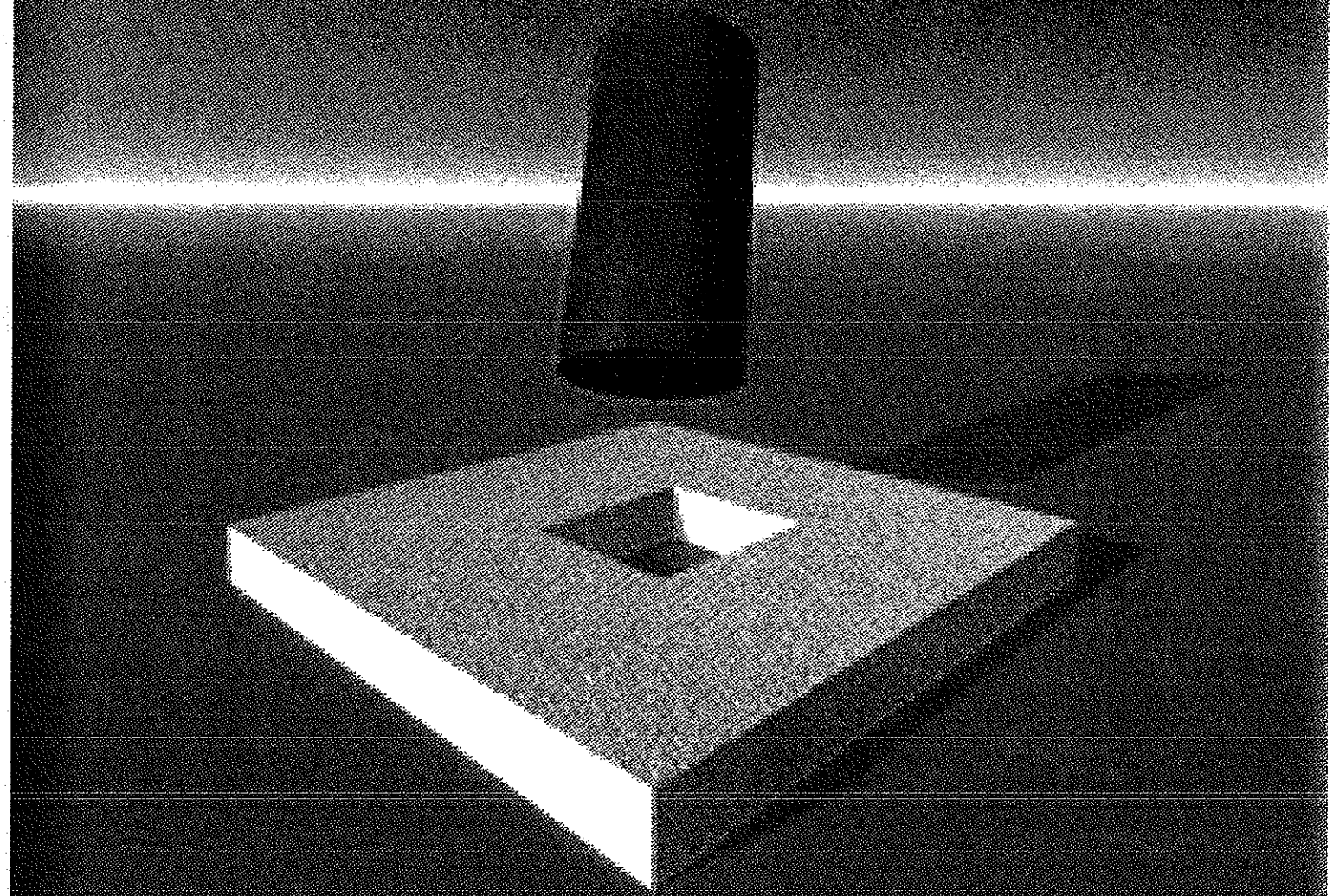
Technology Transfer Resource Guide

Science and industry working together to create solutions for today's problems



Produced by the

National Technology Transfer Center

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PREFACE

This book was developed by the National Technology Transfer Center (NTTC) in an effort to positively effect the success of commercializing U.S. federally funded technologies.

It is the goal of the NTTC to create partnerships between the federal labs, private sector, universities, and economic development organizations through the dissemination of information on the processes involved in technology transfer and commercialization.

These materials were originally developed for various training courses which the NTTC offers to its clients. Information on the courses offered by the NTTC can be found in the back of this book.

We are sure this manual will prove to be a useful resource guide for you and your organization. We will continue to expand and update these materials in order to assure that it is current and comprehensive. If there are important aspects of technology transfer and commercialization which you feel should be addressed in this book, please feel free to contact us. As always, we appreciate the input of those individuals working in the field of technology commercialization.

For more information on the services and training courses provided by the NTTC, please contact us at:

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SECTION B

GLOSSARY

Glossary

Active Mode of Technology Transfer: a person or small group of people takes personal responsibility to see that a social need is met or a specific useful technology is adapted to a need or market

Cooperative Research and Development Agreement (CRADA): is an agreement between one or more federal laboratories and one or more nonfederal parties to perform cooperative and mutually beneficial R&D

Copyright: protects original works of authorship fixed in any tangible medium of expression, including nondramatic literary works, works of the performing arts, works of visual arts, and sound recordings

Dual-Use Technology Transfer: the co-development of a technology by a defense and a nondefense organization

Federal Laboratory Consortium (FLC): an organization developed to serve as a liaison between individual federal laboratories and nonfederal entities interested in developing technologies

Intellectual Property: refers to any product of the human intellect, such as an idea, invention, expression, business method, industrial process, chemical process, etc., that has some value in our marketplace

Market Pull: drives the technology transfer process when existing firms seek better technologies to reduce their costs of production or to make marginal improvements in the quality of their existing products

National Technology Transfer Center (NTTC): established to aid in the dissemination of technology from federal laboratories to industry and commercial venues; created by Congress and funded by NASA and other agencies

Office of Research and Technology Applications (ORTA): assesses R&D projects for potential commercial applications; makes information on federal technologies available to state and local governments as well as private industry; provides a link to outside industry regarding R&D activities; and otherwise serves as the head of technology transfer activities within a federal laboratory

Passive Mode of Technology Transfer: The potential adopter of technology must search for suitable technologies by either contacting R&D performers or examining archives for the results of R&D

Patent Licensing Agreement (PLA): allows the other party to use the invention for his or her own purposes for a specified time and in exchange for a fee (royalty) to be paid to the patent holder

Patent: a grant or property right given by the government to the inventor; the patent gives the inventor the right to take action which excludes others from making, using, or selling the invention for a period of 17 years but does not automatically restrict infringement

Personnel Exchanges: provide an opportunity for federal lab engineers and scientists to receive an insider's look at external laboratories where new ideas, process improvements, enhancements, shortcuts, and long cuts can take place

Record of Invention and Disclosure Form: assists a federal employee in documenting and reporting an invention

Semiactive Mode of Technology Transfer: a search facilitator or "transfer agent" (ORTA) is added to the technology transfer system; this person helps users identify technical solutions and sometimes has the capability to help evaluate technologies

Spin-Off Technology Transfer: the transfer of technology originally developed by a defense organization for defense purposes to a nondefense organization that intends to apply the technology to nondefense or commercial purposes

Spin-On Technology Transfer: the transfer of technology originally developed by a nondefense organization for nondefense purposes to a defense organization that intends to apply the technology to defense purposes

Technology Transfer: the sharing of knowledge and facilities among federal laboratories, other federal activities, industry, academia, and state and local governments

Technology Push: drives the technology transfer process when an innovator sees an opportunity to profit from a technology that has little or no current market

Technology Reinvestment Project (TRP): stimulates the transition of the defense industry toward a growing, integrated, national industrial entity capable of providing the most advanced, affordable military systems and the most competitive commercial products

Trade Secrets: any information, design, device, process, composition, technique, or formula that is maintained as a secret and gives its owner a competitive business advantage

Trademark: applies to a word, symbol, or combination thereof which is used to identify its source; under trademarks, the owner of the trademark can exclude others from using the same or a similar mark on goods where it is likely to confuse the consumer as to the source of the goods

SECTION C

TECHNOLOGY TRANSFER LEGISLATION

Definition of Technology Transfer

Summary of Various Pieces of Technology Transfer Legislation

Overall Goal of Technology Transfer and Commercialization

U.S. Code Annotated, Title 15, Chapter 63, Commerce and Trade:

Federal Technology Transfer Legislation and Executive Orders

- 15 USC 3710, Utilization of Federal Technology
- 15 USC 3710a, Cooperative Research and Development Agreements
- 15 USC 3710b, Rewards of Scientific, Engineering, and Technical Personnel of Federal Agencies
- 15 USC 3710c, Distribution of Royalties Received by Federal Agencies
- 15 USC 3710d, Employee Activities
- Executive Order 12591

Federal Statutes

- 28 USC 1498, Patent and Copyright Cases
- 35 USC 200 et seq, Patent Rights in Inventions Made with Federal Assistance
- 18 USC 1905, Disclosure of Confidential Information Generally

Code of Federal Regulations

- 37 CFR, Chapter 4, Part 404, Licensing of Government Owned Inventions

WHAT IS TECHNOLOGY TRANSFER?

Introducing Technology Transfer

The concept of technology transfer is not all together new. As early as The 1958 Space Act, legislation was written with the purpose of transferring technology between the federal labs and the private sector. The Bayh-Dole Act of 1980, and the Stevenson-Wydler Act of 1980 laid the groundwork for the process. The 1986 Federal Technology Transfer Act opened the doors to research and development partnerships between federal labs and U.S. industry and subsequent legislation and Executive Orders have broadened their scope.

What has brought about this discussion of the concept of technology transfer? The answer to that question may be found in the following:

- Federally sponsored research and development is an enormous and underutilized resource as indicated by the following statistics:
  - — The United States has over 700 federal laboratories
  - — Federal laboratories are funded at over $24 billion per year (AUTM, Feb,1995, VI-2-Page 5).
  - — The government finances slightly less than 50 percent of all R&D in the United States (AUTM, Feb,1995, VI-2-Page 5).
  - — The government employs 1/6 of the nation's scientists (Science and Engineering Indicators, 1993).
  - — Historically, only five percent of on-the-shelf government inventions had been licensed for commercial application before the 1980 laws and legislation.

- The United States government funds more R&D than the governments of Japan, Germany, France, and England combined, but if this investment is not commercialized, the U.S. taxpayers do not benefit economically.

- Federal budget cuts will diminish the R&D funds available to laboratories. Also, government acquisition costs are driving agencies to seek partnerships for R&D which meet agency and civilian needs (dual use programs). As a result, the federal labs need to find alternative ways to leverage their research and development through alliances with industry. Successful commercialization benefits the agency, the laboratory, the scientists, U.S. industry, and most importantly, the U.S. taxpayer.

- The need for short term profits, downsizing, and the cost of conducting research are driving industry's reduction in basic R&D. Currently, the focus of private sector research is on applied R&D. By leveraging the resources at the federal labs and universities, private industry can maximize its research investments.

Defining Technology Transfer

There is no widely accepted definition of technology transfer. Technology transfer can mean different things to different people, but, generally speaking, technology transfer is **the sharing of knowledge and facilities among the following groups**:

- Federal laboratories
- Industry
- Universities
- Federal, state, and local governments
- Third party intermediaries

The concept of technology transfer as a practical matter becomes clearer when one understands what technology transfer is designed to accomplish. For instance, the purpose of a federal technology transfer program is to make federally generated scientific and technological developments accessible to private industry and state and local governments. These users are then encouraged to develop the technology further into new products, processes, materials, or services that will enhance our nation's industrial competitiveness or otherwise improve our quality of life.

WHY TRANSFER TECHNOLOGY?

It is widely understood that technology and innovation can help to:

- Improve living standards
- Increase productivity
- Generate new industries and employment opportunities
- Improve public services
- Create more competitive U.S. products in world markets.

By one estimate, from one-third to one-half of all U.S. growth has come from new technologies. Federal laboratories frequently make discoveries and advances in science and technology that could also be applied to commercial products. By transferring those discoveries and advances to the private sector, the federal laboratories are making an additional contribution to the economy and quality of life in this nation.

Federal Legislation

So that the federal laboratories may transfer and commercialize their technologies, Congress passed the **Stevenson-Wydler Technology Innovation** and **the Bayh-Dole Patents and Trademark Amendments Acts of 1980**.

These Acts have been amended since 1980, but they remain the base laws that govern federal technology transfer. They were designed to promote the commercialization of federally sponsored R&D through cooperation between the research community, industry, and state and local government.

Federal Technology Transfer Act

The Federal Technology Transfer Act (FTTA) of 1986, the most significant amendment to the Stevenson-Wydler legislation, was enacted to:

- Improve the flow of technologies with potential commercial application from the federal laboratories to the private sector.
- Empower each federal agency to give the directors of government-owned, government-operated (GOGO) laboratories the authority to enter into cooperative R&D agreements and negotiate licensing agreements for inventions made at the laboratories.

- Make technology transfer a responsibility of all federal laboratory scientists and engineers, requiring laboratory management to consider technology transfer activities in employee performance evaluations.
- Create a charter for the Federal Laboratory Consortium (FLC) for Technology Transfer.

Create royalty sharing with federal scientists and engineers.

Bayh-Dole Patents and Trademark Amendments Act of 1980

The passing of the Bayh-Dole Patents and Trademark Amendments Act facilitated partnerships in technology commercialization between university operated laboratories, government, and industry. It allowed universities, nonprofit organizations, and small businesses to retain certain rights related to inventions they developed under funding agreements with the government.

Impact of Bayh-Dole

- The amount of industry funds invested in university R&D has increased an incredible 160% since 1980.
- The number of patents being produced by universities has increased 500% since 1980. (Universities filed 230 patents in 1976 and 1,346 in 1991.)
- Universities have succeeded in balancing their educational and economic missions. (University publications have increased since the passage of the Bayh-Dole Act.)
- State governments are now targeting universities as engines for economic growth.
- The Act created the unequaled U.S. biotechnology industry. (The biotech industry is clustered around the major universities.)
- University R&D is responsible for the development of 44% of all new U.S. drugs and 37% of all new pharmaceutical processes.

A brief overview of all the key technology transfer legislative and executive actions is provided in the table on the following page. Pertinent sections of the United States Code as modified by these legislative and executive actions appear in this section.

