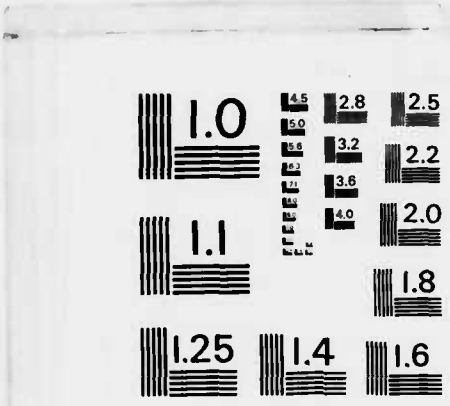
AD-A148 354 OUTLOOK FOR EXPANDING THE FEDERAL RESEARCH IN PROGRESS SYSTEM(U) GENERAL ACCOUNTING OFFICE WASHINGTON DC RESOURCES COMMUNITY AND ECONOMIC DEVELOPMENT DIV 1/1

UNCLASSIFIED 22 OCT 84 GAO/RCED-85-15 F/G 5/1 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

OCTOBER 22, 1984

B-215212

The Honorable Lloyd Bentsen
Vice Chairman, Subcommittee on
Economic Goals and Intergovernmental
Policy
Joint Economic Committee
Congress of the United States

Dear Mr. Chairman:

Subject: Outlook for Expanding the Federal Research in Progress System (GAO/RCED-85-15).

Your letter of February 8, 1983, requested that we conduct a study of the federal government's research and development (R&D) efforts in the areas of new materials, electronic devices, and biotechnology. ~~You also expressed~~ concern about the lack of a central source of information on federal funding for these technologies and requested that ~~we~~ study the system that federal agencies use to catalogue ongoing R&D projects. In addition, you asked us to provide information on how the Japanese and European governments promote the availability of this type of information.

After discussion with your office, ~~we~~ focused ~~our~~ review on the National Technical Information Service's (NTIS) Federal Research In Progress System (FEDRIP) and how the information systems of the major federal R&D agencies relate to FEDRIP. Our overall objective was to review the outlook for making FEDRIP a comprehensive source of information on government-funded R&D. A more detailed description of ~~our~~ objectives, scope, and methodology is contained in enclosure I. Information you requested on the federal government's R&D efforts in technological areas will be forwarded in a separate report.

Our principal findings are as follows:

(1) Policies for what data to collect, how to classify R&D projects, and how to disseminate such information are the responsibility of each R&D funding agency. FEDRIP is a voluntary reporting system to allow these agencies a public information outlet on research-in-progress.

(2) Currently, 28 of the 36 R&D funding agencies do not report to FEDRIP. Two major R&D agencies, which spend about 68 percent of the federal R&D budget--the National Science Foundation and the Department of Defense--are included in the 28 agencies which do not report.

(3) Agencies that elect to use the FEDRIP are not required to report funding data on individual research projects. Consequently, the Department of Agriculture, Department of Energy (DOE), National Aeronautics and Space Administration (NASA), and National Institutes of Health--the four major R&D agencies that report to FEDRIP--do not include funding data in their reports.

(4) Contributing agencies incur most of the costs for FEDRIP. Costs of expanding coverage of the system would be minimal for NTIS but would vary for the 28 agencies not now reporting.

(5) The need for agency-level manipulation and interpretation of data about ongoing research projects would not be eliminated by a central, comprehensive technical data base. Because of difficulties in searching technical data bases and the fact that single projects often encompass more than one research technology, specialized knowledge of each agency's R&D programs would continue to be essential to answer such questions as how much the federal government spends on particular technologies.

(6) Two previous studies have addressed central reporting of federal R&D projects. However, these studies conflict in views on the need for and benefits of a centralized data base versus an alternative network of decentralized data bases. Adequate information does not exist to determine whether one of those alternatives or a combination of the two is preferable.

In light of these facts, an expansion of FEDRIP could be difficult to achieve. To make FEDRIP a comprehensive R&D data base, all applicable agencies would have to report both project and funding information to NTIS. Such a change would not necessarily make it easier to determine overall federal funding levels for particular areas of technology.

WHAT FEDRIP IS

Current laws and administrative procedures leave it to each R&D agency to decide what data to collect, how to organize the data, and how to disseminate data on research-in-progress. The National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6602(a)(5)(c)) requires agencies to coordinate and exchange scientific data and technological findings developed under their programs, but no overall policies or procedures have been prescribed.

