two different DOD FFRDCs and was affiliated with four private sector firms, including one of the nation’s principal weapons producers. Another trustee was affiliated with two presidential advisory commissions addressing military questions and with five private sector firms, including a major defense aerospace company. Another was a member of the DSB and was affiliated with two universities that operate FFRDCs for DOD and receive significant DOD research funding.

This issue of interlocking directorships received little attention in the studies of FFRDC issues we reviewed that were published during the 1970s and 1980s. In 1991, Congress (P.L. 102-172) prohibited members of FFRDC boards of trustees or directors from simultaneously serving on the board of a for-profit DOD contractor unless the FFRDC had a DOD-approved conflict of interest policy for board members. DOD assigned responsibility for reviewing and approving conflict of interest policies for boards of trustees

to FFRDC sponsors and declined to establish DOD-wide criteria for approving such policies. In 1992, a congressional committee expressed doubt about the wisdom of DOD's heavy reliance on sponsors to exercise oversight of FFRDCs (House Report 102-627). The DOD Inspector General's 1994 report stated that each of the organizations that operates an FFRDC for DOD had conflict of interest policies for board members that had been approved by primary sponsors and that all board members had disclosed their affiliations as these policies required. Further, the report found that contracting officers for 9 of the 10 FFRDCs, however, were personally unaware of the affiliations of FFRDC trustees.

DOD Oversight of Its FFRDCs

Questions have repeatedly been raised within Congress and among others about the adequacy of DOD's policy guidance and oversight. The Professional Services Council, for example, has expressed concern that sponsors do not adequately consider whether their FFRDCs are still needed or whether work they plan to assign to their FFRDCs is appropriate. Concerns have also been raised by the DOD Inspector General's office, about whether controls over FFRDC costs are adequate, particularly concerning contract fees paid to FFRDCs and compensation paid to their employees. In each case, DOD has taken some steps to address the concerns raised. The DSB Task Force's 1995 report noted a significant distrust of DOD's use and management of FFRDCs and recommended the establishment of an independent review panel to address this distrust.

DOD Efforts to Demonstrate Need for FFRDCs Have Been Criticized

Concerns have been raised by DOD's Inspector General's office, among others, that DOD does not adequately justify the continuing need for an FFRDC, which determines whether to continue sponsorship and subsequently award noncompetitive contracts to the organizations that operate FFRDCs. The Federal Acquisition Regulation at section 35.017-4 (a), requires a sponsor to review the continuing need for an FFRDC before renewing its contract or agreement. This comprehensive review must be done at least every 5 years. The Professional Services Council asserts that private firms have a broad range of research and analytical capabilities that would allow them to undertake many tasks DOD assigns to FFRDCs. Further, according to the Professional Services Council, industry and DOD have successfully used contract language to mitigate potential conflicts of interest. DOD continues to rely on FFRDCs, the Professional Services Council maintains, because it has not considered the capabilities of industry. In a 1993 report, the DOD Inspector General found that the sponsors did not use market surveys to identify alternatives to FFRDCs during comprehensive

reviews. The Inspector General also noted that sponsors did not publicize planned FFRDC contract renewals to invite industry to express interest in operating the FFRDCs and explain its capability to do so.

DOD has taken steps to ensure that sponsors provide more thorough documentation of their comprehensive reviews. In response to congressional concern, DOD issued a 1992 FFRDC management plan, which directed sponsors to provide copies of review reports to the Director of Defense Research and Engineering for evaluation and to update reviews conducted before 1990. DOD's 1994 updated FFRDC management plan outlines the criteria that governmentwide policy requires sponsors to address in comprehensive reviews. Under this plan, the Director of Defense Research and Engineering must concur with the sponsor's determination to continue an FFRDC before its agreement is renewed. Sponsors that we spoke with believe that current comprehensive review guidance is adequate, although it lacks detail on how to assess the criteria for renewing an FFRDC's sponsoring agreement. We found that recently completed comprehensive reviews generally contained extensive analyses and discussion and addressed the required criteria but did not include formal market surveys.