Summary of Federal Technology Transfer Legislation

YEAR	NAME	KEY POINTS
1958	NASA Space Act	Created NASA and established the general direction of the U.S. space program
1980	Stevenson-Wydler Technology Innovation Act	Made technology transfer a mission of the federal government and established ORTAs
1980	Bayh-Dole Patent and Trademark Act	Allowed universities, nonprofit organizations, and small businesses to retain certain rights related to inventions they developed under funding agreements with the government
1984	Amendment to Bayh-Dole Patent and Trademark	Deleted term limitations on exclusive licenses; designated the Secretary of Commerce to determine "exceptional circumstances" when contractor rights might be overruled
1984	National Cooperative Research Act	Encouraged joint R&D ventures among competing private firms to enhance U.S. industrial competitiveness by allowing an exemption from treble damages in private antitrust legislation for registered ventures
1986	Federal Technology Transfer Act	Amended the Stevenson-Wydler Act to authorize CRADAs for GOGOs and formed the FLC for Technology Transfer
1988	Executive Order 12591	Required federal agencies to delegate authority to government-operated laboratories to enter into cooperative agreements. Provided authority to enhance the global trade position of the U.S.
1988	Omnibus Trade and Competitiveness Act	Established regional university-based Manufacturing Technology Centers for the transfer of advanced manufacturing techniques to small & medium-size firms

YEAR	NAME	KEY POINTS
1989	National Competitiveness Technology Transfer Act (NCTTA)	Amended the Stevenson-Wydler Act to establish technology transfer as a federal laboratory mission and permit CRADAs for GOCOs (government-owned, contractor-operated laboratory)
1991	American Technology Preeminence Act	Extended the FLC mandate through 1996, allowed the exchange of intellectual property between participants in a CRADA, and allowed laboratory directors to give excess equipment to nonprofit organizations as a gift
1992	Small Business Technology Transfer Act	Established the Small Business Technology Transfer Research (STTR) Program (See Technology Transfer Mechanisms module for information on STTR)
1995	National Technology Transfer and Advancement Act	Created Significant incentives for prompt commercialization of new technologies developed under a CRADA and established guidelines to expedite CRADA negotiations

A Win-Win Situation

In the current environment of decreasing budgets and less financial support available for federal R&D, technology transfer can supplement existing resources to federal laboratories. Dollars acquired through patent licensing agreements and cost shared R&D from private sector partners through cooperative agreements will:

- Illustrate the relevance of laboratories and R&D to the U.S. economy.
- Leverage government R&D expenditures.
- Reward laboratory staff through performance awards, royalties, or cash awards.
- Leverage federal lab R&D through cost shared research.
- Provide an opportunity to work with peer researchers.

Through technology commercialization, the federal laboratories can become a regional asset to the community and underscore their national importance. Federal

laboratory engineers and scientists can receive money through the licensing of their inventions.

Federal Policy

The underlying philosophy and approach are to derive national benefits from technology commercialization by capitalizing on recent scientific developments to promote the technical and economic growth of the United States. This means that federal agencies usually:

- Encourage dissemination of scientific and technical information, data, and know-how (Consistent with national security requirements).
- Allow federal laboratory personnel to participate in regional, state, and local programs designed to facilitate or stimulate the transfer of technology.
- Support and encourage joint R&D between industry, universities, and federal laboratories.
- Support and encourage the exchange of scientific and technical personnel between federal laboratories and academic, industrial, nonprofit, and state organizations.
- Have royalty sharing and other incentives for scientists and engineers whose R&D is commercialized.

Substantial responsibilities for technology transfer activities are assigned to the heads of laboratories.

LAWS AND REGULATIONS

Federal Technology Transfer Legislation and Executive Orders

- 15 USC 3710, Utilization of Federal Technology
- 15 USC 3710a, Cooperative Research and Development Agreements
- 15 USC 3710b, Rewards of Scientific, Engineering, and Technical Personnel of Federal Agencies
- 15 USC 3710c, Distribution of Royalties Received by Federal Agencies
- 15 USC 3710d, Employee Activities
- Executive Order 12591

§ 3710. Utilization of Federal Technology

(a) Policy

(1) It is the continuing responsibility of the Federal Government to ensure the full use of the results of the Nation's Federal investment in research and development. To this end the Federal Government shall strive where appropriate to transfer federally owned or originated technology to State and local governments and to the private sector.

(2) Technology transfer, consistent with mission responsibilities, is a responsibility of each laboratory science and engineering professional.

(3) Each laboratory director shall ensure that efforts to transfer technology are considered positively in laboratory job descriptions, employee promotion policies, and evaluation of the job performance of scientists and engineers in the laboratory.

(b) Establishment of Research and Technology Applications Offices

Each Federal laboratory shall establish an Office of Research and Technology Applications. Laboratories having existing organizational structures which perform the functions of this section may elect to combine the Office of Research and Technology Applications within the existing organization. The staffing and funding levels for these offices shall be determined between each Federal laboratory and the Federal agency operating or directing the laboratory, except that (1) each laboratory having 200 or more full-time equivalent scientific, engineering, and related technical positions shall provide one or more full-time equivalent positions as staff for its Office of Research and Technology Applications, and (2) each Federal agency which operates or directs one or more Federal laboratories shall make available sufficient funding, either as a separate line item or from the agency's research and development budget, to support the technology transfer function at the agency and at its laboratories, including support of the Offices of Research and Technology Applications.

Furthermore, individuals filling positions in an Office of Research and Technology Applications shall be included in the overall laboratory/agency management development program so as to ensure that highly competent technical managers are full participants in the technology transfer process.

The agency head shall submit to Congress at the time the President submits the budget to Congress an explanation of the agency's technology transfer program for the preceding year and the agency's plans for conducting its technology transfer function for the upcoming year, including plans for securing intellectual property rights in laboratory innovations with commercial promise and plans for managing such innovations so as to benefit the competitiveness of United States industry.

(c) Functions of Research and Technology Applications Offices

It shall be the function of each Office of Research and Technology Applications-

(1) to prepare application assessments for selected research and development projects in which that laboratory is engaged and which in the opinion of the laboratory may have potential commercial applications;

(2) to provide and disseminate information on federally owned or originated products, processes, and services having potential application to State and local governments and to private industry;

(3) to cooperate with and assist the National Technical Information Service, the Federal Laboratory Consortium for Technology Transfer, and other organizations which link the research and development resources of that laboratory and the Federal Government as a whole to potential users in State and local government and private industry;

(4) to provide technical assistance to State and local government officials; and

(5) to participate, where feasible, in regional, State, and local programs designed to facilitate or stimulate the transfer of technology for the benefit of the region, State, or local jurisdiction in which the Federal laboratory is located.

Agencies which have established organizational structures outside their Federal laboratories which have as their principal purpose the transfer of federally owned or originated technology to State and local government and to the private sector may elect to perform the functions of this subsection in such organizational structures. No Office of Research and Technology Applications or other organizational structures performing the functions of this subsection shall substantially compete with similar services available in the private sector.

(d) Dissemination of technical information

The National Technical Information Service shall—

(1) serve as a central clearinghouse for the collection, dissemination and transfer of information on federally owned or originated technologies having potential application to State and local governments and to private industry;

(2) utilize the expertise and services of the National Science Foundation and the Federal Laboratory Consortium for Technology Transfer; particularly in dealing with state and local governments;

(3) receive requests for technical assistance from State and local governments, respond to such requests with published information available to the

Service, and refer such requests to the Federal Laboratory Consortium for Technology Transfer to the extent that such requests require a response involving more than the published information available to the Service;

(4) provide funding, at the discretion of the Secretary, for Federal laboratories to provide the assistance specified in subsection (c)(3) of this section;

(5) use appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems; and

(6) maintain a permanent archival repository and clearinghouse for the collection and dissemination of nonclassified scientific, technical, and engineering information.

(e) Establishment of Federal Laboratory Consortium for Technology Transfer

(1) There is hereby established the Federal Laboratory Consortium for Technology Transfer (hereinafter referred to as the "Consortium") which, in cooperation with Federal Laboratories and the private sector, shall—

(A) develop and (with the consent of the Federal laboratory concerned) administer techniques, training courses, and materials concerning technology transfer to increase the awareness of Federal laboratory employees regarding the commercial potential of laboratory technology and innovations;

(B) furnish advice and assistance requested by Federal agencies and laboratories for use in their technology transfer programs (including the planning of seminars for small business and other industry);

(C) provide a clearinghouse for requests, received at the laboratory level, for technical assistance from States and units of local governments, businesses, industrial development organizations, not-for-profit organizations including universities, Federal agencies and laboratories, and other persons, and—

(i) to the extent that such requests can be responded to with published information available to the National Technical Information Service, refer such requests to that Service, and

(ii) otherwise refer these requests to the appropriate Federal laboratories and agencies;

(D) facilitate communication and coordination between Offices of Research and Technology Applications of Federal laboratories;

(E) utilize (with the consent of the agency involved) the expertise and services of the National Science Foundation, the Department of Commerce, the National Aeronautics and Space Administration, and other Federal agencies, as necessary;

(F) with the consent of any Federal laboratory, facilitate the use by such laboratory of appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems;

(G) with the consent of any Federal laboratory, assist such laboratory to establish programs using technical volunteers to provide technical assistance to communities related to such laboratory;

(H) facilitate communication and cooperation between Offices of Research and Technology Applications of Federal laboratories and regional, State, and local technology transfer organizations;

(I) when requested, assist colleges or universities, businesses, nonprofit organizations, State or local governments, or regional organizations to establish programs to stimulate research and to encourage technology transfer in such areas as technology program development, curriculum design, long-term research planning, personnel needs projections, and productivity assessments; and

(J) seek advice in each Federal laboratory consortium region from representatives of State and local governments, large and small business, universities, and other appropriate persons on the effectiveness of the program (and any such advice shall be provided at no expense to the Government).

(2) The membership of the Consortium shall consist of the Federal laboratories described in clause (1) of subsection (b) of this section and such other laboratories as may choose to join the Consortium. The representatives to the Consortium shall include a senior staff member of each Federal laboratory which is a member of the Consortium and a representative appointed from each Federal agency with one or more member laboratories.

(3) The representatives to the Consortium shall elect a Chairman of the Consortium.

(4) The Director of the National Institute of Standards and Technology shall provide the Consortium, on a reimbursable basis, with administrative services, such as office space, personnel, and support services of the Institute, as requested by the Consortium and approved by such Director.

(5) Each Federal laboratory or agency shall transfer technology directly to users or representatives of users, and shall not transfer technology directly to the Consortium. Each Federal laboratory shall conduct and transfer technology only in accordance with the practices and policies of the Federal agency which owns, leases, or otherwise uses such Federal laboratory.

(6) Not later than one year after October 20, 1986, and every year thereafter, the Chairman of the Consortium shall submit a report to the President, to the appropriate authorization and appropriation committees of both Houses of the Congress, and to each agency with respect to which a transfer of funding is made (for the fiscal year or years involved) under paragraph (7), concerning the activities of the Consortium and the expenditures made by it under this subsection during the year for which the report is made.

(7) (A) Subject to subparagraph (B), an amount equal to 0.008 percent of the budget of each Federal agency from any Federal source, including related overhead, that is to be utilized by or on behalf of the laboratories of such agency for a fiscal year referred to in subparagraph (B)(ii) shall be transferred by such agency to the National Institute of Standards and Technology at the beginning of the fiscal year involved. Amounts so transferred shall be provided by the Institute to the Consortium for the purpose of carrying out activities of the Consortium under this subsection.

(B) A transfer shall be made by any Federal agency under subparagraph (A), for any fiscal year, only if—

(i) the amount so transferred by that agency (as determined under such subparagraph) would exceed $10,000; and

(ii) such transfer is made with respect to the fiscal year 1987, 1988, 1989, 1990, or 1991.

(C) The heads of Federal agencies and their designees, and the directors of Federal laboratories, may provide such additional support for operations of the Consortium as they deem appropriate.

(8) (A) The Consortium shall use 5 percent of the funds provided in paragraph (7)(A) to establish demonstration projects in technology transfer. To carry out such projects, the Consortium may arrange for grants or awards to, or enter into agreements with, nonprofit State, local, or private organizations or entities whose primary purposes are to facilitate cooperative research between the Federal laboratories and organizations not associated with the Federal laboratories, to

transfer technology from the Federal laboratories, and to advance State and local economic activity.

(B) The demonstration projects established under subparagraph (A) shall serve as model programs. Such projects shall be designed to develop programs and mechanisms for technology transfer from the Federal laboratories which may be utilized by the States and which will enhance Federal, State, and local programs for the transfer of technology.

(C) Application for such grants, awards, or agreements shall be in such form and contain such information as the Consortium or its designee shall specify.

(D) Any person who receives or utilizes any proceeds of a grant or award made, or agreement entered into, under this paragraph shall keep such records as the Consortium or its designee shall determine are necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition of such proceeds and the total cost of the project in connection with which such proceeds were used.

(f) Agency reporting

Each Federal agency which operates or directs one or more Federal laboratories shall report annually to the Congress, as part of the agency's annual budget submission, on the activities performed by that agency and its Federal laboratories pursuant to the provisions of this section.

(g) Functions of Secretary

(1) The Secretary, through the Under Secretary, and in consultation with other Federal agencies, may—

(A) make available to interested agencies the expertise of the Department of Commerce regarding the commercial potential of inventions and methods and options for commercialization which are available to the Federal laboratories, including research and development limited partnerships;

(B) develop and disseminate to appropriate agency and laboratory personnel model provisions for use on a voluntary basis in cooperative research and development arrangements; and

(C) furnish advice and assistance, upon request, to Federal agencies concerning their cooperative research and development programs and projects.

(2) Two years after October 20, 1986 and every two years thereafter, the Secretary shall submit a summary report to the President and the Congress on the

use by the agencies and the Secretary of the authorities specified in this chapter. Other Federal agencies shall cooperate in the report's preparation.

(3) Not later than one year after October 20, 1986, the Secretary shall submit to the President and the Congress a report regarding

(A) any copyright provisions or other types of barriers which tend to restrict or limit the transfer of federally funded computer software to the private sector and to State and local governments, and agencies of such State and local governments; and

(B) the feasibility and cost of compiling and maintaining a current and comprehensive inventory of all federally funded training software.

(h) Repealed. Pub.L. 100-519, Title II, § 212(a)(4), Oct. 24, 1988, 102 Stat. 2595
(Pub.L. 96-480, § 11, Oct. 21, 1980, 94 Stat. 2318, renumbered § 10 and amended Pub.L. 99-502, §§ 3-5, 9(e)(1), Oct. 20, 1986, 100 Stat. 1787, 1789, 1791, 1797; Pub.L. 99-502, § 4(c)(1), Oct. 20, 1986, 100 Stat. 1790; renumbered § 11 and amended Pub.L. 100-418, Title V, §§ 5115(b)(2), 5122(a)(1), 5162(b), 5163(c)(1), (3), Aug. 23, 1988, 102 Stat. 1433, 1438, 1450, 1451; Pub.L. 100-519, Title II, §§ 201(d)(3), 212(a)(4), Oct. 24, 1988, 102 Stat. 2594, 2595; Pub.L. 101-189, Div. C, Title XXXI, § 3133(e), Nov. 29, 1989, 103 Stat. 1679.)