As part of this decentralized scheme, NTIS is a clearinghouse for scientific, technical, and engineering information (15 U.S.C. 1151-1157). It functions principally as an outlet

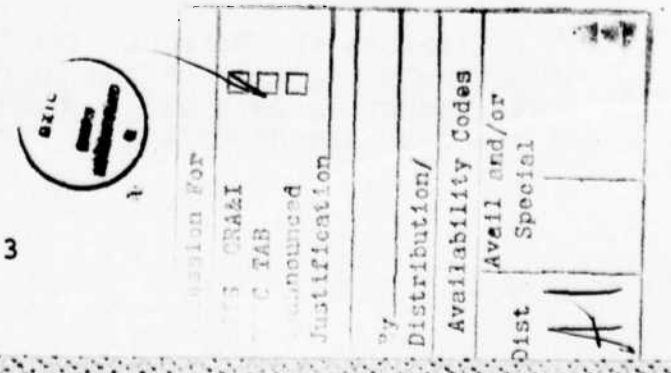
for federal reports and publications to the general public, other federal agencies, private industry, and state and local governments. NTIS products and services are also available to foreign governments and businesses. In November 1983, NTIS, through FEDRIP, began providing a public information outlet for data on federal research-in-progress as a service to R&D agencies.

FEDRIP is the only central system in the government for collecting and disseminating information about federally funded research-in-progress, but it is a voluntary system and does not include all the information necessary to determine total federal funding for particular technologies. Currently, eight federal agencies, comprising about 27 percent of the federal R&D budget, report to FEDRIP. (The federal R&D budget and FEDRIP coverage are summarized in enclosure II.) Required reporting items include project titles, abstracts of objectives and methods, start and estimated completion dates, principal investigators, and performing and sponsoring organizations. Funding data is an optional reporting item. (Reporting items for FEDRIP and the major R&D technical data bases are summarized in enclosure III.)

FEDRIP data are publicly available through commercial vendors. NTIS collects the information from participating federal agencies and provides the information to the commercial vendors who collect fees from the public based on a published schedule and pay a user fee to NTIS on the basis of sales. According to NTIS officials, FEDRIP is self-supporting, and NTIS receives no appropriated funds for administering it. Currently, private sector vendors are offering the data base under standard data base users agreements with NTIS. After a 1-year test period, in October 1984, the system's usage will be evaluated.

TWO OF SIX MAJOR R&D AGENCIES DO NOT REPORT TO FEDRIP

During our review, we collected information from six agencies which collectively are responsible for over 90 percent of the federal R&D budget. All of these agencies collect and disseminate information about ongoing R&D projects they fund, and four report data to FEDRIP. The Department of Agriculture, the National Institutes of Health, NASA, and DOE report data from their internal technical information systems in the necessary format and medium. Importantly, however, the National Science Foundation and Department of Defense--which spend 68 percent of the federal R&D budget--do not report to FEDRIP. (A summary of the data collected and disseminated by each of the agencies we reviewed is in enclosure III.)



The National Science Foundation does not report to FEDRIP because it lacks some of the necessary data in the format and on the electronic medium required. The Foundation's Management Information System Steering Committee decided in 1981 that changes to its information systems would be costly and would not benefit the users of the information--primarily the Foundation's program managers and colleges and universities. The Foundation's Deputy Assistant Director for Administration at that time estimated that it would cost about $250,000 and require three new full-time personnel to make the changes. Most of this increased cost would be for automating and building files of approximately 14,000 contract and grant abstracts per year. The indexing of the abstracts would be done by the program managers at a cost the Foundation believes would be significant.

The Department of Defense, which constitutes about 65 percent of the federal R&D budget, is capable of reporting to FEDRIP, but its policy on technological data dissemination is incompatible. The Secretary of Defense has decided that widespread public dissemination of information on defense-related research-in-progress increases national security risks even for unclassified projects. To reduce these risks, Defense has a policy of not submitting data to FEDRIP, controlling access to this information through the Defense Technical Information Center, and limiting access generally to government agencies and their contractors, grantees, and consultants with a "need to know."