Appropriateness of Work Given to FFRDCs Has Been Questioned

Concerns have also been expressed about whether sponsors adequately screen tasks assigned to FFRDCs. The Federal Acquisition Regulation at section 35.017-3 requires sponsors to assign an FFRDC only tasks that are consistent with its mission and scope of work.⁴ The Professional Services Council, however, maintains that FFRDCs often receive work for which they are not uniquely qualified because assigning a task to an FFRDC is more convenient than awarding a separate competitive contract. On the basis of a survey of 229 FFRDC projects that are discussed in its 1994 report, the DOD Inspector General also criticized task sponsors' justifications for requesting FFRDC support. Task sponsors cited unique FFRDC expertise to explain why an FFRDC could perform a task more effectively than non-FFRDC sources, but they generally did not define the characteristics that made the FFRDC more effective. Further, task sponsors generally did not compare FFRDC costs with the cost of other sources. Similarly, the Inspector General of the Defense Information Systems Agency found that the agency lacked adequate internal controls over requests for support from the DOD-sponsored FFRDC operated by the MITRE Corporation. According to the Inspector General, justifications that task sponsors

⁴As previously discussed, DOD also includes consistency with the special relationship as a criterion for assigning work to the FFRDCs.

provided included “boilerplate” wording with no analysis to show why MITRE’s FFRDC was the best alternative.

DOD believes that critics expect unrealistically thorough justification for assigning tasks to an FFRDC. DOD’s 1994 management plan requires primary sponsors to review descriptions of work given to FFRDCs to ensure the work is consistent with FFRDC missions. DOD relies on this review by primary sponsors to identify any inappropriate requests for work that task sponsors submit. Commenting on the DOD Inspector General’s report, the Director of Defense Research and Engineering argued that the auditors had applied extreme and unreasonable standards to determine whether FFRDCs had unique qualifications for tasks. Further, the Director noted that the Inspector General had objected to other reasons for assigning work, such as an FFRDC’s familiarity with sponsor requirements and quick response capability. These justifications, the Director observed, are part of the core rationale for maintaining FFRDCs. The DSB Task Force’s 1995 report agreed that such factors were important reasons for using FFRDCs. Nonetheless, DOD has concluded that additional management controls over assignment of work to FFRDCs were needed and recently took steps to identify the core work of each FFRDC more clearly.

Adequacy of FFRDC Audit Controls Has Been Criticized

On the basis of a governmentwide review of FFRDCs, a 1992 report by the Senate Governmental Affairs Committee stated that required audits of FFRDC overhead costs were not being completed in a timely manner. According to the Committee’s report, DCAA performed audits of FFRDCs sponsored by DOD, the National Aeronautics and Space Administration (NASA), and the Nuclear Regulatory Commission several years after the fiscal year had ended. In addition, the Committee found that several audits contained repetitive or significant audit exceptions to FFRDC cost claims that apparently were not resolved at the time of the deficiency. DCAA acknowledged that a substantial backlog of overhead cost audits had developed during the late 1980s and early 1990s, but stated this problem was not unique to FFRDCs. According to DCAA officials, increasing demand for more time-critical price proposal audits and a shortage of audit staff led to a DOD-wide backlog. By 1995, DCAA had reduced the overhead audit backlog for FFRDCs.

Contract Fees Have Long Been Recognized as a Problem Area

The Senate Governmental Affairs Committee’s report also raised concerns about the justification for FFRDC contract fees. Contract fees are discretionary funds provided to FFRDCs in addition to reimbursement for

incurred costs and are similar to profits commercial contractors earn. In a 1969 report, we concluded that nonprofit organizations such as FFRDCs incur some necessary costs that may not be reimbursed under the procurement regulations, and we recommended that the Bureau of the Budget (now known as the Office of Management and Budget (OMB)), develop guidance that specifies the costs contracting officers should provide that fees cover. As the Committee report noted, since governmentwide guidance on fees had not been prepared, it was difficult to determine whether FFRDC fees were adequately justified. In response to the Committee's report, OFPP, OMB's procurement policy arm, agreed that governmentwide guidance on contract fees for nonprofit organizations was needed. OFPP has deferred action on developing such guidance pending a review of regulatory changes that DOD and the Department of Energy are currently developing.