§ 3710a. Cooperative research and development agreements

(a) General authority

Each Federal agency may permit the director of any of its Government-operated Federal laboratories, and, to the extent provided in an agency-approved joint work statement, the director of any of its Government-owned, contractor-operated laboratories—

(1) to enter into cooperative research and development agreements on behalf of such agency (subject to subsection (c) of this section) with other Federal agencies; units of State or local government; industrial organizations (including corporations, partnerships, and limited partnerships, and industrial development organizations); public and private foundations; nonprofit organizations (including universities); or other persons (including licensees of inventions owned by the Federal agency); and

(2) to negotiate licensing agreements under section 207 of Title 35, or under other authorities (in the case of a Government-owned, contractor-operated laboratory, subject to subsection (c) of this section) for inventions made or other intellectual property developed at the laboratory and other inventions or other intellectual property that may be voluntarily assigned to the Government.

(b) Enumerated authority

Under agreements entered into pursuant to subsection (a)(1) of this section, a Government-operated Federal laboratory, and, to the extent provided in an agency-approved joint work statement, a Government-owned, contractor-operated laboratory, may (subject to subsection (c) of this section)—

(1) accept, retain, and use funds, personnel, services, and property from collaborating parties and provide personnel, services, and property to collaborating parties;

(2) grant or agree to grant in advance, to a collaborating party, patent licenses or assignments, or options thereto, in any invention made in whole or in part by a laboratory employee under the agreement, retaining a nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government and such other rights as the Federal laboratory deems appropriate;

(3) waive, subject to reservation by the Government of a nonexclusive, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government, in advance, in whole or in part, any right of ownership which the Federal Government may have to any subject invention made under the agreement by a collaborating party or employee of a collaborating party;

(4) determine rights in other intellectual property developed under an agreement entered into under subsection (a)(1) of this section; and

(5) to the extent consistent with any applicable agency requirements and standards of conduct, permit employees or former employees of the laboratory to participate in efforts to commercialize inventions they made while in the service of the United States.

A Government-owned, contractor-operated laboratory that enters into a cooperative research and development agreement under subsection (a)(l) of this section may use or obligate royalties or other income accruing to such laboratory under such agreement with respect to any invention only (i) for payments to inventors; (ii) for the purposes described in section 3710c(a)(l)(B)(i), (ii), and (iv) of this title; and (iii) for scientific research and development consistent with the research and development mission and objectives of the laboratory.

(c) Contract considerations

(1) A Federal agency may issue regulations on suitable procedures for implementing the provisions of this section; however, implementation of this section shall not be delayed until issuance of such regulations.

(2) The agency in permitting a Federal laboratory to enter into agreements under this section shall be guided by the purposes of such regulations.

(3) (A) Any agency using the authority given it under subsection (a) of this section shall review standards of conduct for its employees for resolving potential conflicts of interest to make sure they adequately establish guidelines for situations likely to arise through the use of this authority, including but not limited to cases where present or former employees or their partners negotiate licenses or assignments of titles to inventions or negotiate cooperative research and development agreements with Federal agencies (including the agency with which the employee involved is or was formerly employed).

(B) If, in implementing subparagraph (A), an agency is unable to resolve potential conflicts of interest within its current statutory framework, it shall propose necessary statutory changes to be forwarded to its authorizing committees in Congress.

(4) The laboratory director in deciding what cooperative research and development agreements to enter into shall—

(A) give special consideration to small business firms, and consortia involving small business firms; and

(B) give preference to business units located in the United States which agree that products embodying inventions made under the cooperative research and development agreement or produced through the use of such inventions will be manufactured substantially in the United States and, in the case of any industrial organization or other person subject to the control of a foreign company or government, as appropriate, take into consideration whether or not such foreign government permits United States agencies, organizations, or other persons to enter into cooperative research and development agreements and licensing agreements.

(5) **(A)** If the head of the agency or his designee desires an opportunity to disapprove or require the modification of any such agreement presented by the director of a Government-operated laboratory, the agreement shall provide a 30-day period within which such action must be taken beginning on the date the agreement is presented to him or her by the head of the laboratory concerned.

(B) In any case in which the head of an agency or his designee disapproves or requires the modification of an agreement presented, by the director of a Government-operated laboratory under this section, the head of the agency or such designee shall transmit a written explanation of such disapproval or modification to the head of the laboratory concerned.

(C) **(i)** Any agency which has contracted with a non-Federal entity to operate a laboratory shall review and approve, request specific modifications to, or disapprove a joint work statement that is submitted by the director of such laboratory within 90 days after such submission. In any case where an agency has requested specific modifications to a joint work statement, the agency shall approve or disapprove any resubmission of such joint work statement within 30 days after such resubmission, or 90 days after original submission, whichever occurs later. No agreement may be entered into by a Government-owned, contractor-operated laboratory under this section before both approval of the agreement under clause (iv) and approval under this clause of a joint work statement.

(ii) In any case in which an agency which has contracted with a non-Federal entity to operate a laboratory disapproves or requests the modification of a joint work statement submitted under this section, the agency shall promptly transmit a written explanation of such disapproval or modification to the director of the laboratory concerned.

(iii) Any agency which has contracted with a non-Federal entity to operate a laboratory or laboratories shall develop and provide to such laboratory or laboratories one or more model cooperative research and development agreements, for the purposes of standardizing practices and procedures, resolving common legal issues, and enabling review of cooperative research and development agreements to be carried out in a routine and prompt manner.

(iv) An agency which has contracted with a non-Federal entity to operate a laboratory shall review each agreement under this section. Within 30 days after the presentation, by the director of the laboratory, of such agreement, the agency shall, on the basis of such review, approve or request specific modification to such agreement. Such agreement shall not take effect before approval under this clause.

(v) If an agency fails to complete a review under clause (iv) within the 30-day period specified therein, the agency shall submit to the Congress, within 10 days after the end of that 30-day period, a report on the reasons for such failure. The agency shall, at the end of each successive 30-day period thereafter during which such failure continues, submit to the Congress another report on the reasons for the continuing failure. Nothing in this clause relieves the agency of the requirement to complete a review under clause (iv).

(vi) In any case in which an agency which has contracted with a non-Federal entity to operate a laboratory requests the modification of an agreement presented under this section, the agency shall promptly transmit a written explanation of such modification to the director of the laboratory concerned.

(6) Each agency shall maintain a record of all agreements entered into under this section.

(7) **(A)** No trade secrets or commercial or financial information that is privileged or confidential, under the meaning of section 552(b)(4) of Title 5, which is obtained in the conduct of research or as a result of activities under this chapter from a non-Federal party participating in a cooperative research and development agreement shall be disclosed.

(B) The director, or in the case of a contractor-operated laboratory, the agency, for a period of up to 5 years after development of information that results from research and development activities conducted under this chapter and that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from a non-Federal party participating in a cooperative research and development agreement, may provide appropriate protection against the dissemination of such information, including exemption from subchapter II of chapter 5 of Title 5.

(d) Definitions

As used in this section—

(1) the term "cooperative research and development agreement" means any agreement between one or more Federal laboratories and one or more non-Federal parties under which the Government, through its laboratories, provides personnel, services, facilities, equipment, or other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the laboratory; except that such term does not include a procurement contact or cooperative agreement as those terms are used in sections 6303, 6304, and 6305 of Title 31;

(2) the term "laboratory" means—

(A) a facility or group of facilities owned, leased, or otherwise used by a Federal agency, a substantial purpose of which is the performance of research, development, or engineering by employees of the Federal Government;

(B) a group of Government-owned, contractor-operated facilities under a common contract, when a substantial purpose of the contract is the performance of research and development for the Federal Government; and

(C) a Government-owned, contractor-operated facility that is not under a common contract described in subparagraph (B), and the primary purpose of which is the performance of research and development for the Federal Government, but such term does not include any facility covered by Executive Order No. 12344, dated February 1, 1982, pertaining to the Naval nuclear propulsion program; and

(3) the term "joint work statement" means a proposal prepared for a Federal agency by the director of a Government-owned, contractor-operated laboratory describing the purpose and scope of a proposed cooperative research and development agreement, and assigning rights and responsibilities among the agency, the laboratory, and any other party or parties to the proposed agreement.

(e) Determination of laboratory missions

For purposes of this section, an agency shall make separate determinations of the mission or missions of each of its laboratories.

(f) Relationship to other laws

Nothing in this section is intended to limit or diminish existing authorities of any agency.

(g) Principles

In implementing this section, each agency which has contracted with a non-Federal entity to operate a laboratory shall be guided by the following principles:

(1) The implementation shall advance program missions at the laboratory, including any national security mission.

(2) Classified information and unclassified sensitive information protected by law, regulation, or Executive order shall be appropriately safeguarded

(Pub.L. 96-480, § 12, as added and renumbered § 11, Pub.L. 99-502, §§ 2, 9(e)(1), Oct. 20, 1986, 100 Stat. 1785, 1797; renumbered § 12, Pub.L. 100-418, Title V, § 5122(a)(1), Aug. 23, 1988, 102 Stat. 1438; Pub.L. 100-519, Title III, § 301, Oct. 24, 1988, 102 Stat. 2597; Pub.L. 101-189, Div. C, Title XXXI, § 3133(a), (b), Nov. 29, 1989, 103 Stat. 1675-1677.)

§ 3710b. Rewards for scientific, engineering, and technical personnel of federal agencies

The head of each Federal agency that is making expenditures at a rate of more than $50,000,000 per fiscal year for research and development in its Government-operated laboratories shall use the appropriate statutory authority to develop and implement a cash awards program to reward its scientific, engineering, and technical personnel for-

(1) inventions, innovations, computer software, or other outstanding scientific or technological contributions of value to the United States due to commercial application or due to contributions to missions of the Federal agency or the Federal government, or

(2) exemplary activities that promote the domestic transfer of science and technology development within the Federal Government and result in utilization of such science and technology by American industry or business, universities, State or local governments, or other non-Federal parties.

(Pub.L. 96-480, § 13, as added and renumbered § 12, Pub.L. 99-502, §§ 6, 9(e)(1), Oct. 20, 1986, 100 Stat. 1792, 1797; renumbered § 13, Pub.L. 100-418, Title V, § 5122(a)(1), Aug. 23, 1988, 102 Stat. 1438; Pub.L. 100-519, Title III, § 302, Oct. 24, 1988, 102 Stat. 2597.)

§ 3710c. Distribution of royalties received by Federal agencies

(a) In general

(1) Except as provided in paragraphs (2) and (4), any royalties or other income received by a Federal agency from the licensing or assignment of inventions under agreements entered into by Government-operated Federal laboratories under section 3710a of this title, and inventions of Government-operated Federal laboratories licensed under section 207 of Title 35, or under any other provision of law, shall be retained by the agency whose laboratory produced the invention and shall be disposed of as follows:

(A) **(i)** The head of the agency or his designee shall pay at least 15 percent of the royalties or other income the agency receives on account of any invention to the inventor (or co-inventors) if the inventor (or each such co-inventor) has assigned his or her rights in the invention to the United States. This clause shall take effect on October 20, 1986 unless the agency publishes a notice in the Federal Register within 90 days of such date indicating its election to file a Notice of Proposed Rulemaking pursuant to clause (ii).

(ii) An agency may promulgate, in accordance with section 553 of Title 5 regulations providing for an alternative program for sharing royalties with inventors under clause (i). Such regulations must—

(I) guarantee a fixed minimum payment to each such inventor, each year that the agency receives royalties from that inventor's invention;

(II) provide a percentage royalty share to each such inventor, each year that the agency receives royalties from that inventor's invention in excess of a threshold amount;

(III) provide that total payments to all such inventors shall exceed 15 percent of total agency royalties in any given fiscal year; and

(IV) provide appropriate incentives from royalties for those laboratory employees who contribute substantially to the technical development of a licensed invention between the time of the filing of the patent application and the licensing of the invention.

(iii) An agency that has published its intention to promulgate regulations under clause (ii) may elect not to pay inventors under clause (i) until the expiration of two years after October 20, 1986 or until the date of the promulgation of such regulations, whichever is earlier. If an agency makes such an election and after two years the regulations have not been promulgated, the agency shall make payments (in accordance with clause (i)) of at least 15 percent of the royalties involved, retroactive to October 20, 1986. If promulgation of the regulations occurs within two years after October 20, 1986, payments shall be made in accordance with such regulations, retroactive to October 20, 1986. The agency shall retain its royalties until the inventor's portion is paid under either clause (i) or (ii). Such royalties shall not be transferred to the agency's Government-operated laboratories under subparagraph (B) and shall not revert to the Treasury pursuant to paragraph (2) as a result of any delay caused by rulemaking under this subparagraph.

(B) The balance of the royalties or other income shall be transferred by the agency to its Government-operated laboratories, with the majority share of the royalties or other income from any invention going to the laboratory where the invention occurred; and the funds so transferred to any such laboratory may be used or obligated by that laboratory during the fiscal year in which they are received or during the succeeding fiscal year-

(i) for payment of expenses incidental to the administration and licensing of inventions by that laboratory or by the agency with respect to inventions which occurred at that laboratory, including the fees or other costs for the services of other agencies, persons, or organizations for invention management and licensing services;

(ii) to reward scientific, engineering, and technical employees of that laboratory, including payments to inventors and developers of sensitive or classified technology, regardless of whether the technology has commercial applications;

(iii) to further scientific exchange among the Government-operated laboratories of the agency; or

(iv) for education and training of employees consistent with the research and development mission and objectives of the agency, and for other activities that increase the licensing potential for transfer of the technology of the laboratories of the agency.

Any of such funds not so used or obligated by the end of the fiscal year succeeding the fiscal year in which they are received shall be paid into the Treasury of the United States.

(2) If, after payments to inventors under paragraph (1), the royalties received by an agency in any fiscal year exceed 5 percent of the budget of the Government-

operated laboratories of the agency for that year, 75 percent of such excess shall be paid to the Treasury of the United States and the remaining 25 percent may be used or obligated for the purposes described in clauses (i) through (iv) of paragraph (1)(B) during that fiscal year or the succeeding fiscal year. Any funds not so used or obligated shall be paid into the Treasury of the United States.

(3) Any payment made to an employee under this section shall be in addition to the regular pay of the employee and to any other awards made to the employee, and shall not affect the entitlement of the employee to any regular pay, annuity, or award to which he is otherwise entitled or for which he is otherwise eligible or limit the amount thereof. Any payment made to an inventor as such shall continue after the inventor leaves the laboratory or agency. Payments made under this section shall not exceed $100,000 per year to any one person, unless the President approves a larger award (with the excess over $100,000 being treated as a Presidential award under section 4504 of Title 5).

(4) A Federal agency receiving royalties or other income as a result of invention management services performed for another Federal agency or laboratory under section 207 of Title 35 may retain such royalties or income to the extent required to offset the payment of royalties to inventors under clause (i) of paragraph (1)(A), costs and expenses incurred under clause (i) of paragraph (1)(B), and the cost of foreign patenting and maintenance for any invention of the other agency. All royalties and other income remaining after payment of the royalties, costs, and expenses described in the preceding sentence shall be transferred to the agency for which the services were performed, for distribution in accordance with clauses (i) through (iv) of paragraph (1)(B).