FUNDING DATA IS NOT REPORTED TO FEDRIP BY MAJOR R&D AGENCIES

Of the four major R&D agencies that report to FEDRIP, none reports funding data. One of the agencies does not have the electronic technical capability to combine funding data from a management information system with project abstracts from a technical information system. Agencies that have the electronic capability do not report funding data to avoid possible misinterpretation when lists of projects are compiled from FEDRIP and funding figures are added up.

The National Aeronautics and Space Administration has a technical information data base that contains project abstracts--a requirement to report to FEDRIP. It, however, does not contain funding data; funding data is maintained in a separate management information system. Therefore, NASA does not report funding data to FEDRIP.

Although the National Institutes of Health, the Department of Agriculture, and DOE can correlate management information with their technical data bases, human interpretation and manipulation of the data are necessary to reveal possible duplication of

research efforts, identify gaps in specific knowledge, or properly allocate dollars for multifaceted research projects to produce an accurate report of total funding for particular technologies. For this reason--to avoid possible misinterpretation of aggregated funding levels--these agencies do not report project funding to FEDRIP.

COST OF EXPANDING FEDRIP VARIES BY REPORTING AGENCY

Enlarging FEDRIP without changing the way it operates and the services it provides would entail limited additional cost to NTIS but some additional costs for each of the 28 federal R&D funding agencies which do not now report. The Deputy Director of NTIS told us that NTIS's current operating costs for FEDRIP are minimal and simply enlarging coverage by requiring all R&D funding agencies to report would not add measurably to these costs. The cost of producing the data is borne by the contributing agencies and depends on the costs of extracting data from existing systems in the format required.

Actual costs for each agency would depend on how extensively existing data collection, classification, and dissemination practices would have to be changed. As an example, the National Science Foundation would have to create and automate a manual abstract file and develop an indexing system; it would also have to incur additional operating costs to maintain the indexing and abstracting functions. As mentioned previously, the Foundation's Deputy Assistant Director for Administration estimated that it would cost $250,000 and require three additional full-time personnel to report to FEDRIP in addition to the time required by the professional staff to index abstracts.

On the other hand, for agencies with extensive, computerized research-in-progress information systems--such as those which already report to FEDRIP--costs are apparently minimal. For example, the Chief of the Statistics and Analysis Branch of National Institutes of Health's Division of Research Grants told us that the cost of producing the tape of current projects required by FEDRIP is not specifically measured but is an insignificant addition to the over half-million dollar a year cost of operating its computerized data base. The cost of providing data to FEDRIP semiannually is estimated to be less than $100 per year. (Enclosure III also includes the R&D agency operating costs for the major R&D agencies' research-in-progress systems.)

INDIVIDUAL AGENCIES MUST INTERPRET R&D PROJECT DATA

Even if FEDRIP contained all ongoing projects and related funding levels, determining the total federal expenditure for selected technological subjects would still require consultation

with the individual R&D agencies. A determination of total funding for all R&D projects pertinent to particular technologies requires an identification of which projects are applicable and the funding level of each project. The first step, the selection of pertinent projects, involves specialized knowledge and judgment at the agency level to choose which projects are applicable to a given technology. For basic research, in particular, individual projects can have multiple and unforeseeable applications to such areas as engineering, information science, and other physical science subjects.

Furthermore, specialized knowledge of the subject matter and indexing terms assigned to the projects--to identify them in the data base--are necessary to develop a search strategy for compiling a list of pertinent projects. Each agency develops its own subject matter classification or index scheme. In the biomedical sciences, for example, the National Institutes of Health expend considerable effort maintaining the indexing terminology used for its technical data base for research-in-progress. A thesaurus of 11,000 technical terms has been built through the years and is updated semiannually. An average of 14 of these terms is assigned to each project abstract included in the data base, and each information search is based on these separate terms to help focus on the desired information. Projects can be grouped by terms for scientific or technical objectives, methods, or subject matter as well as organizational or programmatic relationships. NASA, DOE, and the Department of Agriculture have similarly complex sets of technical terminology for the subject matter their projects address.