In the absence of governmentwide guidance, recurring questions have been raised about how FFRDCs use their fees. In its 1994 report, for example, the DOD Inspector General concluded that FFRDCs used \$43 million of the \$46.9 million in fiscal year 1992 DOD fees for items that should not have been funded from fees. The bulk of this \$43 million funded independent research projects that should have been charged to overhead rather than paid from fees. The remainder of the \$43 million funded unallowable costs and future requirements that the Inspector General concluded were not necessary for FFRDC operations. Similarly, DCAA reviewed fiscal year 1993 fee expenditures at the MITRE Corporation and concluded that just 11 percent of the expenditures reviewed were ordinary and necessary to the operation of the FFRDC. DCAA reported that MITRE used fees to pay for items such as lavish entertainment, personal expenses for company officers, and generous employee benefits. Our recent work at The Aerospace Corporation found that the corporation used about \$11.5 million of its \$15.5 million management fee in fiscal year 1993 for sponsored research. Aerospace used the remainder of its fee and other corporate resources for capital equipment purchases; real and leasehold property improvements; and other unreimbursed expenditures such as contributions, personal use of company cars, conference meals, trustee expenses, and new business development expenses.

Federal agencies are attempting to address concerns about FFRDC fees but are pursuing different approaches. DOD has concluded that contracting officers should determine an FFRDC's needs for discretionary funding and base fee awards on these needs. In particular, DOD believes contracting officers need clear guidance on what fees may appropriately be provided

to cover. DOD has revised its FFRDC management plan to clarify procedures sponsors and contracting officers should follow in determining fees. NASA, in contrast, has revised its FFRDC contract with the Jet Propulsion Laboratory to provide a performance-based fee. NASA provides the Laboratory a base fee of \$6 million annually, and the laboratory can earn up to an additional \$12 million in fees by meeting performance criteria in its contract. The Department of Energy is also revising its FFRDC contracts to incorporate performance criteria. Fee provisions in the revised contracts differ somewhat, but some contracts link payment of fees to meeting contract performance criteria.

Reasonableness of Compensation Has Been Questioned

The proper benchmark for assessing FFRDC employees' compensation, particularly executives, has long been a problematic issue. The Federal Acquisition Regulation at section 31.205-6 requires contractors to demonstrate that employee compensation is reasonable in comparison to compensation paid by firms in the same industry, among other tests. FFRDCs generally use compensation at private industry research firms as the benchmark for their compensation. As early as 1962, however, the Bell Report asked whether a corporation similar to an FFRDC—created to provide services to the government and receiving all its financial support from the government—could be considered a “private” firm. The report concluded that private industry was generally the proper benchmark for setting pay at such organizations, but it noted that the salaries of top management merited special attention. In 1969, Congress imposed a cap on salaries for FFRDC personnel that lasted for several years.⁵ In 1994, Congress imposed a cap on FFRDC executive compensation, equal to level I of the federal Executive Schedule, that became effective on July 1, 1995 (P.L. 103-335). Congress has not passed legislation to impose this cap through fiscal year 1996.

The conclusions that may be drawn from recent FFRDC employee compensation reviews depend on whether private industry or civil service pay scales are selected as the benchmark. The DOD Inspector General, for example, recently reported that salaries for FFRDC chief executives were generally comparable to private industry chief executive salaries but uniformly well in excess of the highest civil service salaries. Salaries for other FFRDC executives were generally somewhat less than salaries for other private industry executives but generally exceeded civil service salaries. The Inspector General also reported indications that salaries for scientists and engineers were higher than salaries in leading research and

⁵The Armed Forces Appropriations, authorization Act, 1970, P.L. 91-121.

development organizations. A DCAA audit of compensation levels at MITRE found similar conditions. Our recent work on executive compensation at The Aerospace Corporation found that salary costs for executives increased by 78 percent over the 3-year period ending September 1994. This increase resulted from salary increases of up to 29 percent for individual executives during 1992 and a 45-percent increase in the number of executives from 22 to 32. During that time, average annual executive salaries increased by 23 percent from \$125,000 to about \$153,000. In addition, we recently issued a report on FFRDC compensation in relation to federal compensation levels, which found that the average compensation for all fiscal year 1993 FFRDC employees in the study was \$89,000.

DOD believes employee compensation at its FFRDCs is generally reasonable and accepts private industry pay scales as the relevant benchmark. In its 1995 report, the DSB Task Force noted that flexible policies with respect to employee pay and benefits is one private sector characteristic that makes FFRDCs attractive to DOD. The Task Force also warned that mandated salary limits would lead to a deterioration in the quality of FFRDC employees. DCAA has identified instances in which it believes pay for certain classes of FFRDC employees is excessive—compared with pay for comparable private industry employees—and DOD contracting officers have acted to resolve these cases. DOD also commissioned a compensation consulting firm to review compensation for staff that would have been subject to the fiscal year 1995 salary cap. On the basis of this review, DOD concluded that the staff's compensation was reasonable and should not be restricted by mandatory limits.