(b) Certain assignments

If the invention involved was one assigned to the Federal agency-

(1) by a contractor, grantee, or participant in a cooperative agreement with the agency, or

(2) by an employee of the agency who was not working in the laboratory at the time the invention was made, the agency unit that was involved in such assignment shall be considered to be a laboratory for purposes of this section.

(c) Reports

(1) In making their annual budget submissions Federal agencies shall submit, to the appropriate authorization and appropriation committees of both Houses of the Congress, summaries of the amount of royalties or other income received and expenditures made (including inventor awards) under this section.

(2) The Comptroller General, five years after October 20, 1986, shall review the effectiveness of the various royalty-sharing programs established under this section and report to the appropriate committees of the House of Representatives and the Senate, in a timely manner, his findings, conclusions, and recommendations for improvements in such programs.

(Pub.L. 96-480, § 14, as added, renumbered § 13 and amended Pub.L. 99-502, §§ 7, 9(e)(1), (3), Oct. 20, 1986, 100 Stat. 1792, 1797; renumbered § 14 and amended Pub.L. 100-418, Title V, §§ 5122(a)(1), 5162(a), Aug. 23, 1988, 102 Stat. 1438, 1450; Pub.L. 100-519, Title III, § 303(a), Oct. 24, 1988, 102 Stat. 2597; Pub.L. 101-189, Div. C, Title XXXI, § 3133(c), Nov. 29, 1989, 103 Stat. 1677, 1678.)

§ 3710d. Employee activities

(a) In general

If a Federal agency which has the right of ownership to an invention under this chapter does not intend to file for a patent application or otherwise to promote commercialization of such invention, the agency shall allow the inventor, if the inventor is a Government employee or former employee who made the invention during the course of employment with the Government, to retain title to the invention (subject to reservation by the Government of a nonexclusive, nontransferable, irrevocable, paid-up license to practice the invention or have the invention practiced throughout the world by or on behalf of the Government). In addition, the agency may condition the inventor's right to title on the timely filing of a patent application in cases when the Government determines that it has or may have a need to practice the invention.

(b) "Special Government employees" defined

For purposes of this section, Federal employees include "special Government employees" as defined in section 202 of Title 18.

(c) Relationship to other laws

Nothing in this section is intended to limit or diminish existing authorities of any agency.

(Pub.L. 96-480, § 15, as added and renumbered § 14, Pub.L. 99-502, §§ 8, 9(e)(1), Oct. 20, 1986, 100 Stat. 1794, 1797; renumbered § 15, Pub.L. 100-418, Title V, § 5122(a)(1), Aug. 23, 1988, 102 Stat. 1438.)

So in original. Probably should be "invention".

EXECUTIVE ORDERS
EXECUTIVE ORDER NO. 12591
Apr. 10, 1987, 52 F.R. 13414, as amended Ex.Ord. No. 12618,
Dec. 22, 1987, 52 F.R. 48661
FACILITATING ACCESS TO SCIENCE AND TECHNOLOGY

By the authority vested in me as President by the Constitution and laws of the United States of America, including the Federal Technology Transfer Act of 1986 [Public Law 99-502] [Pub.L. 99-502, Oct. 20, 1986, 100 Stat. 1785], the Trademark Clarification Act of 1984 [Public Law 98-260] [Pub.L. 98-620, Nov. 8, 1984, 98 Stat. 3335], and the University and Small Business Patent Procedure Act of 1980 [Public Law 96-517] [Pub.L. 96-517, Dec. 12, 1980, 94 Stat. 3015], and in order to ensure that Federal agencies and laboratories assist universities and the private sector in broadening our technology base by moving new knowledge from the research laboratory into the development of new products and processes, it is hereby ordered as follows:

Section 1. Transfer of Federally Funded Technology

(a) The head of each Executive department and agency, to the extent permitted by law, shall encourage and facilitate collaboration among Federal laboratories, State and local governments, universities, and the private sector, particularly small business, in order to assist in the transfer of technology to the marketplace.

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

(1) delegate authority to its government-owned, government-operated Federal laboratories:

(A) to enter into cooperative research and development agreements with other Federal laboratories, State and local governments, universities, and the private sector; and

(B) to license, assign, or waive rights to intellectual property developed by the laboratory either under such cooperative research or development agreements and from within individual laboratories.

(2) identify and encourage persons to act as conduits between and among Federal laboratories, universities, and the private sector for the transfer of technology developed from federally funded research and development efforts;

(3) ensure that State and local governments, universities, and the private sector are provided with information on the technology, expertise, and facilities available in Federal laboratories;

(4) promote the commercialization, in accord with my Memorandum to the heads of Executive Departments and Agencies of February 18, 1983, of patentable results of federally funded research by granting to all contractors, regardless of size, the title to patents made in whole or in part with Federal funds, in exchange for royalty-free use by or on behalf of the government;

(5) administer all patents and licenses to inventions made with federal assistance, which are owned by the non-profit contractor or grantee, in accordance with Section 202(c)(7) of Title 35 of the United States Code as amended by Public Law 98-620 [35 U.S.C.A. § 202(c)(7)], without regard to limitations on licensing found in that section prior to amendment or in Institutional Patent Agreements now in effect that were entered into before that law was enacted on November 8, 1984, unless, in the case of an invention that has not been marketed, the funding agency determines, based on information in its files, that the contractor or grantee has not taken adequate steps to market the inventions, in accordance with applicable law or an Institutional Patent Agreement;

(6) implement, as expeditiously as practicable, royalty-sharing programs with inventors who were employees of the agency at the time their inventions were made, and cash award programs; and

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

Sec. 2. Establishment of the Technology Share Program

The Secretaries of Agriculture, Commerce, Energy, and Health and Human Services and the Administrator of the National Aeronautics and Space Administration shall select one or more of their Federal laboratories to participate in the Technology Share Program. Consistent with its mission and policies and within its overall funding allocation in any year, each Federal laboratory so selected shall:

(a) Identify areas of research and technology of potential importance to long-term national economic competitiveness and in which the laboratory possesses special competence and/or unique facilities;

(b) Establish a mechanism through which the laboratory performs research in areas identified in Section 2(a) as a participant of a consortium composed of United States industries and universities. All consortia so established shall have, at a minimum, three individual companies that conduct the majority of their business in the United States; and

(c) Limit its participation in any consortium so established to the use of laboratory personnel and facilities. However, each laboratory may also provide financial support generally not to exceed 25 percent of the total budget for the activities of the consortium. Such financial support by any laboratory in all such consortia shall be limited to a maximum of $5 million per annum.

Sec. 3. Technology Exchange — Scientists and Engineers

The Executive Director of the President's Commission on Executive Exchange shall assist Federal agencies, where appropriate, by developing and implementing an exchange program whereby scientists and engineers in the private sector may take temporary assignments in Federal laboratories, and scientists and engineers in Federal laboratories may take temporary assignments in the private sector.

Sec. 4. International Science and Technology

In order to ensure that the United States benefits from and fully exploits scientific research and technology developed abroad,

(a) The head of each Executive department and agency, when negotiating or entering into cooperative research and development agreements and licensing arrangements with foreign persons or industrial organizations (where these entities are directly or indirectly controlled by a foreign company or government], shall, in consultation with the United States Trade Representative, give appropriate considerations:

(1) to whether such foreign companies or governments permit and encourage United States agencies, organizations, or persons to enter into cooperative research and development agreements and licensing arrangements on a comparable basis;

(2) to whether those foreign governments have policies to protect the United States intellectual property rights; and

(3) where cooperative research will involve data, technologies, or products subject to national security export controls under the laws of the United States, to whether those foreign governments have adopted adequate measures to prevent the transfer of strategic technology to destinations prohibited under such national security export controls, either through participation in the Coordinating Committee for Multilateral Export Controls (COCOM) or through other international agreements to which the United States and such foreign governments are signatories.

(b) The Secretary of State shall develop a recruitment policy that encourages scientists and engineers from other Federal agencies, academic institutions, and industry to apply for assignments in embassies of the United States; and

(c) The Secretaries of State and Commerce and the Director of the National Science Foundation shall develop a central mechanism for the prompt and efficient dissemination of science and technology information developed abroad to users in Federal laboratories, academic institutions, and the private sector on a fee-for-service basis.

Sec. 5. Technology Transfer from the Department of Defense

Within 6 months of the date of this Order, the Secretary of Defense shall identify a list of funded technologies that would be potentially useful to United States industries and universities. The Secretary shall then accelerate efforts to make these technologies more readily available to United States industries and universities.

Sec. 6. Basic Science and Technology Centers

The head of each Executive department and agency shall examine the potential for including the establishment of university research centers in engineering, science, or technology in the strategy and planning for any future research and development programs. Such university centers shall be jointly funded by the Federal Government, the private sector, and where appropriate, the States and shall focus on areas of fundamental research and technology that are both scientifically promising and have the potential to contribute to the Nation's long-term economic competitiveness.

Sec. 7. Reporting Requirements

(a) Within 1 year from the date of this Order, the Director of the Office of Science and Technology Policy shall convene an interagency task force comprised of the heads of representative agencies and the directors of representative Federal laboratories, or their designees, in order to identify and disseminate creative approaches to technology transfer from Federal laboratories. The task force will report to the President on the progress of and problems with technology transfer from Federal laboratories.

(b) Specifically, the report shall include:

(1) a listing of current technology transfer programs and an assessment of the effectiveness of these programs;

(2) identification of new or creative approaches to technology transfer that might serve as model programs for Federal laboratories;

(3) criteria to assess the effectivenes's and impact on the Nation's economy of planned or future technology transfer efforts; and

(4) a compilation and assessment of the Technology Share Program established in Section 2 and, where appropriate, related cooperative research and development venture programs.

Sec. 8. Relation to Existing Law

Nothing in this Order shall affect the continued applicability of any existing laws or regulations relating to the transfer of United States technology to other nations. The head of any Executive department or agency may exclude from consideration, under this Order, any technology that would be, if transferred, detrimental to the interests of national security.

Ronald Reagan

Federal Statutes

- 28 USC 1498, Patent and Copyright Cases
- 35 USC 200 et seq, Patent Rights in Inventions Made with Federal Assistance
- 18 USC 1905, Disclosure of Confidential Information Generally

28 USC 1498 PATENT AND COPYRIGHT CASES

(a) Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the United States Claims Court for the recovery of his reasonable and entire compensation for such use and manufacture.

For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States.

The court shall not award compensation under this section if the claim is based on the use or manufacture by or for the United States of any article owned, leased, used by, or in the possession of the United States prior to July 1, 1918.

A Government employee shall have the right to bring suit against the Government under this section except where he was in a position to order, influence, or induce use of the invention by the Government. This section shall not confer a right of action on any patentee or any assignee of such patentee with respect to any invention discovered or invented by a person while in the employment or service of the United States, where the invention was related to the official functions of the employee, in cases in which such functions included research and development, or in the making of which Government time, materials or facilities were used.

(b) Hereafter, whenever the copyright in any work protected under the copyright laws of the United States shall be infringed by the United States, by a corporation owned or controlled by the United States, or by a contractor, subcontractor, or any person, firm, or corporation acting for the Government and with the authorization or consent of the Government, the exclusive remedy of the owner of such copyright shall be by action against the United States in the Claims Court for the recovery of his reasonable and entire compensation as damages for such infringement, including the minimum statutory damages as set forth in section 504(c), of title 17, United States Code: *Provided,* That a Government employee shall have a right of action against the Government under this subsection except where he was in a position to order, influence, or induce use of the copyrighted work by the Government: *Provided, however,* That this subsection shall not confer a right of action on any copyright owner or any assignee of such owner with respect to any copyrighted work prepared by a person while in the employment or service of the United States, where the copyrighted work was prepared as a part of the official functions of the employee, or in the preparation of which Government time, material, or facilities were used: *And provided*

further, That before such action against the United States has been instituted the appropriate corporation owned or controlled by the United States or the head of the appropriate department or agency of the Government, as the case may be, is authorized to enter into an agreement with the copyright owner in full settlement and compromise for the damages accruing to him by reason of such infringement and to settle the claim administratively out of available appropriations.

Except as otherwise provided by law, no recovery shall be had for any infringement of a copyright covered by this subsection committed more than three years prior to the filing of the complaint or counterclaim for infringement in the action, except that the period between the date of receipt of a written claim for compensation by the Department or agency of the Government or corporation owned or controlled by the United States, as the case may be, having authority to settle such claim and the date of mailing by the Government of a notice to the claimant that his claim has been denied shall not be counted as a part of the three years, unless suit is brought before the last-mentioned date.

(c) The provision of this section shall not apply to any claim arising in a foreign country.

(d) Hereafter, whenever a plant variety protected by a certificate of plant variety protection under the laws of the United States shall be infringed by the United States, by a corporation owned or controlled by the United States, or by a contractor, subcontractor, or any person, firm, or corporation acting for the Government and with the authorization and consent of the Government, the exclusive remedy of the owner of such certificate shall be by action against the United States in the Claims Court for the recovery of his reasonable and entire compensation as damages for such infringement: *Provided,* That a Government employee shall have a right of action against the Government under this subsection except where he was in a position to order, influence, or induce use of the protected plant variety by the Government: *Provided, however,* That this subsection shall not confer a right of action on any certificate owner or any assignee of such owner with respect to any protected plant variety made by a person while in the employment or service of the United States, where such variety was prepared as a part of the official functions of the employee, or in the preparation of which Government time, material, or facilities were used: *And provided further,* That before such action against the United States has been instituted, the appropriate corporation owned or controlled by the United States or the head of the appropriate agency of the Government, as the case may be, is authorized to enter into an agreement with the certificate owner in full settlement and compromise, for the damages accrued to him by reason of such infringement and to settle the claim administratively out of available appropriations.

(e) Subsections (b) and (c) of this section apply to exclusive rights in mask works under chapter 9 of title 17 to the same extent as such subsections apply to copyrights.

(As amended Oct. 19, 1976, Pub.L. 94-553, § 105(c), 90 Stat. 2599; Apr. 2, 1982, Pub.L. 97-164, Title I, § 133(d), 96 Stat. 40; Nov. 19, 1988, Pub.L. 100-702, Title X, § 1020(a)(6), 102 Stat. 4671.)

35 USC 200 ET SEQ PATENT RIGHTS IN INVENTIONS MADE WITH FEDERAL ASSISTANCE

§ 200. Policy and objective

It is the policy and objective of the Congress to use the patent system to promote the utilization of inventions arising from federally supported research or development; to encourage maximum participation of small business firms in federally supported research and development efforts; to promote collaboration between commercial concerns and nonprofit organizations, including universities; to ensure that inventions made by nonprofit organizations and small business firms are used in a manner to promote free competition and enterprise; to promote the commercialization and public availability of inventions made in the United States by United States industry and labor; to ensure that the Government obtains sufficient rights in federally supported inventions to meet the needs of the Government and protect the public against nonuse or unreasonable use of inventions; and to minimize the costs of administering policies in this area.

