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Report to the Chairman, Legislation and National Security Subcommittee, Committee on Government Operations, House of Representatives

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CONTRACT PRICING

Defense Contractor Contributions to the Software Productivity Consortium

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National Security and
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The Honorable John Conyers, Jr.
Chairman, Legislation and National
Security Subcommittee
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

As requested by the former Chairman of your Committee, we reviewed how selected defense contractors classified Independent Research and Development (IR&D) projects. Proper classification of IR&D projects is important because the government places a ceiling on the amount of IR&D costs that are reimbursed. Improper classification of IR&D costs can result in circumventing the ceiling and may result in excessive contract costs.

Results in Brief

We found that 14 defense contractors made contributions to the Software Productivity Consortium from 1985 to 1987 totaling about $28.6 million.[1] The consortium was established to develop new tools and techniques to enhance the productivity of software developers. All but one of the companies (United Technologies Corporation) charged their entire consortium contributions to overhead accounts other than IR&D. Our work raises questions about whether the activities of the consortium and member companies' contributions can be properly classified as IR&D.

Background

To maintain corporate profitability and growth, defense contractors must develop future products and services for potential government or commercial customers. The advanced technology necessary for this growth is generally achieved through contractors' IR&D efforts.

IR&D is contractor-initiated research and development not sponsored by or required in performing a contract. According to the Federal Acquisition Regulation (FAR), "development" involves the use of scientific and technical knowledge in the design, development, test or evaluation of potential new products or services or of improving existing products or services.

[1] The contractors allocated $22.5 million of the total to government contracts through charges to overhead.

When contractor development efforts are directed toward manufacturing or production materials, systems, processes, methods, equipment, tools, and techniques intended for sale, the FAR requires that such efforts be classified as IR&D. However, when contractor development efforts are directed at improving internal manufacturing and production capabilities and are not intended for sale, FAR requires such efforts be classified as manufacturing and production engineering costs.

IR&D and manufacturing and production engineering are viewed by the Department of Defense (DOD) as a necessary cost of doing business. Contractors are allowed to recover the cost of these activities as overhead expenses on negotiated contracts. However, the amount of IR&D costs contractors can recover is limited by ceilings[2] —either established by formula or negotiated in advance. IR&D costs incurred above the ceilings must be absorbed by the contractors.

In contrast, manufacturing and production engineering does not have a ceiling. Thus, if IR&D costs are improperly classified as manufacturing and production engineering, the IR&D ceilings are circumvented and the government can incur inappropriate contract costs.

Consortium Activities—IR&D or Manufacturing and Production Engineering

According to consortium documents, the consortium was established to develop new tools and techniques that can be used by the member companies[3] to enhance the productivity of software developers. In October 1985, counsel for the consortium told DOD that the member companies intended to treat their contributions to the consortium as manufacturing and production engineering and asked DOD to confirm that such classification was proper.

Counsel stated that members' contributions should be treated as manufacturing and production engineering because the consortium's efforts were technological improvements to enhance the production process and were not intended for resale.

[2]Ceilings include costs for IR&D as well as Bid and Proposal (B&P) costs. B&P costs are incurred in preparing, submitting, and supporting bids and proposals on potential contracts.

[3]Allied-Signal Aerospace Company; Boeing Company; Ford Aerospace and Communications Corporation; General Dynamics Corporation; Grumman Aerospace Corporation; Harris Corporation; Lockheed Missiles and Space Company; Martin Marietta Corporation; McDonnell Douglas Corporation; Northrop Corporation; TRW, Inc.; Science Applications International Corporation; United Technologies Corporation; and Vitro Corporation

In response, the Deputy Assistant Secretary of Defense (Procurement), in April 1986, told the Defense Contract Audit Agency (DCAA), Defense Logistics Agency, and military services that:

"The Office of the Under Secretary of Defense, Research and Engineering (R&AT) has determined that the general description of the work to be performed by SPC [Software Productivity Consortium] meets the definition of manufacturing and production engineering costs . . . . We have also been advised that the results of the work performed by SPC will be used only by the members of the consortium and there is no intent to license the technology to third parties. . . . The amounts of these costs that will be ultimately allowed will be determined in accordance with appropriate cost accounting standards and reasonableness criteria in the FAR."

During our review, the Deputy Assistant Secretary requested the Deputy Under Secretary of Defense (Research and Advanced Technology) to review the propriety of the April 1986 guidance and whether it should remain in force. On June 28, 1988, the Acting Deputy Secretary of Defense (Research and Advanced Technology) responded:

". . . we have again examined the request by the Software Productivity Consortium (SPC) concerning advice as to whether contributions from the member corporations can be treated as 'manufacturing and production engineering' expenses. . . . If the SPC is performing according to their stated purpose, then the work still falls under Manufacturing and Production Engineering Costs . . . and the guidance should remain in effect. Without a review of their efforts to date from legal and technical experts, we cannot say whether another costing criteria should be used. If such a review should become necessary, our office would be happy to assist with technical aspects of the review."