BENEFITS DISCUSSED IN PREVIOUS REPORTS

Among the specific questions we addressed in our review was what benefits have been identified in previous studies of centralizing research-in-progress information. Of the two such studies we identified, one is detailed but dated and unpublished while the other is recent but far less detailed. These studies express conflicting views about the benefits of centralized reporting on research-in-progress. In 1969 the predecessor of the Office of Science and Technology Policy commissioned an examination on research-in-progress. The results were discussed in an unpublished report, entitled Government-wide Research and Development Reporting For Current Projects, by Peat, Marwick, Livingston & Co. It recommended coordinated, decentralized information exchange rather than a physically centralized data base. Specifically the report recommended that

--each agency should establish an information center, headed by an official responsible for facilitating interagency communication;

--the federal government should publish standards and procedures to ensure that the systems meet both agency and interagency needs; and

--there should be a communication center to refer users of the system to sources of information pertinent to their requests.

This study did not include a quantified cost/benefit analysis of this recommended network of R&D information centers, and we could not determine why it was never published.

More recently, the President's Private Sector Survey on Cost Control (Grace Commission) estimated that expanding the NTIS data base (FEDRIP) as part of other measures to control wasteful and redundant R&D projects would result in a net savings of $225.5 million over a 3-year period.

The Grace Commission report, approved January 15, 1984, recommended that

--the NTIS data base should be expanded within limits permitted by national security needs,

--contribution to and use of the data base by federal agencies should be made mandatory,

--every contract award and grant should require performers to supply material for the data base, and

--every sponsor of studies should document that a literature search has been performed and there is no duplication of past or current work.

The Grace Commission said that the need for this enlargement of FEDRIP is based on findings of possible duplication among R&D agency projects. Four possible examples of duplication were cited: (1) development of protective gear by the separate military services, (2) parallel research among several agencies on genetic engineering, (3) study of myotoxins among three separate agencies, and (4) lack of adequate coordination among 11 agencies in the Marine Pollution Program.

The Grace Commission report does not, however, discuss the earlier study or its alternative to a central data base--an electronic network of separate agency data bases. To acquire perspective on these alternatives, we discussed current methods for improving communication among R&D agencies with several officials responsible for R&D information policy.

These officials pointed out that agencies with common R&D subject matter interests or common constituencies exchange information about ongoing research projects. For example, the Department of Defense, DOE, and NASA conduct R&D largely in the physical sciences and engineering. They participate along with NTIS in an informal working group to consider common information policy problems and facilitate information exchange. Furthermore, officials representing DOE, NASA, and Defense told us that each agency had direct access to the others' data on research-in-progress. As an example of their coordination efforts, these officials provided us with the results of a recent jointly contracted study to increase consistency among the separate R&D reporting systems.

Three agencies included in our review with R&D interest in the life sciences through basic research in colleges and universities also share data about ongoing projects. The National Institutes of Health and the National Science Foundation, in particular, exchange data in the biomedical area. The Department of Agriculture's research interests are somewhat different, but on a case-by-case basis, information is requested from and sent to the Foundation. Furthermore, the Agriculture Current Research Information System has been publicly available through the Dialog Information Retrieval Service since 1976 as a separate data dissemination effort from FEDRIP. Numerous federal agencies, including the National Science Foundation and National Institutes of Health, have consulted this agriculture R&D data base, which is also included in FEDRIP.

Therefore, it appears that some federal agencies with common R&D interests and constituents are exchanging information or providing access to their R&D data bases but others are not. It is possible, however, that a central data base of ongoing projects--as the Grace Commission recommends--could improve interagency coordination. These benefits could also be derived from a network of decentralized data bases. Adequate information to determine which is the better choice does not now exist and an extensive study would be necessary to answer the question.

JAPANESE AND EUROPEAN DATA BASES

As a final matter, you asked us to comment on how the governments of Japan, England, France, and West Germany manage information about ongoing, government-funded R&D projects. We found that England, France, and West Germany do not have central data bases of ongoing, government-funded R&D. The Japanese government, on the other hand, operates a central data base of scientific and technological information. This data base is administered by the Japanese Center for Science and Technology Information, a corporation supervised by the Promotion Bureau of the Science and Technology Agency, which reports to the Prime Minister's Office. This data base contains indexed abstracts of

worldwide literature on scientific and technological subjects. Its purpose is to stimulate information dissemination of technological opportunities for industry.

The Japanese's research-in-progress data are not available electronically as FEDRIP's, but the data are disseminated annually in a publication entitled Current Science and Research in Japan. This publication lists about 1,600 project titles of ongoing research in 650 national and local governmental research institutes. Abstracts of the projects are not published.