(Added Pub.L. 96-517, § 6(a), Dec. 12, 1980, 94 Stat. 3019.)

§ 201. Definitions

As used in this chapter _

(a) The term "Federal agency" means any executive agency as defined in section 105 of title 5, United States Code, and the military departments as defined by section 102 of title 5, United States Code.

(b) The term "funding agreement" means any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government. Such term includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental developmental, or research work under a funding agreement as herein defined.

(c) The term "contractor" means any person, small business firm, or nonprofit organization that is a party to a funding agreement.

(d) The term "invention" means any invention or discovery which is or may be patentable or otherwise protectable under this title or any novel variety of plant which is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

(e) The term "subject invention" means any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement: *Provided*, That in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act (7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(f) The term "practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

(g) The term "made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.

(h) The term "small business firm" means a small business concern as defined at section 2 of Public Law 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

(i) The term "nonprofit organization" means universities and other institutions of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a State nonprofit organization statute.

(As amended Pub.L. 98-620, Title V, § 501(1), (2), Nov. 8, 1984, 98 Stat. 3364.)

§ 202. Disposition of rights

(a) Each nonprofit organization or small business firm may, within a reasonable time after disclosure as required by paragraph (c)(1) of this section, elect to retain title to any subject invention: *Provided, however,* That a funding agreement may provide otherwise (i) when the contractor is not located in the United States or does not have a place of business located in the United States or is subject to the control of a foreign government, (ii) in exceptional circumstances when it is determined by the agency that restriction or elimination of the right to retain title to any subject invention will better promote the policy and objectives of this chapter (iii) when it is determined by a Government authority which is authorized by statute or Executive order to conduct foreign intelligence or counter-intelligence activities that the restriction or elimination of the right to retain title to any subject invention is necessary to protect the security of such activities or,[1] iv) when the funding agreement includes the operation of a

Government-owned, contractor-operated facility of the Department of Energy primarily dedicated to that Department's naval nuclear propulsion or weapons related programs and all funding agreement limitations under this subparagraph on the contractor's right to elect title to a subject invention are limited to inventions occurring under the above two programs of the Department of Energy.[2] The rights of the nonprofit organization or small business firm shall be subject to the provisions of paragraph (c) of this section and the other provisions of this chapter.

(b) (1) The rights of the Government under subsection (a) shall not be exercised by a Federal agency unless it first determines that at least one of the conditions identified in clauses (i) through (iii) of subsection (a) exists. Except in the case of subsection (a)(iii), the agency shall file with the Secretary of Commerce, within thirty days after the award of the applicable funding agreement, a copy of such determination. In the case of a determination under subsection (a)(ii), the statement shall include an analysis justifying the determination. In the case of determinations applicable to funding agreements with small business firms, copies shall also be sent to the Chief Counsel for Advocacy of the Small Business Administration. If the Secretary of Commerce believes that any individual determination or pattern of determinations is contrary to the policies and objectives of this chapter or otherwise not in conformance with this chapter, the Secretary shall so advise the head of the agency concerned and the Administrator of the Office of Federal Procurement Policy, and recommend corrective actions.

(2) Whenever the Administrator of the Office of Federal Procurement Policy has determined that one or more Federal agencies are utilizing the authority of clause (i) or (ii) of subsection (a) of this section in a manner that is contrary to the policies and objectives of this chapter, the Administrator is authorized to issue regulations describing classes of situations in which agencies may not exercise the authorities of those clauses.

(3) At least once every 5 years, the Comptroller General shall transmit a report to the Committees on the Judiciary of the Senate and House of Representatives on the manner in which this chapter is being implemented by the agencies and on such other aspects of Government patent policies and practices with respect to federally funded inventions as the Comptroller General believes appropriate.

(4) If the contractor believes that a determination is contrary to the policies and objectives of this chapter or constitutes an abuse of discretion by the agency, the determination shall be subject to the last paragraph of section 203(2).

(c) Each funding agreement with a small business firm or nonprofit organization shall contain appropriate provisions to effectuate the following:

(1) That the contractor disclose each subject invention to the Federal agency within a reasonable time after it becomes known to contractor personnel responsible for the administration of patent matters, and that the Federal Government may receive title to any subject invention not disclosed to it within such time.

(2) That the contractor make a written election within two years after disclosure to the Federal agency (or such additional time as may be approved by the Federal agency) whether the contractor will retain title to a subject invention: *Provided,* That in any case where publication, on sale, or public use, has initiated the one year statutory period in which valid patent protection can still be obtained in the United States, the period for election may be shortened by the Federal agency to a date that is not more than sixty days prior to the end of the statutory period: *And provided further,* That the Federal Government may receive title to any subject invention in which the contractor does not elect to retain rights or fails to elect rights within such times.

(3) That a contractor electing rights in a subject invention agrees to file a patent application prior to any statutory bar date that may occur under this title due to publication, on sale, or public use, and shall thereafter file corresponding patent applications in other countries in which it wishes to retain title within reasonable times, and that the Federal Government may receive title to any subject inventions in the United States or other countries in which the contractor has not filed patent applications on the subject invention within such times.

(4) With respect to any invention in which the contractor elects rights, the Federal agency shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world: *Provided,* That the funding agreement may provide for such additional rights;[3] including the right to assign or have assigned foreign patent rights in the subject invention, as are determined by the agency as necessary for meeting the obligations of the United States under any treaty, international agreement, arrangement of cooperation, memorandum of understanding, or similar arrangement, including military agreement relating to weapons development and production.

(5) The right of the Federal agency to require periodic reporting on the utilization or efforts at obtaining utilization that are being made by the contractor or his licensees or assignees: *Provided,* That any such information as well as any information on utilization or efforts at obtaining utilization obtained as part of a proceeding under section 203 of this chapter shall be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of title 5 of the United States Code.

(6) An obligation on the part of the contractor, in the event a United States patent application is filed by or on its behalf or by any assignee of the contractor, to include within the specification of such application and any patent issuing thereon, a statement specifying that the invention was made with Government support and that the Government has certain rights in the invention.

(7) In the case of a nonprofit organization, (A) a prohibition upon the assignment of rights to a subject invention in the United States without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions (provided that such assignee shall be subject to the same provisions as the contractor); (B) a requirement that the contractor share royalties with the inventor; (C) except with respect to a funding agreement for the operation of a Government-owned-contractor-operated facility, a requirement that the balance of any royalties or income earned by the contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, be utilized for the support of scientific research or education; (D) a requirement that, except where it proves infeasible after a reasonable inquiry, in the licensing of subject inventions shall be given to small business firms; and (E) with respect to a funding agreement for the operation of a Government-owned-contractor-operated facility, requirements (i) that after payment of patenting costs, licensing costs, payments to inventors, and other expenses incidental to the administration of subject inventions, 100 percent of the balance of any royalties or income earned and retained by the contractor during any fiscal year up to an amount equal to 5 percent of the annual budget of the facility, shall be used by the contractor for scientific research, development, and education consistent with the research and development mission and objectives of the facility, including activities that increase the licensing potential of other inventions of the facility; provided that if said balance exceeds 5 percent of the annual budget of the facility, that 75 percent of such excess shall be paid to the Treasury of the United States and the remaining 25 percent shall be used for the same purposes as described above in this clause (D); and (ii) that, to the extent it provides the most effective technology transfer, the licensing of subject inventions shall be administered by contractor employees on location at the facility.

(8) The requirements of sections 203 and 204 of this chapter.

(d) If a contractor does not elect to retain title to a subject invention in cases subject to this section, the Federal agency may consider and after consultation with the contractor grant requests for retention of rights by the inventor subject to the provisions of this Act and regulations promulgated hereunder.

(e) In any case when a Federal employee is a coinventor of any invention made under a funding agreement with a nonprofit organization or small business firm, the

Federal agency employing such coinventor is authorized to transfer or assign whatever rights it may acquire in the subject invention from its employee to the contractor subject to the conditions set forth in this chapter.

(f) (1) No funding agreement with a small business firm or nonprofit organization shall contain a provision allowing a Federal agency to require the licensing to third parties of inventions owned by the contractor that are not subject inventions unless such provision has been approved by the head of the agency and a written justification has been signed by the head of the agency. Any such provision shall clearly state whether the licensing may be required in connection with the practice of a subject invention, a specifically identified work object, or both. The head of the agency may not delegate the authority to approve provisions or sign justifications required by this paragraph.

(2) A Federal agency shall not require the licensing of third parties under any such provision unless the head of the agency determines that the use of the invention by others is necessary for the practice of a subject invention or for the use of a work object of the funding agreement and that such action is necessary to achieve the practical application of the subject invention or work object. Any such determination shall be on the record after an opportunity for an agency hearing. Any action commenced for judicial review of such determination shall be brought within sixty days after notification of such determination.

(As amended Pub.L. 98-620, Title V, § 501(3)-(8), Nov. 8, 1984, 98 Stat. 3364-3366; Pub.L. 102-204, § 10, Dec. 10, 1991, 105 Stat. 1641.)

[1] So in original. An open parenthesis probably should have been inserted here.

[2] So in original. Directory language of Pub.L. 98-620 resulted in two periods following "Department of Energy".

[3] So in original. A comma was probably intended.

§ 203. March-in rights

(1.)[1] With respect to any subject invention in which a small business firm or nonprofit organization has acquired title under this chapter, the Federal agency under whose funding agreement the subject invention was made shall have the right, in accordance with such procedures as are provided in regulations promulgated hereunder to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under

the circumstances, and if the contractor, assignee, or exclusive licensee refuses such request, to grant such a license itself, if the Federal agency determines that such_

(a) action is necessary because the contractor or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(b) action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;

(c) action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or

(d) action is not necessary because the agreement required by section 204 has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204.

(2) A determination pursuant to this section or section 202(b)(4) shall not be subject to the Contract Disputes Act (41 U.S.C. § 601 et seq.). An administrative appeals procedure shall be established by regulations promulgated in accordance with section 206. Additionally, any contractor, inventor, assignee, or exclusive licensee adversely affected by a determination under this section may, at any time within sixty days after the determination is issued, file a petition in the United States Claims Court, which shall have jurisdiction to determine the appeal on the record and to affirm, reverse, remand or modify, ", [2] as appropriate, the determination of the Federal agency. In cases described in paragraphs (a) and (c), the agency's determination shall be held in abeyance pending the exhaustion of appeals or petitions filed under the preceding sentence.

(As amended Pub.L. 98-620, Title V, § 501(9), Nov. 8, 1984, 98 Stat. 3367).

[1] So in original. Probably should read "(1)".

[2] So in original. Quotation marks and second comma probably should not appear.

§ 204. Preference for United States industry

Notwithstanding any other provision of this chapter, no small business firm or nonprofit organization which receives title to any subject invention and no assignee of any such small business firm or nonprofit organization shall grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal agency under whose funding agreement the invention was made upon a showing by the small business firm, nonprofit organization, or assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(Added Pub.L. 86-517, § 6(a), Dec. 12, 1980, 94 Stat. 3023).

§ 205. Confidentiality

Federal agencies are authorized to withhold from disclosure to the public information disclosing any invention in which the Federal Government owns or may own a right, title, or interest (including a nonexclusive license) for a reasonable time in order for a patent application to be filed. Furthermore, Federal agencies shall not be required to release copies of any document which is part of an application for patent filed with the United States Patent and Trademark Office or with any foreign patent office.

(Added Pub.L. 96-517, § 6(a), Dec. 12, 1980, 94 Stat. 3023).

§ 206. Uniform clauses and regulations

The Secretary of Commerce may issue regulations which may be made applicable to Federal agencies implementing the provisions of sections 202 through 204 of this chapter and shall establish standard funding agreement provisions required under this chapter. The regulations and the standard funding agreement shall be subject to public comment before their issuance.

(As amended Pub.L. 98-620, Title V, § 501(10), Nov. 8, 1984, 98 Stat. 3367.)

§ 207. Domestic and foreign protection of federally owned inventions

(a) Each Federal agency is authorized to_

(1) apply for, obtain, and maintain patents or other forms of protection in the United States and in foreign countries on inventions in which the Federal Government owns a right, title, or interest;

(2) grant nonexclusive, exclusive, or partially exclusive licenses under federally owned patent applications, patents, or other forms of protection obtained, royalty-free or for royalties or other consideration, and on such terms and conditions, including the grant to the licensee of the right of enforcement pursuant to the provisions of chapter 29 of this title as determined appropriate in the public interest;

(3) undertake all other suitable and necessary steps to protect and administer rights to federally owned inventions on behalf of the Federal Government either directly or through contract; and

(4) transfer custody and administration, in whole or in part, to another Federal agency, of the right, title, or interest in any federally owned invention.

(b) For the purpose of assuring the effective management of Government-owned inventions, the Secretary of Commerce is authorized to_

(1) assist Federal agency efforts to promote the licensing and utilization of Government-owned inventions;

(2) assist Federal agencies in seeking protection and maintaining inventions in foreign countries, including the payment of fees and costs connected therewith; and

(3) consult with and advise Federal agencies as to areas of science and technology research and development with potential for commercial utilization.

(As amended Pub.L. 98-620, Title V, § 501(11), Nov. 8, 1984, 98 Stat. 3367.)

§ 208. Regulations governing Federal licensing

The Secretary of Commerce is authorized to promulgate regulations specifying the terms and conditions upon which any federally owned invention, other than inventions owned by the Tennessee Valley Authority, may be licensed on a nonexclusive, partially exclusive, or exclusive basis.

(As amended Pub.L. 98-620, Title V, § 501(12), Nov. 8, 1984, 98 Stat. 3367.)