Independent Review Panel Has Been Created to Advise on FFRDCs

Although it endorsed the need for organizations such as FFRDCs, the DSB Task Force stated in its report that significant mistrust existed concerning DOD's use and oversight of FFRDCs. A principal concern, according to the Task Force, was that DOD assigned work to FFRDCs that could have been performed as effectively by private industry sources and acquired using competitive procurement procedures. Further, the Task Force found that the lack of opportunities for public review and comment on DOD's process for managing and assigning work to FFRDCs—available in the competitive contracting process—invited mistrust. To address public skepticism about DOD's use and management of FFRDCs, the Task Force recommended creation of an independent review panel of highly respected personnel from outside DOD. The panel would review the continuing need for FFRDCs, FFRDC missions, and DOD's management and oversight mechanisms for FFRDCs.

Alternatives to Using FFRDCs

Concerns have long been expressed by the Professional Services Council, among others, that DOD does not adequately consider hiring civil servants or contracting with commercial firms as alternatives to using FFRDCs. Even though DOD maintains that in-house and contractor alternatives to the centers are not as effective, limits on hiring additional civil servants make in-house alternatives difficult to pursue and the complexity of awarding competitive contracts to commercial firms has been mentioned as an incentive for using FFRDCs. These factors may hamper DOD's efforts to reduce dependence on FFRDCs but need not exclude consideration of alternatives.

Shrinking Federal Workforce Complicates Transferring FFRDC Work

Limits on the size of the federal workforce impede efforts to hire civil servants to perform work contracted out to FFRDCs. In analyzing the feasibility of alternatives to FFRDCs, several sponsors have noted that personnel ceilings would prevent acquiring in-house resources to accomplish FFRDC functions. Similarly, the DSB Task Force concluded in its 1995 report that it was not feasible to replace FFRDCs with in-house resources because the DOD workforce was expected to shrink rather than expand in coming years. Thus, sponsors seeking to replace FFRDC capabilities must compete for a shrinking pool of authorized civil service positions.

We have previously expressed concern that personnel ceilings may lead agencies to contract out work when it is not desirable to do so. For example, our 1991 report stated a common perception among agency managers that contract dollars were easier to obtain than authorizations for additional staff. As a result, we noted instances in which it was unclear whether agencies had contracted out work that might have involved inherently governmental functions and that might have been less expensive if it had been done in-house. In the report, we suggested that Congress consider exploring with OMB allowing civilian agencies to manage their activities within an authorized budget without regard to personnel ceilings. In 1994, we stated that before an agency decides whether to contract out for a particular service, the agency should be aware of the comparative cost of contracting out versus using federal employees. Because DOD foresees no realistic opportunity to hire additional civil service staff in lieu of contracting with FFRDCs, DOD's reviews of the continuing need for FFRDCs do not include such analyses.

An Air Force initiative, known as Coral Convert, illustrates the potential benefits of performing such analyses. During 1991, the Air Force Materiel

Command (AFMC) proposed to hire civil servants to replace certain contractor personnel at its Electronic Systems Center and Space and Missile Systems Center. AFMC estimated that hiring in-house personnel to replace 500 FFRDC and support service contractor personnel would save \$17.9 million annually. In addition to savings, the proposal was expected to improve management control over the acquisition workforce and provide flexibility to select the best mix of government and contractor personnel. In a limited test of this proposal, the Electronic Systems Center successfully recruited qualified personnel for civil service positions. At one location, for example, 3,300 applicants responded to a newspaper advertisement for 167 positions. According to Air Force officials, the personnel hired in this test are performing effectively, and cost savings are being achieved. The test was not expanded, however, due to federal workforce reductions imposed after the National Performance Review report.

The Defense Authorization Act, Fiscal Year 1996, Public Law 104-106, complicates the picture DOD faces as it assesses the right mix of in-house and contracted FFRDC resources. One measure requires DOD to consider the efficiencies gained through acquisition process streamlining in developing a plan to reduce its acquisition workforce by 25 percent over 5 years. Another measure requires DOD to develop a plan to consolidate and reduce the size of its FFRDCs. Certain DOD FFRDCs—most notably the Air Force’s two systems engineering FFRDCs—provide needed support to DOD’s acquisition workforce.