AGENCY COMMENTS

The Department of Energy, National Science Foundation, and National Aeronautics and Space Administration provided oral comments on this report. Technical clarification and corrections have been made as suggested. Other than general concurrence, these agencies stated no overall position on the report's findings.

The Departments of Agriculture, Commerce, Defense, and Health and Human Services provided letters as attached in enclosures V, VI, VII, and VIII, respectively. Agriculture and Defense expressed agreement with the report's findings, and Agriculture stressed the importance of agency interpretation of funding data for R&D projects. The specific clarifications and changes suggested by each agency have been incorporated where appropriate.

- - - -

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time, we will send copies of this report to the Secretary of Defense, Secretary of Energy, Secretary of Agriculture, Administrator of NASA, Secretary of Commerce, Secretary of Health and Human Services, and Director of the National Science Foundation.

Sincerely yours,

Ralph Carlone for

J. Dexter Peach
Director

AN ANALYSIS OF THE OUTLOOK FOR EXPANDING THE FEDERAL RESEARCH IN PROGRESS SYSTEM

OBJECTIVES, SCOPE, AND METHODOLOGY

On February 8, 1983, Senator Lloyd Bentsen, Vice Chairman, Subcommittee on Economic Goals and International Policy, Joint Economic Committee, requested that we review the system that federal agencies use to catalogue R&D projects. (See enclosure IV.) After discussions with his staff, we focused our review on (1) the outlook for expanding a central data base administered by the National Technical Information Service for reporting to the public on federal research-in-progress, (2) what the costs and user fees to make this data base self-sustaining would be, (3) what benefits previous studies have found for centralizing information about ongoing R&D projects, (4) what the capabilities of the six major R&D funding agencies for collecting, classifying, and disseminating information on research-in-progress are, and (5) how the Japanese and European governments manage this type of information.

To determine how the federal government catalogues R&D projects, we reviewed applicable federal laws, policy statements, procedures, manuals, brochures, and related documents. We also interviewed officials responsible for establishing and monitoring policies and procedures affecting research-in-progress information at the National Technical Information Service and six major federal R&D funding agencies--the Departments of Agriculture, Energy, Defense, the National Aeronautics and Space Administration, the National Institutes of Health, and the National Science Foundation. We selected these six because they are responsible for over 90 percent of federal R&D expenditures and represent a cross-section of federal R&D concerns. As a group, they cover both life and physical sciences, basic as well as applied and developmental research, and university as well as industry and government-performed projects.

To determine the benefits cited in previous studies of central reporting on research-in-progress, we performed a literature review of studies thus identified. We also consulted the existing literature and interviewed people who have examined government's roles of other countries in managing science and technology information.

It was beyond the scope of our evaluation to analyze the actual usage, quality, or efficiency of operations for the 36 different federal agencies' information systems now disseminating information on federal research-in-progress. Also, we did not test the effectiveness or efficiency of FEDRIP which had been in operation less than 90 days at the time of our review. With these exceptions, we performed our work in accordance with generally accepted government auditing standards.

ENCLOSURE II

FEDERAL R&D BUDGET ESTIMATE (FY 84)

AND FEDRIP COVERAGE

Department/agency	FY 84 budget Est. ($000)	No. of projects in FEDRIP
Department of Agriculture	848,358	29,784
Department of Energy	4,516,840	4,279
Transportation Research Board	(a)	3,347
Geological Survey	136,037	472
National Aeronautics and Space Administration	2,462,500	595
National Bureau of Standards (NBS)	77,951	187
National Institute of Health (NIH)	4,240,193	23,549[b]
Occupational Safety and Health Administration (OSHA)	5,700	239
Veterans' Administration	159,800	11,574
Department of Commerce (except NBS)	156,310	-
Department of Defense	29,735,527	-
Department of Education	126,251	-
Department of Health and Human Services (except NIH)	581,611	-
Department of Housing and Urban Development	27,172	-
Department of Interior (except Geological Survey)	191,753	-
Department of Justice	23,726	-
Department of Labor (except OSHA)	13,895	-
Department of State	1,608	-
Department of Transportation	519,956	-
Department of Treasury	16,426	-
Advisory Commission on Intergovernmental Relations	2,036	-
Agency for International Development	206,502	-
Consumer Product Safety Commission	471	-
Environmental Protection Agency	207,731	-
Federal Emergency Management Agency	1,002	-
Federal Communications Commission	13,000	-
Federal Home Loan Bank Board	3,103	-
Federal Trade Commission	1,688	-
General Services Administration	1,826	-
International Trade Commission	4,385	-
Library of Congress	6,023	-
National Science Foundation	1,240,465	-
Nuclear Regulatory Commission	199,740	-

[a]A quasi-governmental organization associated with the National Academy of Sciences which receives no direct appropriation. Not counted as a federal agency.