§ 210. Precedence of chapter

(a) This chapter shall take precedence over any other Act which would require a disposition of rights in subject inventions of small business firms or nonprofit organizations contractors in a manner that is inconsistent with this chapter, including but not necessarily limited to the following:

(1) section 10(a) of the Act of June 29, 1935, as added by title I of the Act of August 14, 1946 (7 U.S.C. 427i(a); 60 Stat. 1085);

(2) section 205(a) of the Act of August 14, 1946 U.S.C. 1624(a); 60 Stat. 1090);

(3) section 501(c) of the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 951(c); 83 Stat. 742);

(4) section 106(c) of the National Traffic and Motor Vehicle Safety Act of 1966 (15 U.S.C. 1395(c); 80 Stat. 721);

(5) section 12 of the National Science Foundation Act of 1950 (42 U.S.C. 1871(a); 82 Stat. 360);

(6) section 152 of the Atomic Energy Act of 1954 (42 U.S.C. 2182; 68 Stat. 943);

(7) section 305 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2457);

(8) section 6 of the Coal Research Development Act of 1960 (30 U.S.C. 666; 74 Stat. 337);

(9) section 4 of the Helium Act Amendments of 1960 (50 U.S.C. 167b; 74 Stat. 920);

(10) section 32 of the Arms Control and Disarmament Act of 1961 (22 U.S.C. 2572; 75 Stat. 634);

(11) subsection (e) of section 302 of the Appalachian Regional Development Act of 1965 (40 U.S.C.App. 302(e); 79 Stat. 5);

(12) section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901[1]; 88 Stat. 1878);

(13) section 5(d) of the Consumer Product Safety Act (15 U.S.C. 2054(d); 86 Stat. 1211);

(14) section 3 of the Act of April 5, 1944 (30 U.S.C. 323; 58 Stat. 191);

(15) section 8001(c)(3) of the Solid Waste Disposal Act (42 U.S.C. 6981(c); 90 Stat. 2829);

(16) section 219 of the Foreign Assistance Act of 1961 (22 U.S.C. 2179; 83 Stat. 806);

(17) section 427(b) of the Federal Mine Health and Safety Act of 1977 (30 U.S.C. 937(b); 86 Stat. 155);

(18) section 306(d) of the Surface Mining and Reclamation Act of 1977 (30 U.S.C. 1226(d); 91 Stat. 455);

(19) section 21(d) of the Federal Fire Prevention and Control Act of 1974 (15 U.S.C. 2218(d); 88 Stat. 1548);

(20) section 6(b) of the Solar Photovoltaic Energy Research Development and Demonstration Act of 1978 (42 U.S.C. 5585(b); 92 Stat. 2516);

(21) section 12 of the Native Latex Commercialization and Economic Development Act of 1978 (7 U.S.C. 178(j)[2]; 92 Stat. 2533); and

(22) section 408 of the Water Resources and Development Act of 1978 (42 U.S.C. 7879; 92 Stat. 1360).

The Act creating this chapter shall be construed to take precedence over any future Act unless that Act specifically cites this Act and provides that it shall take precedence over this Act.

(b) Nothing in this chapter is intended to alter the effect of the laws cited in paragraph (a) of this section or any other laws with respect to the disposition of rights in inventions made in the performance of funding agreements with persons other than nonprofit organizations or small business firms.

(c) Nothing in this chapter is intended to limit the authority of agencies to agree to the disposition of rights in inventions made in the performance of work under funding agreements with persons other than nonprofit organizations or small business firms in accordance with the Statement of Government Patent Policy issued on February 18,

1983, agency regulations, or other applicable regulations or to otherwise limit the authority of agencies to allow such persons to retain ownership of inventions except that all funding agreements, including those with other than small business firms and nonprofit organizations, shall include the requirements established in paragraph 202(c)(4) and section 203 of this title. Any disposition of rights in inventions made in accordance with the Statement or implementing regulations, including any disposition occurring before enactment of this section, are hereby authorized.

(d) Nothing in this chapter shall be construed to require the disclosure of intelligence sources or methods or to otherwise affect the authority granted to the Director of Central Intelligence by statute or Executive order for the protection of intelligence sources or methods.

(e) The provisions of the Stevenson-Wydler Technology Innovation Act of 1980, as amended by the Federal Technology Transfer Act of 1986, shall take precedence over the provisions of this chapter to the extent that they permit or require a disposition of rights in subject inventions which is inconsistent with this chapter.

(As amended Pub.L. 98-620, Title V, § 501(13), Nov. 8, 1984, 98 Stat. 3367; Pub.L. 99-502, § 9(c), Oct. 20, 1986, 100 Stat. 1796.)

[1]So in original. Should be "5908".
[2]So in original. Should be "178".

§ 211. Relationship to antitrust laws

Nothing in this chapter shall be deemed to convey to any person immunity from civil or criminal liability, or to create any defenses to actions, under any antitrust law.

(Added Pub.L. 96-517, § 6(a), Dec. 12, 1980, 94 Stat. 3027).

§ 212. Disposition of rights in educational awards

No scholarship, fellowship, training grant, or other funding agreement made by a Federal agency primarily to an awardee for educational purposes will contain any provision giving the Federal agency any rights to inventions made by the awardee.

(Added Pub.L. 98-620, Title V, § 501(14), Nov. 8, 1984, 98 Stat. 3368.)

18 USC 1905, DISCLOSURE OF CONFIDENTIAL INFORMATION GENERALLY

Whoever, being an officer or employee of the United States or of any department or agency thereof, or agent of the Department of Justice as defined in the Antitrust Civil Process Act (15 U.S.C. 1311-1314), publishes, divulges, discloses, or makes known in any manner or to any extent not authorized by law any information coming to him in the course of his employment or official duties or by reason of any examination or investigation made by, or return, report or record made to or filed with, such department or agency or officer or employee thereof, which information concerns or relates to the trade secrets, processes, operations, style of work, or apparatus, or to the identity, confidential statistical data, amount or source of any income, profits, losses, or expenditures of any person, firm, partnership, corporation, or association; or permits any income return or copy thereof or any book containing any abstract or particulars thereof to be seen or examined by any person except as provided by law; shall be fined not more than $1,000, or imprisoned not more than one year, or both; and shall be removed from office or employment.

(June 25, 1948, c. 645, 62 Stat. 791; Sept. 12, 1980, Pub.L. 96-349, § 7(b), 94 Stat. 1158.)

Code of Federal Regulations

- 37 CFR, Chapter 4, Part 404, Licensing of Government Owned Inventions

Regulations for Licensing Government Owned Inventions

The following are the guidelines for licensing Government-owned inventions. They were issued by the Assistant Secretary for Productivity, Technology, and Innovation, U.S. Department of Commerce.

37 Code of Federal Regulations - Chapter 4, Part 404-Licensing of Government Owned Inventions

Sec.

AUTHORITY: 35 U.S.C. 208; sec. 3(g) of DOO 10-1.

SOURCE: 50 FR 9802, Mar. 12, 1985, unless otherwise noted.

§ 404.1 Scope of part.

This part prescribes the terms, conditions, and procedures upon which a federally owned invention, other than an invention in the custody of the Tennessee Valley Authority, may be licensed. It supersedes the regulations at 41 CFR Subpart 101-4.1. This part does not affect licenses which (a) were in effect prior to July 1, 1981; (b) may exist at the time of the Government's acquisition of title to the invention, including those resulting from the allocation of rights to inventions made under Government research and development contracts; (c) are the result of an authorized

exchange of rights in the settlement of patent disputes; or (d) are otherwise authorized by law or treaty.

§ 404.2 Policy and objective.

It is the policy and objective of this subpart to use the patent system to promote the utilization of inventions arising from federally supported research or development.

§ 404.3 Definitions.

(a) "Federally owned invention" means an invention, plant, or design which is covered by a patent, or patent application in the United States, or a patent, patent application, plant variety protection, or other form of protection, in a foreign country, title to which has been assigned to or otherwise vested in the United States Government.

(b) "Federal agency" means an executive department, military department, Government corporation, or independent establishment, except the Tennessee Valley Authority, which has custody of a federally owned invention.

(c) "Small business firm" means a small business concern as defined in section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

(d) "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

(e) "United States" means the United States of America, its territories and possessions, the District of Columbia, and the Commonwealth of Puerto Rico.

§ 404.4 Authority to grant licenses.

Federally owned inventions shall be made available for licensing as deemed appropriate in the public interest. Federal agencies having custody of federally owned inventions may grant nonexclusive, partially exclusive, or exclusive licenses thereto under this part.

§ 404.5 Restrictions and conditions on all licenses granted under this part

(a)(1) A license may be granted only if the applicant has supplied the Federal agency with a satisfactory plan for development or marketing of the invention, or both, and with information about the applicant's capability to fulfill the plan.

(2) A license granting rights to use or sell under a federally owned invention in the United States shall normally be granted only to a licensee who agrees that any products embodying the invention or produced through the use of the invention will be manufactured substantially in the United States.

(b) Licenses shall contain such terms and conditions as the Federal agency determines are appropriate for the protection of the interests of the Federal

Government and the public and are not in conflict with law or this part. The following terms and conditions apply to any license:

(1) The duration of the license shall be for a period specified in the license agreement, unless sooner terminated in accordance with this part.

(2) The license may be granted for all or less than all fields of use of the invention or in specified geographical areas, or both.

(3) The license may extend to subsidiaries of the licensee or other parties if provided for in the license but shall be nonassignable without approval of the Federal agency, except to the successor of that part of the licensee's business to which the invention pertains.

(4) The licensee may provide the license the right to grant sublicenses under the license, subject to the approval of the Federal agency. Each sublicense shall make reference to the license, including the rights retained by the Government, and a copy of such sublicense shall be furnished to the Federal agency.

(5) The license shall require the licensee to carry out the plan for development or marketing of the invention, or both, to bring the invention to practical application within a period specified in the license, and to continue to make the benefits of the invention reasonably accessible to the public.

(6) The license shall require the licensee to report periodically on the utilization or efforts at obtaining utilization that are being made by the licensee, with particular reference to the plan submitted.

(7) Licenses may be royalty-free or for royalties or other consideration.

(8) Where an agreement is obtained pursuant to § 404.5(a)(2) that any products embodying the invention or produced through use of the invention will be manufactured substantially in the United States, the license shall recite such agreement.

(9) The license shall provide for the right of the Federal agency to terminate the license, in whole or in part, if:

(i) The Federal agency determines that the licensee is not executing the plan submitted with its request for a license and the licensee cannot otherwise demonstrate to the satisfaction of the Federal agency that it has taken or can be expected to take within a reasonable time effective steps to achieve practical application of the invention;

(ii) The Federal agency determines that such action is necessary to meet requirements for public use specified by Federal regulations issued after the date of the license and such requirements are not reasonably satisfied by the licensee;

(iii) The licensee has willfully made a false statement of or willfully omitted a material fact in the license application or in any report required by the license agreement; or

(iv) The licensee commits a substantial breach of a covenant or agreement contained in the license.

(10) The license may be modified or terminated, consistent with this part, upon mutual agreement of the Federal agency and the licensee.

(11) Nothing relating to the grant of a license, nor the grant itself, shall be construed to confer upon any person any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use of rights pursuant to this part shall not be immunized from the operation of state or Federal law by reason of the source of the grant.

§ 404.6 Nonexclusive licenses.

(a) Nonexclusive licenses may be granted under federally owned inventions without publication of availability or notice of a prospective license.

(b) In addition to the provisions of § 404.5, the nonexclusive license may also provide that, after termination of a period specified in the license agreement, the Federal agency may restrict the license to the fields of use or geographic areas, or both, in which the licensee has brought the invention to practical application and continues to make the benefits of the invention reasonably accessible to the public. However, such restriction shall be made only in order to grant an exclusive or partially exclusive license in accordance with this subpart.

§ 404.7 Exclusive and partially exclusive licenses.

(a)(1) Exclusive or partially exclusive domestic licenses may be granted on federally owned inventions three months after notice of the invention's availability has been announced in the *Federal Register*, or without such notice where the Federal agency determined that expeditious granting of such a license will best serve the interest of the Federal Government and the public; and in either situation, only if;

(i) Notice of a prospective license, identifying the invention and the prospective licensee, has been published in the *Federal Register*, providing opportunity for filing written objections within a 60-day period;

(ii) After expiration of the period in § 404.7(a)(1)(i) and consideration of any written objections received during the period, the Federal agency has determined that;

(A) The interests of the Federal Government and the public will best be served by the proposed license, in view of the applicant's intentions, plans, and ability to bring the invention to practical application or otherwise promote the invention's utilization by the public;

(B) The desired practical application has not been achieved, or is not likely expeditiously to be achieved, under any nonexclusive license which has been granted, or which may be granted, on the invention;

(C) Exclusive or partially exclusive licensing is a reasonable and necessary incentive to call forth the investment of risk capital and expenditures to bring the invention to practical application or otherwise promote the invention's utilization by the public; and

(D) The proposed terms and scope of exclusivity are not greater than reasonably necessary to provide the incentive for bringing the invention to practical application or otherwise promote the invention's utilization by the public;

(iii) The Federal agency has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the country in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with the antitrust laws; and

(iv) The Federal agency has given first preference to any small business firms submitting plans that are determined by the agency to be within the capabilities of the firms and as equally likely, if executed, to bring the invention to practical application as any plans submitted by applicants that are not small business firms.

(2) In addition to the provisions of § 404.5, the following terms and conditions apply to domestic exclusive and partially exclusive licenses;

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall reserve to the Federal agency the right to require the licensee to grant sublicenses to responsible applicants, on reasonable terms, when necessary to fulfill health or safety needs.

(iii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iv) The license may grant the licensee the right of enforcement of the licensed patent pursuant to the provisions of Chapter 29 of Title 35, United States Code, or other statutes, as determined appropriate in the public interest.

(b)(1) Exclusive or partially exclusive licenses may be granted on a federally owned invention covered by a foreign patent, patent application, or other form of protection, provided that;

(1) Notice of a prospective license, identifying the invention and prospective licensee, has been published in the Federal Register, providing opportunity for filing written objections within a 60-day period and following consideration of such objections;

(ii) The agency has considered whether the interests of the Federal Government or United States industry in foreign commerce will be enhanced; and

(iii) The Federal agency has not determined that the grant of such license will tend substantially to lessen competition or result in undue concentration in any section of the United States in any line of commerce to which the technology to be licensed relates, or to create or maintain other situations inconsistent with antitrust laws.

(2) In addition to the provisions of § 404.5 the following terms and conditions apply to foreign exclusive and partially exclusive licenses:

(i) The license shall be subject to the irrevocable, royalty-free right of the Government of the United States to practice and have practiced the invention on behalf of the United States and on behalf of any foreign government or international

organization pursuant to any existing or future treaty or agreement with the United States.

(ii) The license shall be subject to any licenses in force at the time of the grant of the exclusive or partially exclusive license.

(iii) The license may grant the licensee the right to take any suitable and necessary actions to protect the licensed property, on behalf of the Federal Government.

(c) Federal agencies shall maintain a record of determinations to grant exclusive or partially exclusive licenses.

§ 404.8 Application for a license.

An application for a license should be addressed to the Federal agency having custody of the invention and shall normally include:

(a) Identification of the invention for which the license is desired including the patent application serial number or patent number, title, and date, if known;

(b) Identification of the type of license for which the application is submitted;

(c) Name and address of the person, company, or organization applying for the license and the citizenship or place of incorporation of the applicant;

(d) Name, address, and telephone number of the representative of the applicant to whom correspondence should be sent;

(e) Nature and type of applicant's business, identifying products or services which the applicant has successfully commercialized, and approximate number of applicant's employees;

(f) Source of information concerning the availability of a license on the invention;

(g) A statement indicating whether the applicant is a small business firm as defined in § 404.3(c);

(h) A detailed description of applicant's plan for development or marketing of the invention, or both, which should include:

(1) A statement of the time, nature and amount of anticipated investment of capital and other resources which applicant believes will be required to bring the invention to practical application;

(2) A statement as to applicant's capability and intention to fulfill the plan, including information regarding manufacturing, marketing, financial, and technical resources;

(3) A statement of the fields of use for which applicant intends to practice the invention; and

(4) A statement of the geographic areas in which applicant intends to manufacture any products embodying the invention and geographic areas where applicant intends to use or sell the invention, or both;

(i) Identification of licenses previously granted to applicant under federally owned inventions;

(j) A statement containing applicant's best knowledge of the extent to which the invention is being practiced by private industry or Government, or both, or is otherwise available commercially; and

(k) Any other information which applicant believes will support a determination to grant the license to applicant.