Simplified Procedures for Procuring Services Are Now Available

Federal procurement procedures are one motivation for using FFRDCs. The Professional Services Council asserts that DOD program managers frequently place work with FFRDCs to avoid the administrative burdens of competitive contracting. DOD maintains that FFRDC staff, due to their extensive background with sponsors’ programs, have a unique ability to respond to high-priority, time-sensitive analytical requirements. DOD acknowledges that procuring services competitively can be burdensome and time-consuming, but maintains that convenience in obtaining services is not a motivation for using FFRDCs. In its 1994 survey of 229 FFRDC projects, however, the DOD Inspector General found that about 30 percent of task sponsors reported that ease and quickness of obtaining services influenced their decision to seek FFRDC support.

While some task sponsors may perceive FFRDCs to be attractive because obtaining services appears quick and easy, two alternatives could alleviate

administrative burdens. In our 1988 report, we recommended that DOD test using broad agency announcements to obtain information on the capabilities of non-FFRDCs—including commercial contractors—to participate in pursuing DOD’s research goals. We concluded that the procedures associated with such announcements could be a relatively informal and expeditious way to solicit industry proposals in support of agency research plans. More recently, in its 1994 report, the DOD Inspector General endorsed broad agency announcements as a tool for gathering information on alternatives to FFRDCs.

The task order contracting procedure for advisory and assistance services authorized under the Federal Acquisition Streamlining Act of 1994, Public Law 103-355, which was revised from previous procedures, is another mechanism that could be useful. Task order contracts provide for the government to issue orders to perform defined tasks during the contract term but do not commit the government to purchase more than a minimum quantity of services; services are purchased by placing task orders under the contract. Congress was concerned that, under the previous procedures, such contracts could be abused to avoid competition (Senate Report 103-258, S.1587, 103 Cong. 2d Sess. 15 (1994)). Under the new procedures, when an agency plans to award a task order contract for advisory and assistance services to exceed 3 years and valued at over \$10 million, it must provide for awards to multiple contractors under a single solicitation. When placing individual task orders under such contracts, the agency does not need to conduct formal competitions; however, it must provide all contractors awarded contracts under the solicitation a fair opportunity to be considered for the order. Congress intended to give agencies broad discretion in establishing procedures for the evaluation and award of orders under such contracts (Senate Report 103-258, *id.*).

Experience gained through a planned Air Force initiative could shed light on how well these procedures work and on how effectively private contractors can perform FFRDC work. The Air Force plans to contract competitively for certain core functions its systems engineering FFRDCs currently perform and has ranked these functions to identify those most suitable for competitive contracting. The Electronic Systems Center, for example, considers laboratory testing to explore or verify performance most suitable for competitive contracting with a non-FFRDC because following an established test protocol and reporting results involve little exercise of discretion or judgment. In contrast, developing and analyzing systems architectures requires the exercise of considerable discretion and

judgment, as well as a broad knowledge of Air Force systems; consequently, the Electronic Systems Center does not consider this function suitable for competitive contracting. The Air Force will not start this test until decisions are made on plans to streamline its acquisition process; some functions its systems engineering FFRDCs currently perform may be curtailed or eliminated.

DOD Actions to Improve FFRDC Management

Under an action plan submitted to Congress in 1995, DOD has begun steps to strengthen management of its FFRDCs and address some of the issues we identified. In February 1996, DOD updated the status of four key action plan initiatives, including (1) defining core work appropriate for FFRDCs; (2) establishing criteria for acceptance of work outside the core by FFRDCs' parent companies; (3) developing guidance to ensure that management fees provided to FFRDCs are based on need and detailed justification; and (4) establishing an independent advisory panel to review DOD's management, use, and oversight of its FFRDCs. As stated in our March 1996 testimony, we believe these initiatives will move DOD's management of FFRDCs in a positive direction. Because the initiatives are just now being implemented, it is too early to tell how effectively they will be implemented or how well they will address long-standing concerns regarding use of FFRDCs.

First, DOD has adopted criteria for identifying an FFRDC's core work effort, defined as work that (1) is consistent with the FFRDC's purpose, mission, capabilities, and core competencies and (2) requires a special relationship to exist between the FFRDC and its sponsor. DOD directed sponsors to review the workload of their FFRDCs and identify work that should be transitioned out of the FFRDC and acquired competitively. According to the Under Secretary of Defense (Acquisition and Technology), sponsors had identified about \$43 million in noncore work being performed at the FFRDCs; this represents about 4 percent of the planned \$1.2 billion in fiscal year 1996 funding. This noncore work is currently being transferred out of the FFRDCs. While the core work criteria seek to clarify what tasks are appropriate for an FFRDC, the need for a task to be performed by an organization having a strategic relationship with the sponsor is a key element of the criteria. Thus, applying the criteria requires making judgments about the relative effectiveness of various sources for work in the absence of full information on capabilities, which open competition would provide. Sponsors' implementation of the DOD criteria, therefore, may eventually prove unsatisfactory to critics who seek a simple and unambiguous definition of work appropriate for the FFRDCs.

DOD has revised its FFRDC management plan to incorporate guidelines on diversification by FFRDC parent corporations into non-FFRDC work. The guidelines provide that parent corporations may accept non-FFRDC work subject to sponsor review for compliance with criteria that requires that the work, among other things, (1) is in the national interest, (2) does not detract from performance of FFRDC work, and (3) does not give rise to real or perceived conflicts of interest. The management plan does not provide for DOD-level officials to review or approve such work, but provides sponsors the opportunity to exercise greater control over the non-FFRDC work parent corporations undertake. The plan's ultimate effectiveness in alleviating concerns about parent corporations' diversification will depend on the quality and thoroughness of sponsor reviews of proposed non-FFRDC work.

DOD's revised management plan also clarifies that contracting officers must consider demonstrated needs in determining management fees and incorporates guidelines defining legitimate needs. The plan's guidelines (1) move allowable costs out of fee and (2) establish consistent policies on providing fees to cover costs not reimbursable under the contract that the FFRDC can demonstrate are needed for its successful operation. If effectively implemented, these actions should help to resolve many of the long-standing concerns over FFRDC use of management fees. Since much of fee is used for normally allowable independent research costs, moving independent research out of fee will substantially reduce fee and subject these research costs to review and oversight with appropriate principles for determining costs under contracts with educational institutions or nonprofit organizations. Defining ordinary and necessary—but unallowable—business expenses, which may be covered by fee, remains a more challenging issue. DOD's management plan does not provide examples of ordinary and necessary expenses that fee may properly be provided to cover. Consequently, we believe debate will continue on whether fee can be used for such items as personal expenses for company officers, entertainment, and new business development.

Finally, the advisory panel the DSB Task Force recommended has been established. In late 1995, six individuals—who are either DSB members or consultants—were appointed to the panel, which has been constituted as a task force of the DSB. The panel's charter calls for the members to review and advise DOD on the management of FFRDCs by

- reviewing guidelines for the appropriate scope of work, customers, organizational structure, and size of the FFRDCs;

Appendix I
Issues Relating to the Management of
DOD-Sponsored FFRDCs

- overseeing compliance with DOD's FFRDC management plan;
- reviewing sponsors' management of FFRDCs;
- reviewing the level and appropriateness of non-DOD and nonsponsor work performed by the FFRDCs;
- overseeing the comprehensive review process; and
- performing selected FFRDC program reviews.

In January 1996, the panel began a series of fact-finding meetings at the FFRDCs, which were attended by DOD sponsor personnel and FFRDC officials. Representatives of our office attended the panel's initial fact-finding meetings and observed that the members appeared to approach their task with the utmost seriousness and challenged the conventional wisdom by asking tough questions of both DOD and FFRDC officials. DOD anticipates that the panel will submit its first report in the summer of 1996.

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Information on DOD's FFRDCs

DOD currently sponsors 11 FFRDCs operated by 8 parent organizations. Table III.1 provides information on each FFRDC, including the parent organization, primary sponsor, DOD funding, and members of technical staff (MTS)¹ provided for fiscal year 1995.

Table III.1: Information on DOD's FFRDCs (fiscal year 1995)

Dollars in millions

FFRDC	Parent organization	Primary sponsor	Obligations	MTS
Systems engineering and integration centers				
Aerospace	The Aerospace Corporation	Air Force	\$335	1,910
MITRE C ³ I	MITRE Corporation	Assistant Secretary of Defense (C ³ I)	374	2,109
Subtotal			\$709	4,019
Studies and analyses centers				
Arroyo Center	RAND	Army	20	99
Project AIR FORCE	RAND	Air Force	24	112
National Defense Research Institute	RAND	OSD	19	105
Center for Naval Analyses	The CNA Corporation	Navy	47	238
IDA—Studies and Analyses/Operational Test and Evaluation Center	IDA	OSD	68	372
Logistics Management Institute	Logistics Management Institute	OSD	29	166
Subtotal			\$207	1,092
Research and development laboratories				
Lincoln Laboratory	Massachusetts Institute of Technology	Air Force	275	1,017
Software Engineering Institute	Carnegie-Mellon University	Defense Advanced Research Projects Agency	29	170
IDA—Communications and Computing	IDA	National Security Agency	33	142
Subtotal			\$386	1,329
Total			\$1,253	6,440

Note: C³I, command, control, communication, and intelligence; OSD, Office of the Secretary of Defense; and IDA, Institute for Defense Analyses.

Source: OSD.

¹MTS include the direct professional labor of scientists, engineers, researchers, mathematicians, analysts, economists, and others who perform professional-level technical work. MTS is defined as 1,810 hours of full-time professional effort; MTS does not include subcontracted effort.

Comparison of FFRDCs' Former Scope of Work Descriptions and Core Competencies

FFRDC	Scope of work	Core competencies
Aerospace	<ul style="list-style-type: none"> • Advanced systems architecture; concept analysis and planning; research, development, test, and evaluation; experimentation; and systems engineering and integration. • Mission-oriented investigation and experimentation. • Multiprogram systems engineering. • Foreign technology support. • Technical support, recommendations, and reviews. • Technical analysis, support, evaluation, and review in the field of U.S. national security space systems. • Long-range planning, systems analysis, and comparison studies, including technical risk management, cost, and schedule assessments. 	<ul style="list-style-type: none"> • Launch certification. • Systems of systems engineering. • System development and acquisition. • Process implementation. • Technology application.
MITRE C ³ I	<ul style="list-style-type: none"> • Systems research and planning. • System design. • Technical management. • Selected fields of research and experimentation, including navigation, detection, surveillance, identification, threat evaluations, warning, weather, and intelligence. 	<ul style="list-style-type: none"> • Systems of systems engineering. • Systems development and acquisition. • Process implementation. • Technology application. • Architectures and interoperability.
Arroyo Center	<ul style="list-style-type: none"> • Geopolitical environment and its effects on the Army. • Implications of the external threat environment. • Research in strategy, military planning, and regional security. • Restructuring initiatives designed to make the Army more efficient. • Alternative technology applications and technical strategies. • Force composition, size, and operational concepts. • Interactive modeling and simulation capability. • Initiatives and designs for the Army of the future. • Logistics, sustainment, and redesign initiatives. 	<ul style="list-style-type: none"> • Force development and technology. • Personnel and training. • Military logistics. • Strategy and doctrine.
Project AIR FORCE	<ul style="list-style-type: none"> • Strategy, doctrine, and force structure. • Force modernization and employment. • Resource management and systems acquisition. 	<ul style="list-style-type: none"> • Strategy and doctrine. • Force development and application. • Resource management.
National Defense Research Institute	<ul style="list-style-type: none"> • Research, studies, and analyses in areas such as international security and defense strategy, acquisition and technology policy, and forces and resources policy. 	<ul style="list-style-type: none"> • International policy and defense strategy. • Forces and resources policy. • Technology and acquisition policy. • Research integration.

(continued)

**Appendix IV
Comparison of FFRDCs' Former Scope of
Work Descriptions and Core Competencies**

FFRDC	Scope of work	Core competencies
Center for Naval Analyses	<ul style="list-style-type: none"> • Geopolitical security environment. • Roles, missions, and concepts of operations. • Force planning and evaluation. • System requirements. • Fleet tactics and capabilities. • Joint space and electronic warfare/command, control, communication, computers, intelligence, and information. • Cost and operational effectiveness analysis. • Research, development, and acquisition. • Infrastructure. • Personnel. • Medical. • Training. • Readiness, maintenance, and logistics. • Modeling and simulation. 	<ul style="list-style-type: none"> • Operations analysis. • System requirements and acquisition. • Resource analysis. • Program planning. • Policy, strategy, and doctrine.
IDA-Studies and Analyses/Operational Test and Evaluation Center	<ul style="list-style-type: none"> • Alternative technology applications and technical strategies. • Applications of advanced computing and information systems. • Evaluations of systems proposed for prototyping, development, and procurement. • Assessment of test and evaluation plans and results. • Exploitation of distributed, interactive simulation. • Force composition, size, and operational concepts. • Costs of defense programs, forces, and supporting infrastructure as well as analyses of acquisition procedures and methods. • Research in strategy—military planning, regional security, and related defense policy and management. • Evaluations of the readiness and performance of systems, forces, and military organizations, including training and support issues. • Implications of dual-use and international technology. • Joint and allied interoperability standards. 	<ul style="list-style-type: none"> • Systems evaluations. • Technology assessments. • Force and strategy assessments. • Resource and support analyses.
Logistics Management Institute	<ul style="list-style-type: none"> • Broad range of policy, managerial, and technological issues in acquisition, logistics, and force management. 	<ul style="list-style-type: none"> • Materiel management. • Acquisition. • Operational logistics. • Facilities and environment. • Force management.
Lincoln Laboratory	<ul style="list-style-type: none"> • Ballistic missile defense. • Communications. • Space surveillance. • Air defense. • Surface surveillance. • Advanced electronics technology. 	<ul style="list-style-type: none"> • Ballistic missile defense. • Communications. • Space surveillance. • Air defense. • Surface surveillance. • Advanced electronics technology.
Software Engineering Institute	<ul style="list-style-type: none"> • Technology transition. 	<ul style="list-style-type: none"> • Software engineering and supporting software technology. • Technology transition.

(continued)

Appendix IV
Comparison of FFRDCs' Former Scope of
Work Descriptions and Core Competencies

FFRDC	Scope of work	Core competencies
IDA-Communications and Computing	<ul style="list-style-type: none">• Long-term research on mission-critical problems confronting the sponsor.• Difficult operational problems of immediate importance associated with cryptomathematics and cryptocomputing.	<ul style="list-style-type: none">• Cryptologic mathematics.• Computing sciences.• Basic communications theory.

Comments From the Department of Defense



DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
3030 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3030



27 JUN 1996

Mr. David E. Cooper
Director, Acquisition Policy, Technology,
and Competitiveness Issues
National Security and International Affairs Division
U.S. General Accounting Office
Washington D.C. 20548

Dear Mr. Cooper:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "FEDERALLY FUNDED R&D CENTERS: Issues Relating to the Management of DoD-Sponsored Centers," dated May 30, 1996 (GAO Code 705084/OSD Case 1163).

The DoD generally concurs with the draft report and is particularly encouraged by the report language that reads: "As stated in our March 6, 1996 testimony, we believe these initiatives will move DoD's management of FFRDCs in a positive direction." The Department appreciates the GAO's recognition of DoD efforts to improve management of its Federally Funded Research and Development Centers (FFRDCs). However, while the DoD agrees it is too early to tell how effectively these initiatives will address long-standing concerns regarding use of FFRDCs, the Department is somewhat concerned the overall tone of the report unnecessarily speculates they may be insufficient to correct past problems.

Additionally, there is an issue that needs clarification. The DoD believes the report may be misleading in its brief discussion of the MITRE Corporation's (MITRE) division. The report language suggests that DoD required MITRE to divide into two corporations. That is not the case. The decision was made by MITRE's Board of Trustees after DoD rejected a MITRE proposal to establish an affiliated organization to handle commercial and expanded non-FFRDC work. Upon notification by the Chairman of the MITRE Board of Trustees of its plan to divide the corporation, DoD generally concurred with the direction of the plan and formally expressed the Department's position that any cost recovery and distribution of assets and liabilities be legally appropriate, justified and subject to audit by the Defense Contract Audit Agency (DCAA).

Thank you for the opportunity to respond to the draft report.

Sincerely,

Anita K. Jones



Major Contributors to This Report

National Security and
International Affairs
Division, Washington,
D.C.

Charles W. Thompson
Erin Slonaker Noel
Maria Boyreau

Boston Field Office

Monty Peters

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