[b]An additional 1,839 research projects supported by other Public Health Service agencies were also reported from the NIH system.

ENCLOSURE II

Department/agency	FY 84 budget Est. ($000)	No. of projects in FEDRIP
Smithsonian Institution	63,618	-
Tennessee Valley Authority	78,399	-
U.S. Arms Control Agency	6,080	-
U.S. Information Agency	6,421	-
Total	45,496,998	71,704

Source: National Science Foundation (NSF-83-319) for budget;
NTIS internal report for number of projects.

AGENCY ONGOING R&D PROJECT DATA AVAILABILITY FROM TECHNICAL DATA BASES

Reporting items for technical data bases	USDA[a]	DOD[b]	DOE[c]	NASA[d]	NIH[e]	NSF[f]	NTIS[g]
Accession number	X	X	X	X			X
Project number	X				X		
Project title	X	X	X	X	X		X
Principal investigator	X	X	X		X		X
Parent institution	X	X	X		X		X
Responsible organization	X	X	X	X			X
Type of award	X	X	X				X
Funding amount		X					optional
Field of science	X	X	X	X	X		
Project abstract	X	X	X	X	X		X
Descriptive technical terms	X	X	X	X	X		X
Search scheme							
By data element category (above)	X	X	X	X	X		X
Controlled terms (thesaurus)	X	X	X	X	X		X
Uncontrolled key words	X	X	X		X		X
Dissemination/accessability							
General public, routinely	X		(h)	X	(h)		X
General public, by request	X			X	X	X	X
"Need-to-know"	X	X	X	X	X	X	X
Approximate annual operating costs ($million)	.850	24	16.8	5	.612	1.0	(i)

[a]Current Research Information System.
[b]Defense Remote On-line Technical Information System (includes Research Work Unit Information System).
[c]Remote Console Technical Information System (includes Research Projects Data Base).
[d]Science and Technology Information Data Base (includes Research & Technology Objectives and Plans).
[e]Computer Retrieval of Information on Scientific Projects.
[f]Management Information System has some of same reporting items as technical data base.
[g]Federal Research In Progress Information System (FEDRIP).
[h]Through NTIS/FEDRIP.
[i]NTIS absorbs the costs associated with aggregating and disseminating the data reported by the contributing agencies.

Source: GAO.

ENCLOSURE IV

ENCLOSURE IV

Congress of the United States

JOINT ECONOMIC COMMITTEE
(CREATED PURSUANT TO SEC. 5(a) OF PUBLIC LAW 304, 79TH CONGRESS)
Washington, D.C. 20510

February 8, 1983

The Honorable Charles Bowsher
Comptroller General
General Accounting Office
441 G Street, N.W.
Washington, D.C. 22441

Dear Mr. Bowsher:

As you may know, I have been interested in our Nation's research and development programs for a number of years. Recently, I have tried with very little success to determine precisely what the Federal Government is spending on specific new high technology options. Indeed, it appears that such detailed information is simply unavailable anywhere in a centralized fashion within our government. Yet, the pace of R&D in some emerging technologies, if indeed any is occurring, may bear significantly on future international trade prospects and domestic employment policies.

Could you have your staff complete a study detailing the degree to which the Federal Government is conducting R&D or funding R&D in the following fields? These are R&D fields, incidentially, which the Japanese government has chosen to subsidize quite heavily in hopes of developing major new industries for the next decade.

A. <u>New Materials</u>

1. High polymers technology involving high efficiency separation membranes.

2. High polymers technology involving conductive high polymers.

3. High polymers technology involving crystalline high polymers.

4. Fine ceramics technology.

5. Next generation metals technology involving high-performance crystal-controlled alloys.

6. Next generation metals technology involving composite materials.

ENCLOSURE IV

B. Biotechnology

7. Biotechnology involving mass cell cultivation.

8. Biotechnology involving bioreactors.

9. Biotechnology involving recombinant DNA utilization.

C. Electronic Devices

10. Electronic circuit technology involving super-lattice devices.

11. Electronic circuit technology involving three-dimensional circuit cells.

12. Electronic circuit technology involving elements with increased environmental resistance able to function, for example, inside auto engines and atomic reactors.

In addition, I would like for your staff to evaluate the system used to catalogue Federal R&D projects and recommend appropriate changes to improve its usefulness and efficiency. If you have any questions, please call me or have your staff contact George Tyler at 224-5171.

Thank you.

Sincerely,

Lloyd Bentsen
Vice Chairman
Subcommittee on Economic Goals
and Intergovernmental Policy

ENCLOSURE V

DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

AUG 3 1984

REPLY TO
ATTN OF: 1540 (84-54F)

SUBJECT: GAO Draft Report RCED-84-121 dated July 23, 1984, Entitled "Outlook for Expanding the Federal Research in Progress System"

TO: J. Dexter Peach, Director
Resources, Community, and Economic Development Division
U.S. General Accounting Office

The following comments are submitted in response to the draft of the subject report on the outlook for expanding the Federal Research In Progress System:

PRINCIPAL FINDINGS

The Department of Agriculture concurs with the principal findings of the report and would like to reinforce the statement listed as item 5.

5) The need for agency-level manipulation and interpretation of data about ongoing research projects would not be eliminated by a central comprehensive technical database. Specialized knowledge of each agency's R&D programs would continue to be essential to answer such questions as how much the Federal Government spends on particular technologies.

Because of the nuances of subject matter searching of a technical database and the fact that single projects often encompass more than one research technology, it is impossible to automatically apportion or aggregate funding on mutually exclusive categories of research without detailed analysis. Responsible agencies must be given the opportunity to respond to questions relating to how much they spend on a particular research technology.

FUNDING DATA IS NOT REPORTED TO FEDRIPS BY MAJOR R&D AGENCIES

The Department of Agriculture has the electronic capability to correlate funding data to technical data and electronically report to FEDRIPS. However, funding data is not provided because of possible misinterpretation of funding compilation aggregated from subject matter searches.

APPENDIX 3
REPORTING ITEMS FOR
TECHNICAL DATABASES

The Department of Agriculture reports both accession number and project number to FEDRIPS.

APPROXIMATE ANNUAL OPERATING COSTS

Annual operating costs for the Current Research Information System in FY 1984 will be $850,000 (.850 million).

Thank you for the opportunity to review and comment on this report.

ORVILLE G. BENTLEY
Assistant Secretary
Science and Education

ENCLOSURE VI

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Administration
Washington, D.C. 20230

AUG 6 , 1984

Mr. J. Dexter Peach
Director, Resources, Community, and
Economic Development Division
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

This is in reply to GAO's letter of July 23, 1984, requesting comments on the draft report entitled "Outlook for Expanding the Federal Research In Progress System" (GAO/RCED-84-121).

We have reviewed the enclosed comments of the Assistant Secretary for Productivity, Technology, and Innovation and believe they are responsive to the matters discussed in the report.

Sincerely,

Kay Bulow

Kay Bulow
Assistant Secretary
for Administration-designate

Enclosure

ENCLOSURE VI

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Productivity, Technology and Innovation
Washington, D.C. 20230
(202) 377-1984

AUG1 1984

Mr. J. Dexter Peach
Director, Resources, Community and
Economic Development Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

On behalf of Secretary Baldrige, we have reviewed the draft report entitled "Outlook for Expanding the Federal Research In Progress System" (GAO/RCED-84-121) and offer the following comments.

NTIS has named the data base as "Federal Research in Progress." We recommend that references to the data base use the acronym "FEDRIP." When the data base is discussed as part of a larger system, involving other data bases or information collection and dissemination activities, it would be proper to describe the whole as the "FEDRIP System."

FEDRIP data are publicly available through more than one commercial vendor, who pay use fees to NTIS. On page 3, paragraph 2, the first sentence should be revised to read: "FEDRIP data are publicly available through commercial vendors." In the same paragraph, line 5, the word "royalty" should be replaced by "use fee." Also in the same paragraph, the fourth sentence should be revised to read: "At present, private sector vendors are offering the data base under standard data base users agreements with NTIS."

Other changes that we recommend are as follows: On page 5, paragraph 2, line 6, the word "negligible" should be changed to "minimal." On page 8, paragraph 3, the following should be inserted as the fifth sentence: "This data base is also included in FEDRIP." On page 8, paragraph 4, the first sentence should be revised to read: "Therefore, it appears that some federal agencies with common R&D interests and constituents are exchanging information or providing access to their R&D data bases, but others are not." Appendix III, footnote 9 should be revised to read: "NTIS absorbs the costs associated with aggregating and disseminating the data reported by the contributing agencies."

We appreciate the opportunity to review this important draft report. We hope that you will find our comments helpful.

Sincerely,

D. Bruce Merrifield

ENCLOSURE VII

THE UNDER SECRETARY OF DEFENSE

WASHINGTON, D C 20301

RESEARCH AND
ENGINEERING

23 AUG 1984

Mr. Frank C. Conahan
Director
National Security and International
Affairs Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

In response to your letter of July 25, 1984 concerning "Federal Research In Progress System", our comments to your draft report are enclosed.

Sincerely,

James P. Wade, Jr.
Principal Deputy Under Secretary of
Defense for Research & Engineering

Enclosure

GAO DRAFT REPORT DATED JULY 25, 1984
(GAO CODE NO. 005702) OSD CASE NO. 6567

"OUTLOOK FOR EXPANDING THE FEDERAL RESEARCH IN PROGRESS SYSTEM"

*****

FINDINGS AND DOD COMMENTS

- FINDING A: Two Of Six Major Research And Development (R&D) Agencies, Including The Department of Defense (DoD), Do Not Report To The Federal Research-In-Progress System (FEDRIPS). GAO reported that while the National Technical Information Services' (NTIS) Federal research in Progress System (FEDRIPS) is the only central system for collecting and disseminating information about Federally funded research-in-progress, agencies report only on a voluntary basis. GAO found that two of six major R&D agencies--DoD and the National Science Foundation (NSF), which spend about 68 percent of the Federal R&D budget--do not report to the National Technical Information Service's Federal Research-In-Progress System. (pp. 1, 3, GAO Draft Letter Report)

  DOD COMMENT. DoD concurs.

- FINDING B: DoD Is Capable Of Reporting to FEDRIPS But Declines To Do So On National Security Grounds. GAO found that DoD is capable of reporting to FEDRIPS, but that this is incompatible with DoD policy on technological data dissemination. GAO reported that the Secretary of Defense has decided that widespread dissemination of information on Defense-related research-in-progress increases national security risks even for unclassified projects. GAO further found that, to reduce such risks, DoD follows a policy of not submitting data to FEDRIPS, controlling access to data through the Defense Technical Information Center, and limiting access to agencies and individuals with a "need to know." (p. 4, GAO Draft Letter Report)

  DOD COMMENT. DoD concurs.

- FINDING C: Extensive Study Is Needed To Determine Whether Central Data Base Is Needed. GAO found that Federal agencies with common R&D interests are exchanging information or providing access to their R&D data bases. GAO reported officials from the Department of Energy (DOE), DoD and the National Aeronautics and Space Administration (NASA) indicated that each agency had direct access to the other's data on research-in-progress. While it is possible that a central data base on ongoing projects--as recommended by the President's Private Sector Survey on Cost Control--

ENCLOSURE VII

could improve interagency coordination, GAO concluded that it is also possible to derive such benefits from a network of decentralized data bases. GAO further concluded that adequate information to determine which is the better choice does not now exist, and that an extensive study would be necessary to make that choice. (p.8, GAO Draft Letter Report)

DOD COMMENTS: DoD concurs.

ENCLOSURE VIII

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

AUG - 9 1984

Mr. Richard L. Fogel
Director, Human Resources Division
United States General Accounting
Office
Washington, D. C. 20548

Dear Mr. Fogel:

Thank you for the opportunity to review your draft report, "Outlook for Expanding the Federal Research in Progress System." Several technical comments were separately transmitted to your staff. Apart from these, the Department has no other comment to make.

Sincerely yours,

Bryan Mitchell
for Richard P. Kusserow
Inspector General

END

FILMED

1-85

DTIC