§ 404.9 Notice to Attorney General.

A copy of the notice provided for in § 404.7 (a)(1)(i) and (b)(1)(i) will be sent to the Attorney General.

§ 404.10 Modification and termination of licenses.

Before modifying or terminating a license, other than by mutual agreement, the Federal agency shall furnish the licensee and any sublicensee of record a written notice of intention to modify or terminate the license, and the licensee and any sublicensee shall be allowed 30 days after such notice to remedy any breach of the license or show cause why the license shall not be modified or terminated.

§ 404.11 Appeals.

In accordance with procedures prescribed by the Federal agency, the following parties may appeal to the agency head or designee any decision or determination concerning the grant, denial, interpretation, modification, or termination of a license:

(a) A person whose application for a license has been denied.

(b) A licensee whose license has been modified or terminated, in whole or in part; or

(c) A person who timely filed a written objection in response to the notice required by § 404.7(a)(1)(i) or §404.7(b)(1)(i) and who can demonstrate to the satisfaction of the Federal agency that such person may be damaged by the agency action.

§ 404.12 Protection and administration of inventions.

A Federal agency may take any suitable and necessary steps to protect and administer rights to federally owned inventions, either directly or through contract.

§ 404.13 Transfer of custody.

A Federal agency having custody of a federally owned invention may transfer custody and administration, in whole or in part, to another Federal agency, of the right, title, or interest in such invention.

§ 404.14 Confidentiality of information.

Title 35, United States Code, section 209, provides that any plan submitted pursuant to § 404.8(h) and any report required by § 404.5(b)(6) may be treated by the Federal agency as commercial and financial information obtained from a person and privileged and confidential and not subject to disclosure under section 552 of Title 5 of the United States Code.

SECTION D

THE WHO OF TECHNOLOGY TRANSFER

Role of the Federal Lab Technology Transfer Professionals

Other Technology Transfer Organizations and Resources

- Association of Federal Technology Transfer Executives (AFT^{2}E)
- Association of University Technology Managers (AUTM)
- Commercial Development Association (CDA)
- CorpTech Directory™
- Federal Laboratory Consortium (FLC)
- Licensing Executive Society (LES)
- National Technology Transfer Center (NTTC)
- Product Development and Management Association (PDMA)
- NASA Regional Technology Transfer Centers (RTTCs)
- Technical Entrepreneur's Intrapreneur's Network (TEIN)
- Technology Transfer Society (T^{2}S)

THE "WHO" OF TECHNOLOGY TRANSFER

Federal law and agency directives make it clear that technology transfer, consistent with mission requirements, is a responsibility of each science and engineering professional at every laboratory and R&D center. Furthermore, these policies direct the leadership of each laboratory to ensure that efforts to transfer technology are considered positively in laboratory job descriptions, employee promotion policies, and evaluations of the job performance of scientists and engineers. The reason for this is simple: **successful technology transfer and commercialization requires the active participation of the scientists, engineers, and technology transfer professionals who develop and understand the technology**.

The Office of Research and Technology Applications (ORTA)

The ORTA has been established in each federal laboratory with 200 or more R&D employees as a result of the 1980 Stevenson-Wydler Act. The ORTA assesses R&D projects for potential commercial applications, and its staff makes information on federal technologies available to state and local governments as well as private industry.

Each office has a manager, who is also known as an ORTA. This individual works closely with industry by disseminating all technology transfer information to potential clients while evaluating their ability to adopt the technology. The ORTAs acquire an all-inclusive knowledge of each developing technology by consistent interaction with the scientists and engineers as well as through reviews of patent applications and other relevant documents. These managers may negotiate partnerships with the private sector to conduct dual-use R&D via a Cooperative Research and Development Agreement (CRADA).

Some laboratories may not use the term "ORTA" for their technology transfer professionals. Other terms used include technology transfer program manager. The ORTA can help the scientists and engineers understand and negotiate some of the legal issues involved in technology transfer and help make the technology transfer experience a more rewarding one.

Role of the ORTA

The ORTA is, in essence, a technology commercialization agent, facilitating matches between private sector needs and federal R&D resources.

The ORTA is responsible for a wide variety of technology transfer activities which include the following functions:

- Prepare technology application assessments for selected R&D projects with potential commercial applications.
- Provide and disseminate information on federally owned or originated products, processes, and services having potential application to state and local governments and private industry.
- Cooperate with and assist the Federal Laboratory Consortium (FLC) with Technology Transfer, and other organizations, such as the National Technology Transfer Center (NTTC), which link the laboratory to state and local governments and private industry.
- Provide technical assistance to state and local government officials.
- Participate in regional, state, and local programs designed to facilitate the transfer of technology.

OTHER TECHNOLOGY TRANSFER ORGANIZATIONS AND RESOURCES

To facilitate a smooth transition of technology from federal R&D facilities to nonfederal facilities, various organizations have been established within the government and the private sector to provide skilled technology managers. Their purpose is to disperse the necessary information to parties in need, whether it be specific locations of developing technologies or the correct procedures for establishing a CRADA. These technology transfer "professional" organizations include:

Association of Federal Technology Transfer Executives (AFT^{2}E)

The Association of Federal Technology Transfer Executives (AFT^{2}E) was created in 1992. The main goal of AFT^{2}E is to foster high standards of professionalism among people engaged in the transfer of technology developed at federal laboratories.

AFT^{2}E strives to improve the overall quality of deals transacted between federal laboratories and industry. It creates a network of peers to share experiences and lessons learned along with providing a forum for discussing new ideas, best practices, and impending changes in federal policy.

AFT^{2}E membership provides networking opportunities to share technology transfer and commercialization information with technology managers from federal laboratories, private companies, and economic development groups.

Two annual meetings are held each year. The winter meeting offers intensive basic and advanced training in technology transfer and commercialization. The summer meeting briefs members on topics such as legislative issues, economic development issues, and funding sources relating to technology transfer. Training courses on CRADAs, licensing, and intellectual property negotiation are sponsored by AFT^{2}E.

AFT^{2}E is a member-driven organization with committees designed to encourage discussion on a variety of technology transfer subjects.

For more information on AFT^{2}E, contact the National Technology Transfer Center at:

AFT^{2}E
316 Washington Avenue
Wheeling, WV 26003
(800) 678-6882
http://www.nttc.edu/aft2e.html

Association of University Technology Managers (AUTM)

AUTM is a nonprofit professional and educational society created to assist administrators of patent and copyright programs at universities to license technologies, encourage the production of inventions, and to make appropriate recommendations to assure the effective transfer of technology to the public.

AUTM
49 East Avenue, Norwalk, CT 06851
Phone: (203) 845-9015
Fax: (203) 847-1304
autm@ix.netcom.com
http://www.crpc.rice.edu/autm/

Commercial Development Association (CDA)

CDA is the leading professional association in the chemical and specialty materials industries dedicated to improving the commercialization of new products and technologies. The CDA strives to reduce the risks associated with bringing new products / technologies to market by advancing commercial development skills at the managerial level through networking, education, professional meetings, and best practices.

CorpTech Directory

The CorpTech Directory, winner of "1996 Best CD-ROM Directory" award from the National Directory Publishing Association for the EXPLORE Database, is America's most comprehensive source of technology company information. Whatever information you need about high technology manufacturing companies, you'll find in the CorpTech Database... new companies, emerging companies, growth companies, privately-held companies, subsidiaries, and operating units of American and foreign corporations.

To help you locate potential sources of technology, find sources for funding, and help you license your technologies, companies are profiled by using CorpTech's proprietary coding system encompassing more than 250 major technology areas, further divided into 3,000 product codes.

Comprehensive profiles (updated annually and verified in writing) include employee figures and growth rates, annual sales, and export activity, key executives, full company description, detailed product listings and e-mail and Internet addresses. For further information please contact:

David Froment
CorpTech
12 Alfred St., Suite 200
Woburn, MA 01801
(800)333-8036 ext. 312
dfroment@corptech.com

Federal Laboratory Consortium (FLC) For Technology Transfer

The FLC is an organization developed to serve as a liaison between individual federal laboratories and nonfederal entities interested in developing technologies. The FLC was once the Department of Defense Laboratory Consortium, a group to improve internal communications and aid in private sector applications. The FLC became a chartered organization through the Federal Technology Transfer Act of 1986.

The FLC provides training advice and assistance for individual technology transfer projects to its commercial and government clients. It facilitates interagency / laboratory communications and assists individual laboratories in developing technology transfer mechanisms. Communication and cooperation with private technology transfer organizations and user groups are facilitated as regional advisory groups are developed.

Governed by an executive committee consisting of officers, regional coordinators, and eight at-large representatives, the FLC is composed of all federal laboratories and R&D centers. **The ORTAs, representing the scientists and engineers at their laboratory, are voting members and act as technology transfer officers at the federal laboratories.** These representatives ensure that federal agencies are aware of applications of new technologies developed within their own or other laboratories. The representatives establish networking channels to increase the use of federally developed technology.

The FLC holds one meeting per year and conducts training for new representatives. Its bimonthly newsletter provides updates, summaries of projects, etc., and its clearinghouse routes all requests to any of the six regional coordinators with potentially appropriate technologies.

FLC Administrator
P.O. Box 545
224 W. Washington, #3
Sequim, WA 98382-0545
Phone: (360) 683-1005
Fax: (360) 683-6654
http://www.zyn.com/flc/

Licensing Executives Society (LES)

LES is worldwide federation of business-oriented, professional societies of individuals involved in the transfer of technology and industrial or intellectual property rights. The basic objectives of LES are to provide a vital forum for members to meet and share licensing experiences, facilitate contact between potential licensers and licensees, and further the profession of licensing through educating its members, college students, institutions, governments, and the general public about the economic and social significance of technology licensing.

Licensing Executives Society
1800 Diagonal Road
Suite 280
Alexandria, VA 22314-2840
Phone: (703) 836-3106
Fax: (703) 836-3107

National Technology Transfer Center (NTTC)

The National Technology Transfer Center (NTTC) was created to strengthen the competitiveness of U.S. industry. The NTTC helps business and industry gain easy, rapid, and productive access to marketable technologies, relevant expertise, and unique facilities located within NASA and other federal laboratories. The Center also promotes collaborations between U.S. companies, NASA, and other federal laboratories to develop and commercialize technologies.

The NTTC is the hub for the national technology transfer network to expedite the movement of federally-developed technology into the stream of commerce. The mission of the Center is to:

- Access federal research results, facilities and expertise, and to facilitate the incorporation of commercially-relevant technological products, goods and services.
- Promote programs that enhance local, state and regional economic development efforts.
- Develop and deliver quality, customized professional development training programs for employees of federal laboratories, universities, industry, trade associations, state and local economic development groups, technology transfer and manufacturing modernization groups.

For more information on the NTTC you can contact:

NTTC
316 Washington Avenue
Wheeling, WV 26003
Phone: (800) 678-6882
http://www.nttc.edu

Product Development and Management Association (PDMA)

PDMA is an international association designed to serve people with a professional interest in improving the management of product innovation. Its basic purpose is to seek improvement in the theory and practice of new product planning and development. It is a volunteer organization that consists of all disciplines involved in the product development process.

Product Development and Management Association
401 N. Michigan Avenue, Suite 2400
Chicago, Illinois 60611-4267
1-800-232-5241
pdma@sba.com
http://www.pdma.org

NASA Regional Technology Transfer Centers (RTTCs)

The Regional Technology Transfer Centers (RTTCs) were created by NASA to assist with the transfer of NASA technologies and information to the private sector and to facilitate the commercialization of NASA technologies. The Centers are part of the NASA Technology Transfer Network and each Center is unique in the services it provides. Some of their services are as follows:

- New product identification
- Licensing opportunities
- Business development
- Funds sourcing
- Organizational networking
- Needs assessment
- Technology problem solving
- Engineering and research alternatives
- Research planning and development
- Information retrieval

There are six RTTCs aligned with the FLC regions across the country. They provide a clearer view of technology transfer opportunities close to home:

Northeast

William Gasko, Director
Center for Technology Commercialization
1400 Computer Dr.
Westborough, MA 01581
phone: (508) 870-0042, ext. 114
fax: (508) 366-0101
e-mail: info@ctc.org

Southeast

Ron Thornton, Director
Southern Technology Applications Cntr.
University of Florida
College of Engineering
Box 24, One Progress Blvd.
Alachua, FL 32615
phone: (904) 462-3913
fax: (904) 462-3898
e-mail: jrthorn@nervm.nerdc.ufl.edu

Mid-Continent

Gary Sera, Director
Mid-Continent Technology Transfer Cntr.
Texas Engineering Extension Service
Texas A&M University System
301 Tarrow St., Suite 119
College Station, TX 77843-8000
phone: (409) 845-8762
fax: (409) 845-3559
e-mail: ecsera@teexnet.tamu.edu

Mid-Atlantic

Lani S. Hummel, Director
Mid-Atlantic Technology Application Cntr.
University of Pittsburgh
3400 Forbes Avenue, 5th Floor
Pittsburgh, PA 15260
phone: (412) 383-2500
fax: (412) 383-2595
e-mail: lhummel@mtac.pitt.edu

Mid-West

Christopher Coburn, Exec. Director
Great Lakes Industrial Technology Cntr.
Battelle Memorial Institute
25000 Great Northern Corporate Cntr.
Suite 260
Cleveland, OH 44070
phone: (216) 734-0094
fax: (216) 734-0686
e-mail: coburnc@battelle.org

Far West

Ken Dozier, Director
Far West Technology Transfer Cntr.
3716 South Hope St., Suite 200
Los Angeles, CA 90007-4344
phone: (213) 743-2353
fax: (213) 746-9043
e-mail: nasa@mizar.usc.edu

Technical Entrepreneur's Intrapreneur's Network (TEIN)

TEIN is an educational, scientific, and technical organization created to provide a supportive and catalytic environment for technical entrepreneurs and intrapreneurs including catalyzing formation of "intellectual capital" through educational, networking, and related activities.

Technology Transfer Society (T^2S)

The T^2S is a professional society of diverse and active practitioners who share methods, knowledge, and opportunities in order to achieve desired end results in technology transfer.

Technology Transfer Society
435 N. Michigan Ave., Suite 1717
Chicago, IL 60611
(312) 644-0828
102234.166@compuserve.com
http://www.t2s.org

SECTION E

HOW TO TRANSFER TECHNOLOGY

Types of Technology Transfer

- Spin-On
- Spin-Off
- Dual-Use

What Drives Technology Transfer?

- Market Pull
- Technology Push

Main Modes of Technology Transfer

- Passive
- Semiactive
- Active

TYPES OF TECHNOLOGY TRANSFER

There are three main types of technology transfer. They are:

- **Spin-Off Technology:** This is the traditional Department of Defense (DoD)-type technology transfer program. In this scenario, technology developed to meet a federal laboratory mission is transferred to the private sector, other federal agencies, or state and local governments. The spin-off technology will be used for purposes other than those for which it was created (e.g., acoustics used for the kidney stone removal process and other medical applications).

- **Spin-On Technology:** This refers to nonfederal, commercially viable technologies with a potential for federal laboratory applications.

- **Dual-Use Technology:** This refers to the co-development of a technology by a federal and a nonfederal organization. Costs are shared between the federal laboratory and the nonfederal partner where both will benefit from the R&D results. For example, advanced titanium alloys may improve the performance and safety of jet engines used in both military and civilian aircraft.

WHAT DRIVES TECHNOLOGY TRANSFER?

There are two elements working in concert that drive technology transfer and commercialization. They are:

- **Market Pull** - A need looking for a solution.
- **Technology Push** - An improved product, process, or other technology looking for a problem.

Market Pull

Market pull drives the technology transfer process when existing firms seek better technologies to reduce their costs of production or to make marginal improvements in the quality of their existing products. In this case, a currently perceived "need" is the motivator for action.

The market "pulls" technology into it. A need exists, and there is currently no technology to meet the need. (For example, as automobiles became more complex, there arose a need for technology to control the auto system; thus, microcomputers were incorporated into automobiles.)

Market pull activities include:

- Understanding market needs in detail.
- Searching for appropriate technologies and expertise.
- Confirming the technology's applicability and profitability.
- Understanding the technology producers' technical needs and capabilities.
- Convincing someone to produce the technology in a form adapted to specific needs.
- Managing the adaptation process.
- Managing the adoption process.

Technology Push

Technology push drives the technology transfer process when an innovator sees an opportunity to profit from a technology that has little or no current market. An "entirely new" market is created, based on the novel capacities of the technology.

Technology "pushes" its way into the market economy. Xerox machines, Polaroid cameras, transistors, fax machines, and integrated electronic circuits are good examples of technology push. Users do not know they need a product until it is there.

Technology push activities include:

- Understanding the immediate capabilities of the technology.
- Projecting the future capabilities of the technology.
- Searching for real-world uses and markets for the technology.
- Confirming applicability and profitability of technology with respect to a specific use.
- Convincing the user (and producer) to adopt the technology.
- Help managing the adaptation process.
- Participating in the adoption process.

MAIN MODES OF TECHNOLOGY TRANSFER

There are three modes of technology transfer:

- **Passive Mode** — The potential adopter of technology must search for suitable technologies by either contacting R&D performers or examining archives for the results of R&D (e.g., the end user comes to the lab and performs research on his or her own, without the assistance of a lab scientist, through libraries, data bases, etc.; no technology transfer agent is involved).

- **Semiactive Mode** — A search facilitator or "transfer agent" (ORTA) is added to the system. This person helps users identify technical solutions and may be able to help evaluate technologies.

- **Active Mode** — This is the most expensive and most effective mode of technology transfer. Here a person or small group of people takes personal responsibility to see that a social need is met or a specific, useful technology is adapted to a need or market. These "technology transfer champions" tend to interact with all players within R&D, the market, and regulatory/political arenas when necessary (e.g., develop marketing plans, advertise, actively seek users).

INTERACTION IN TECHNOLOGY TRANSFER

While some methods of technology transfer rely on "impersonal" techniques such as economic incentives or publication of information, it should be noted that most methods involve face-to-face communication. Interaction is key to the process.

Laboratory scientists and engineers must be involved in hands-on partnerships, face-to-face communication, and relationship-building practices. These will make technology transfer efforts successful. Different mechanisms are more appropriate at various stages in the overall technology transfer process.

In order to promote useful interaction, laboratory scientists and engineers could assist with:

- Discerning the readiness of the technology for application to different uses.
- Increasing awareness of potential resources and rewards.
- Increasing awareness of potential adopters of their particular R&D programs.
- Selecting appropriate technology transfer modes and mechanisms.
- Publicizing the activity for continuing support.
- Establishing and utilize measures to evaluate the program.

SECTION F

TECHNOLOGY TRANSFER MECHANISMS

The transfer of technology from one organization to another can occur in a number of ways with each mechanism having its own advantages and disadvantages. Some of the more popular technology transfer mechanisms used by the federal labs are detailed in this section and listed below:

- NASA Mechanisms
- Patent licensing agreements
- Conferences, symposia, tradeshows, and workshops
- Technical assistance
- Personnel exchanges and visits (industry, academia, and state and local governments)
- Grants and cooperative agreements
- Use of laboratory facilities
- Government-funded programs such as the:
  - Technology Reinvestment Project (TRP)
  - Advanced Technology Program (ATP)
  - Small Business Innovative Research (SBIR) Program
  - Small Business Technology Transfer Research (STTR)
- Cooperative Research and Development Agreements (CRADAs)

TECHNOLOGY TRANSFER MECHANISMS

NASA Mechanisms

In an effort to partner with industry more effectively to commercialize NASA technologies, NASA has established several mechanisms to accommodate the variety of circumstances presented by industry. These mechanisms are outlined in the booklet *Partnership Options for NASA and Industry* and on the following pages.

NASA Space Act Agreement (Nonreimbursable)
This is a collaborative R&D effort where NASA and the other party(ies) contribute personnel, use of NASA facilities, expertise, or equipment, technology, etc., but no transfer of funds. NASA participation will require that the other party adequately demonstrate:

(a) the relevance of the proposed activity to a NASA mission or program requirement,
(b) the level of the other party's contribution is adequate compared to NASA's contribution.

No transfer of funds or other financial obligation between NASA and the private entity is permitted. Each party agrees to fund its own participation under this agreement.

NASA can tailor invention and data rights clauses to fit the nature of the agreement. Generally, title to inventions remain with the respective inventing parties without any exchange of rights unless otherwise agreed. The private sector partner can be offered an option to aquifer exclusive or partially exclusive license rights in NASA inventions or joint inventions with NASA on terms to be subsequently negotiated. NASA retains a nonexclusive license for governmental purposes in NASA inventions and joint inventions with NASA. Proprietary data developed by the private sector partner will remain proprietary to the private sector partner. NASA developed "proprietary" data may be used for governmental purposes and protected for up to five years from Freedom of Information Act requests.

NASA Headquarters Offices are authorized to execute nonreimbursable agreements where the NASA nonreimbursed costs do not exceed $25 million per agreement. Field Centers are authorized to enter into agreements not exceeding 25 work years of effort per agreement or $5 million in equipment and/or facilities.

Space Act Agreements may not be used for procuring goods or services. Generally, technical reports and progress reports will be required.

NASA Space Act Agreement (Reimbursable)

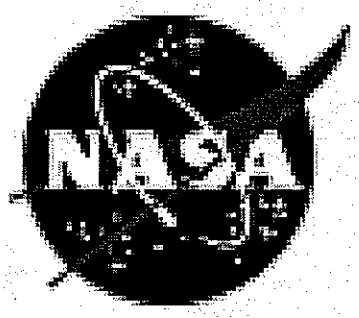
An agreement for the reimbursable use of NASA facilities, personnel, expertise, or equipment by a public or private entity wishing to advance research and development efforts.

The effort involves a transfer of funds or other financial obligation from the private entity to NASA. (NASA will not transfer funds to the other entity.) The terms, conditions, and schedule are negotiable, but NASA must be paid in advance for each stage of the effort. (NASA may not compete with commercially available facilities or services.)

Rights to inventions can be negotiated similar to a nonreimbursable Space Act Agreement. Proprietary data developed by the private sector partner and NASA will remain proprietary to the industry partner and is exempt from release under FOIA.

NASA Headquarters Offices are authorized to execute reimbursable agreements with no dollar limit on the reimbursable costs NASA may incur. Field Centers are generally authorized by a Headquarters' Associate Administrator to enter into agreements involving up to $10 million in reimbursable costs.

No goods or services are provided to NASA. Instead, NASA provides data, facilities, and services to the paying party.

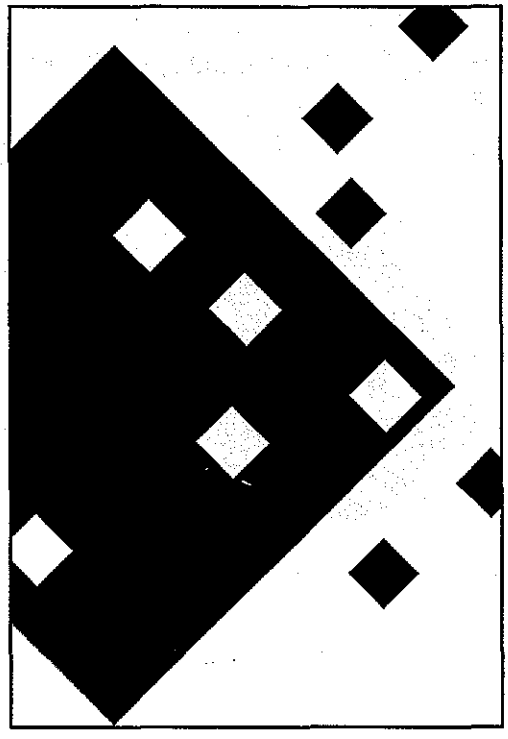


NASA Memorandum of Understanding (MOU)

A Memorandum of Understanding is a statement of policy, practice, or intention affecting a matter of concern to both NASA and another entity. Some highlights of the MOU are as follows:

- No transfer of funds or resources is allowed.
- Terms of agreement are not legally enforceable.
- Signatories at the discretion of interested parties; generally at the NASA Associated Administrator level.
- No goods or services of any kind are allowable to NASA.

Partnership Options for NASA and Industry



***Partnership Options NASA and Industry* outlines all of the available mechanisms for partnering with NASA.**

NASA Cooperative Agreement

- A collaborative effort between NASA and an private sector partner(s) to stimulate and support innovative new technologies and products for commercialization via technology research, development, and/or deployment. Examples include a NASA-Industry cooperative agreement to jointly fund, research, and develop a high-risk technology for potential dual use applications.

- Cash or in-kind contribution by the private sector partner will be required with a general target of at least 30 percent. Cost sharing, payment schedules, and other financial arrangements are open to negotiation and can be structured in any matter agreeable to both parties within the confines of the law. Generally, IR&D funds are not allowable as part of cost sharing.

- Rights to inventions are controlled by statute. Generally, title to inventions remain with the respective inventing parties with the government obtaining a license to all subject inventions arising under the agreement.

- Rights in data are negotiable. Generally, the private sector partner's "proprietary" data is exempted from release under FOIA. NASA developed "proprietary" data may be protected under certain circumstances.

- Substantial involvement between NASA and the other party is required, with NASA playing a significant role in the R&D effort. The specific activities to be performed are not described in detail and reporting requirements can be minimal but the nature of the collaboration and the specific goal of the project must be clearly defined in advance. NASA's Office of Procurement administers all cooperative agreements.

- Cooperative Agreements may not be used for procuring goods or services. Allowable deliverables may include technical and status reports, data, etc.

NASA Joint Sponsored Research Agreement

- A collaborative R&D effort under authority of the Space Act where NASA may provide resources which include funds, services, equipment, information, intellectual property, or facilities on a shared or pooled basis for the purpose of advancing mission goals and transferring the resulting technology to the private sector.

- Cash or in-kind contribution by the industry partner will be required and must be in reasonable proportion to funds committed by NASA. Cost sharing, payment schedules, and other financial arrangements, are in most cases, facilitated by the American Technology Initiative, Incorporated (an authorized non-profit facilitating the commercialization process) but are open to negotiation and can be structured in any matter agreeable to both parties within the confines of the law. IR&D funds can be allowable as part of cost sharing depending on the structure of the deal.

- Rights for inventions resulting from the cooperative effort are negotiable; at a minimum, however, the industry partner obtains commercial rights and NASA retains a limited purpose license for government use. Data rights are also negotiable; generally, the industry partner's proprietary information is exempt from release under FOIA. NASA generated "proprietary" data may be protected depending on circumstances.

- JSRA's shall be for a minimum period of twelve months. Signatory authority resides with the Associate Administrators of The Office of Advanced Concepts and the Office of Aeronautics at NASA Headquarters.

- No goods or services are provided to NASA.

NASA Cost-Shared Contract

- A contract arrangement under which the contractor bears some of the burden of reasonable, allocable, and allowable contract cost. The primary purpose of this agreement is to provide a direct good or service to the government. This is not a means of providing public support and/or stimulation.

- NASA will not pay a fee to the contractor for performing this contract and only an agreed to portion of allowable costs shall be reimbursed. After paying 80 percent of NASA's share of the total estimated performance costs, the contracting officer may withhold further payment until an appropriate reserve amount is set aside. This reserve shall not exceed one percent of NASA's total estimated costs or $100,000, whichever is less.

- The Federal Acquisition Regulation (FAR) Part 27 governs rights to inventions and patents. Generally, title to inventions remain with the respective inventing parties with the government obtaining a license to all subject inventions arising under the agreement. Rights in data are negotiable. Generally, the industry partner's "proprietary" data is exempted from release under FOIA. NASA developed "proprietary" data may be protected under certain circumstances.

- Authority and responsibility to enter into any contract on behalf of the government is reserved for contracting officers. Contracting officers are responsible for ensuring performance of all necessary actions for effective contracting, ensuring compliance with the terms of the contract, and safeguarding the interests of the United States. For more information regarding the specific conditions defining the applicability of a cost shared contract refer to the NASA FAR supplement 18-16.3 or the NASA Office of Procurement.

- Goods and/or services will be provided to NASA as a result of this contract.

Patent Licensing Agreement (PLA)

Research performed at federal facilities frequently produces patented, innovative discoveries of commercial value. These patents are available for licensing to the private sector. Each licensing agreement is individually negotiated between representatives from the laboratory and the prospective licensee.

The license allows the other party to use the invention for its own purposes for a specified time and in exchange for a fee (royalty) to be paid to the patent holder. The patent holder may license partial interest (one-half, one-quarter) of a patent. Licensing agreements can exist with several different users or one user.

Ground rules are set in the PLA that, if broken, can cause termination of the agreement. Termination of an agreement can be the result of an improper execution of the original plan, a willful false statement or omission made in the license application, a breach of the license, or the passing of government regulations (passed after the PLA was signed) stating that this patent is subject to public use. Termination may also occur by mutual consent of both the federal lab and the licensee.

There are three main types of patent licensing agreements:

- **Nonexclusive** - The organization granting the license retains the right to license the same technology again to another party.
- **Partially Exclusive** - The same technology may be licensed again for a different geographical area or for a different application.
- **Exclusive** - The organization granting the license may not license the same technology again to another party.

For information on these and other patent licensing issues, please see the Appendix for the Code of Federal Regulations, Part 404, