

# CRS Report for Congress

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## Department of Homeland Security: Issues Concerning the Establishment of Federally Funded Research and Development Centers (FFRDCs)

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### Summary

Federally Funded Research and Development Centers (FFRDCs) were first established during World War II to provide specific defense research and development (R&D) capabilities that were not readily available within the federal government or the private sector. The federal government currently operates 36 FFRDCs. Title III of the Department Homeland Security (DHS) Act (P.L. 107-296) calls for the creation of one or more FFRDCs, including a Homeland Security Institute. On September 10th, the DHS released a "Sources Sought" notice requesting that contractors indicate their interest in competing to operate an FFRDC for DHS. Those responding must include a 400 words, or less, qualification statement by October 30<sup>th</sup>. DHS plans to release a formal request for proposal, for the FFRDC, before the end of this year. In the past several years, some congressional and non-congressional critics have questioned the use of FFRDCs, including the continuing need for such Centers, diversification into areas beyond the Centers' original missions, and oversight of each FFRDC's activities by its sponsoring agency. This report will be updated to reflect most recent events.

### Background

FFRDCs are not-for-profit organizations which are financed on a sole-source basis, exclusively or substantially by an agency of the federal government, which are not subject to Office of Personnel Management regulations. They operate as private non-profit corporations, although they are subject to certain personnel and budgetary controls imposed by Congress and/or their sponsoring agency. Each Center is administered, through a contract with the sponsoring federal agency, by either an industrial firm, a university, or a nonprofit institution. Center personnel are not considered federal employees, but rather employees of the organization that manages and operates the center. FFRDCs were established by the federal government during and immediately following World War II. For various reasons, the federal government was not able to attract the top

scientific and technological talent due to lower pay than in the private sector and slow hiring procedures necessary to meet its broad R&D requirements. Because FFRDCs are not allowed to compete for federal or private sector contracts, government officials have often asserted they are free from conflict of interest, and in a better position to protect classified and/or proprietary information.

There are four categories of FFRDCs: research laboratories, R&D laboratories, study and analysis centers, and systems engineering/systems integration centers (**see table**). A **research laboratory** is usually limited to basic and applied research that includes efforts directed towards the solution of specific problems, but short of engaging in major development related activities. An **R&D laboratory** engages in a variety of research activities, ranging from basic and applied research through the actual development of hardware for experimental or demonstration purposes. **Study and analysis centers** are involved in analytical activities in which very little hardware-related laboratory research or development is carried out. These study Centers were initially established to provide the Office of the Secretary of Defense, the three Services, and the Defense Advanced Research Projects Agency with help in solving organizational or operational problems. **Systems engineering/systems integration (SE/SI)** centers primarily provide systems engineering, R&D systems integration, and management support for definition and development of large technical systems. DOD established these Centers because it lacked certain in-house capabilities in large systems development, integration, and verification.

### Summary of Current FFRDCs

Agency	No.	Category of FFRDC	Type of Administration	No.
DOE	16	R&D laboratories 12	Univ. or Consortium	9
		Research laboratories 4	Industry	3
			Not-for-profit	4
DOD	10	R&D laboratories 3	University	2
		Study & Analysis Cntr. 5	Not-for-profit	8
		Systems Engin./Intergr. 2		
NSF	5	R&D Laboratories 4	Univ. or Consortium	4
		Study & Analysis Cntr. 1	Not-for-profit	1
FAA <sup>1</sup>	1	R&D Laboratory 1	Not-for-profit	1
NASA	1	R&D Laboratory 1	University	1
NIH	1	R&D Laboratory 1	Industry	1
NRC	1	R&D Laboratory 1	Not-for-profit	1
IRS	1	R&D Laboratory 1	Not-for-profit	1
<b>Totals</b>	<b>36</b>	<b>36</b>		<b>36</b>

1. Parts of the FAA's FFRDC also are identified as a study and analysis center and a systems engineering center.

Eight federal agencies currently operate a total of 36 FFRDCs. As indicated in the table, the Department of Energy (DOE) and the Department of Defense (DOD) together sponsor 26 FFRDCs, with DOE operating 16 Centers and DOD operating 10. The other 10 FFRDCs are operated by the National Science Foundation (NSF), the Federal Aviation Administration (FAA), the National Aeronautics and Space Administration (NASA), the National Institutes of Health (NIH), the Nuclear Regulatory Commission (NRC), and the Internal Revenue Service (IRS). Of the 16 DOE FFRDCs, nine are administered by a single university or a consortium of universities, three are managed by a private sector company, and four through a not-for-profit organization. DOD's 10 Centers include three R&D laboratories, five Study and Analysis Centers, and two Systems Engineering, Systems Integration Centers. Those 10 Centers are administered by two universities and eight not-for-profit organizations.

According to the National Science Foundation, in FY2000 the federal government spent \$77.4 billion on R&D, of which \$6.385 billion or 8.3% was obligated for FFRDCs<sup>1</sup>. Of the \$6.385 billion spent on R&D at FFRDCs, DOE accounted for \$3.897 billion or 61% of total federal FFRDC expenditures. This represents 57% of DOE's total federal R&D budget of \$6.063 billion, in FY2000. As a result, DOE is more reliant on FFRDCs to meet its research, development and acquisition requirements than any other federal agency. As a matter of comparison, NASA's only FFRDC, the Jet Propulsion Laboratory, received \$1.202 billion in FY2000, comprising 12.3% of the agency's \$9.755 billion R&D budget. DOD's 10 FFRDCs received \$783 million in FY2000, representing only 2.4% of its RDT&E budget.

## Establishing FFRDCs

The Office of Federal Procurement Policy (OFPP) Letter 84-1, and the Federal Acquisition Regulations (FAR) which implement the policy letter, are the two primary regulatory documents that govern the establishment of an FFRDC.<sup>2</sup> The purpose of the letter was to establish government-wide policies for the establishment, utilization, and evaluation of FFRDCs. In 1990, the Office of Federal Procurement issued regulations to implement the policy letter.<sup>3</sup> In general, the implementation regulations state that FFRDCs should not be established unless the agency cannot accomplish the activity in-house, through other government agencies, or through traditional procurement procedures. The regulation also states there should be sufficient work to be performed by the FFRDC; that cost controls should be established to protect the government; and that the parameters of the mission of the FFRDC are spelled out clearly enough to enable the differentiation between FFRDC responsibilities and the agency's non-FFRDC work.<sup>4</sup>

To establish an FFRDC, an agency must follow the guidelines of the OFPP. According to the National Science Foundation, once the agency implements the OFPP guidelines, the new FFRDC should have the following characteristics: (1) its primary

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<sup>1</sup> National Science Foundation, *Federal Funds for Research and Development: Fiscal Year 2000, 2001, and 2002*, v. 43 (NSF 02-321, p. C-9).

<sup>2</sup> 49 Federal Register 14462, April 11, 1984.

<sup>3</sup> 55 Federal Register 3885, Feb. 1990. These regulations are codified in FAR 35.017.

<sup>4</sup> OFPP Policy Letter 84-1, section 6. See, also FAR 35.017-2.

activities should include: basic research, applied research, development, or management of research and development; (2) it is a separate operational unit within the parent organization or is organized as a separately incorporated organization; (3) it performs actual R&D or R&D management either upon direct request of the federal government or under a broad charter from the federal government, but in either case under direct monitoring by the federal government; (4) it receives its major financial support (70% or more) from the federal government, usually from one agency; (5) it has, or is expected to have, a long-term relationship with its sponsoring agency (usually 5 years, with a review of the center's progress conducted by the sponsoring agency during the third year of the agreement); (6) most or all of its facilities are owned by, or are funded under contract with, the federal government, (7) it has an average annual budget (operating and capital equipment) of at least \$500,000; and (8) when renewing the sole-source contract, the sponsoring agency is required to determine if it still needs to sponsor an FFRDC or if the work could be done in a federal facility, or through a traditional private sector contract.<sup>5</sup>

To minimize conflicts of interest, Centers are established as not-for-profit entities that cannot compete with for-profit companies for additional government contracts and are not allowed to produce and market commercial products. As a result, government officials argue that FFRDCs are allowed access to key government officials and highly sensitive data from industry and government sources. Such privileged access enables the Centers to address complex long-term problems with a high degree of objectivity based on their restrictions concerning selling products to the government, or joining forces with those who do, while remaining outside of the government itself. While Centers are not-for-profit entities, they are allowed to charge the government fees above and beyond the cost of carrying out their responsibilities. Some Centers charge fees to cover ordinary and necessary costs of doing business that are not otherwise reimbursable, but that the government recognizes must be incurred. These fees can also be used by an FFRDC to conduct independent research. The FAR acknowledges the legitimacy of such fees.<sup>6</sup>

## DHS FFRDCs

Within Title III, Science and Technology in Support of Homeland Security, of the Homeland Security Act (P.L.107-296) there are two provisions that call for the establishment of FFRDCs. Section 305 of the Act states that “the Secretary, acting through the Undersecretary for Science and Technology, may establish or contract with one or more FFRDCs to carry out other responsibilities of the Act, including the coordination and integration of the agency’s extramural and intermural research programs.”<sup>7</sup> Section 312 directs the Secretary of DHS to establish an FFRDC known as the Homeland Security Institute. According to the legislation, the Institute, among other things, “should conduct systems analysis, risk analysis, and simulation and modeling to determine vulnerability of the Nation’s critical infrastructure.”<sup>8</sup> However, the legislation

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<sup>5</sup> *Federal Funds for Research and Development*, p. 8 & 9.

<sup>6</sup> *Ibid.* Office of Technology Assessment, OTA-BP-ISS-157, p.6, FAR 35.017.

<sup>7</sup> Homeland Security Act of 2002, P.L. 107-296, SEC. 305. Federally Funded Research and Development Centers.

<sup>8</sup> Homeland Security Act of 2002, P.L. 107-296, SEC. 312. Federally Funded Research and  
(continued...)

also states that “ the Institute shall terminate three years after the effective date of this Act.” Some have raised concerns that this provision could make it difficult for DHS to recruit the best people for this Center.

This legislative language provides the Secretary of Homeland Security with the authority the agency needs to establish multiple FFRDCs, as long as the Department complies with OFPP Letter 84-1, and the implementing FAR 35.017-2. Once these requirements have been met, the DHS can develop a request for proposals to establish one or more FFRDCs. It should be noted that the Competition in Contracting Act (CICA) permits the government to use sole-source procedures to establish or sustain an FFRDC. Proponents of this practice contend this allows the government to select the highest quality bid, rather than the lowest cost bid that applies to traditional federal procurement actions. However, to help control costs, Congress can set ceilings on the total annual spending and/or established personnel levels for the Center. In addition to universities and private sector firms, existing FFRDCs can also compete to operate and manage a DHS sponsored FFRDC, *if* the mission of the proposed FFRDC is similar to the existing FFRDC. FFRDCs operate under a five year contract, with a review of the Center’s performance by the sponsoring agency after the third year of operation. This review is to determine if the FFRDC should be renewed for another 5 years, re-competed as an FFRDC, abolished, or decertified as an FFRDC while continuing to operate as an independent non-profit organization.

Once the DHS selects the organization that will administer and operate an FFRDC, the Board of Trustees for the FFRDC will establish operating procedures, and select the Director of the FFRDC.<sup>9</sup> While the sponsoring agency has some input in the selection of the Center’s Director, the Board of Trustees is ultimately responsible for selecting the Director of the FFRDC. The Director is then responsible for hiring the remainder of the Center’s personnel who, like the Director, are employees of the organization that operates the FFRDC, not the sponsoring federal agency. The primary objective of this unique arrangement between the sponsoring agency and the Center is to help ensure the independence of the Center while concomitantly establishing a long-term, close partnership relationship, as opposed to the “arms length” required with for-profit federal contracts. Further, the personnel policies allow the FFRDC to rapidly employ, if necessary, new scientific and technical expertise that are difficult to recruit, sustain, and manage through the federal civil service system.<sup>10</sup>

## Potential Congressional Issues

For many years FFRDCs have attracted the attention of Congress. In their early years of operation, Congress’ primary concerns regarding FFRDCs centered around the growing

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<sup>8</sup> (...continued)  
Development Centers.

<sup>9</sup> If the DHS establishes a new FFRDC, rather than utilizing an existing Center, the new FFRDC can officially establish itself as an independent not-for-profit entity, chartered in the state where it was originally established, with its own Board of Trustees.

<sup>10</sup> Department of Defense, Federally Funded Research and Development Centers, U.S. Congress, Office of Technology Assessment, OTA-BP-ISS-157, June 1995, p. 8.

number of Centers, cost to the government, insulation from the competitive environment, and the quality of products. More recently, congressional concerns have focused on the continuing need for FFRDCs, diversification into areas beyond the Centers' original mission, and each sponsoring agency's oversight of its FFRDC's activities.

Public sector advocacy groups, such as the Professional Services Council (PSC), have pointed out that the nation's scientific, engineering, and technological capabilities have increased dramatically since FFRDCs were first introduced in the late 1940s. Specifically, PSC contends that, given that the private sector has developed significant capabilities to perform studies and analysis and systems-engineering and integration work, it seems logical that this work could be performed in the private sector. However, proponents of FFRDCs argue that the responsibility of the proposed DHS FFRDC includes "the coordination and integration of the agency's extramural and intermural research programs" which they contend is ideal, since FFRDCs are not allowed to compete for federal contracts and are not allowed to develop commercial products. Finally it is unlikely that any of the DHS FFRDCs will be performing systems integration activities.

With the end of the Cold War and declining DOD R&D budgets, observers in the private and public sectors are concerned that FFRDCs might have diversified into areas beyond their originally defined missions. Some individuals inside and outside of Congress assert that this has already happened. Representatives from the PSC have also argued that these Centers have received a number of contracts from various federal agencies for which private service companies had originally competed. However, representatives from DOD and DOE have indicated that their respective FFRDCs have been asked to develop definitions of their core work for each Center. As a result of this exercise each agency has identified work that could be competed through a traditional procurement process.<sup>11</sup>

Some Members of Congress have expressed concerns about the adequacy of the oversight of many FFRDCs. In a General Accounting Office (GAO) report, prepared for the House Appropriations Subcommittee on Energy and Water, GAO stated that "Despite DOE's many reforms, our review of more than 200 audit and consulting reports issued since 1995 reveals that the department has persistent management weaknesses that have led directly to a wide range of performance problems, including major cost overruns and schedule delays in a variety of noteworthy projects."<sup>12</sup> To control cost and maintain mission focus at DOD's FFRDCs, Congress continues to mandate employee ceiling levels for each DOD Center. While these are legitimate congressional concerns, it is important to note that DOD and DOE FFRDCs employ thousands of people and have budgets in the hundreds of millions of dollars. In contrast, DHS FFRDCs are likely to be smaller Centers with initial employment levels ranging from 50-100 people, along with budgets ranging from \$15 million to \$30 million.

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<sup>11</sup> U.S. Department of Defense. Office of the Inspector General Contracting Practices for the Use and Operations of DOD-Sponsored Federally Funded Research and Development Centers, Rept. No. 95-048, Dec. 2, 1994, p. 11.

<sup>12</sup> DOE, Fundamental Reassessment Needed to Address Major Mission, Structure, and Accountability Problems, General Accounting Office, Rpt-Number 02-51, December 2001, p18.

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