Circumstances Suggest Activities Are IR&D

We found a number of conditions that suggest the consortium's actual activities would more appropriately be classified as IR&D. For example, consortium legal documents recognize that member companies can expect to use technology resulting from the consortium's activities in developing their products or systems for sale. Specifically, the Technology Management and License Agreement between the consortium and its member companies allows for member companies' "development, manufacture, use and sale of products, systems or services based on or derived from any [Consortium] Developments." The agreement also recognizes "that such development, manufacture, use, and sale may compete with the operations of the other [Consortium members]."

Consortium literature and publications describing the organization's projects also consistently refer to member companies' development of defense and space systems—not improving the companies' internal

manufacturing and production processes. For example, an excerpt from the Software Productivity Consortium Magazine states:

"To meet the awesome technology challenges posed by projects such as the space station, space plane and shuttle, the aerospace industry needs to leverage technology and engineering principles to speed the software development process and improve product quality. . . . That's why leading companies in the aerospace and defense industries have banded together to form the Software Productivity Consortium; its goal—to develop the computer aided software engineering tools and techniques which will make dramatic productivity improvements in today's software development practice. The organization's technical program extends beyond R&D, calling for the creation of actual products and the transfer of these products, in actual use, to its members."

In addition, consortium documents describe a major emphasis on research activities. The consortium's Software Engineering Technology Division is described as the organization's "applied research arm." According to the consortium's Synopsis of Research Activities, dated July 1987, "The programs of the Software Engineering Technology Division are designed to provide the Consortium with a steady stream of research results to keep the Consortium's overall results at the leading edge of technology." The synopsis further states that the division's research will investigate issues having "a potentially significant impact on the products of the various Consortium members."

We also found that one consortium member company was performing work similar to the consortium's mission; namely, to shorten the software development cycle. In this case, the company's objective was "to gain new perspectives on development methods and techniques and to reduce software development time and costs by automating aspects of the development process." However, unlike the consortium's activities, the company classified its effort as IR&D.

We found no evidence that the consortium's activities were aimed at improving member companies' internal manufacturing and production capabilities.

Because of the technical nature of the consortium's activities, we requested advice and assistance from the DOD IR&D Technical Evaluation Group. Created in 1983, the group is composed of technical experts who are responsible for (1) establishing criteria and methodology for evaluating contractor IR&D programs and (2) assisting the DCAA and contracting officers in resolving IR&D cost classification issues.

The four-member group is chaired by a representative from the Office of the Deputy Under Secretary of Defense (Research and Advanced Technology) and includes a representative from the Army, Navy, and Air Force.

At our request, the group reviewed consortium project descriptions and other documents. The group unanimously concluded that the consortium's projects are IR&D because the efforts were aimed at allowing member companies to develop their own products or services for sale. The group found that none of the consortium's projects were directed toward manufacturing and production engineering.

DOD Should Review Activities of the Software Productivity Consortium

When the Deputy Assistant Secretary told the DCAA, Defense Logistics Agency, and the military services in April 1986 that the general description of the consortium met the definition of manufacturing and production engineering costs, the Deputy Assistant Secretary also stated that:

"Consideration is being given to establishing a responsible activity to determine that the future activities of SPC continue to technically qualify as manufacturing and production engineering costs."

However, as of June 15, 1989, DOD had made no reviews to determine whether the consortium's actual activities qualify as manufacturing and production engineering costs.

Recommendation

We recommend that the Secretary of Defense direct DOD personnel to (1) determine whether the Software Productivity Consortium's actual activities meet the FAR criteria for IR&D or manufacturing and production engineering and (2) whether member companies have properly classified their contributions to the consortium.

Objective, Scope, and Methodology

Our objective was to determine whether selected defense contractors properly classified IR&D projects. We did not evaluate the merits of the mission or activities of the Software Productivity Consortium, Herndon, Virginia. We performed our review at the Software Productivity Consortium and its member companies and DOD, Washington, D.C.

We obtained information from the Software Productivity Consortium and its 14 member companies who provided us detailed cost data on

their consortium contributions. We also obtained consortium legal documents, technical plans, and information on the consortium's activities. We interviewed officials at DOD and the consortium and its member companies. We did not obtain official agency comments on this report, but the matters contained in this report were discussed with officials from DOD and the Software Productivity Consortium.

Due to the technical nature of the projects we reviewed, we obtained advice and assistance from the DOD Technical Evaluation Group.

Our review was performed between August 1987 and June 1989 in accordance with generally accepted government auditing standards.

Copies of this report are being sent to the Secretary of Defense; the DOD Office of the Inspector General, Washington, D.C.; and the Software Productivity Consortium, Herndon, Virginia.

Staff members who made major contributions to this report are listed in appendix I.

Sincerely yours,

Frank C. Conahan
Assistant Comptroller General

Contents

Abbreviations

B&P	Bid and Proposal
DCAA	Defense Contract Audit Agency
DOD	Department of Defense
FAR	Federal Acquisition Regulation
IR&D	Independent Research and Development

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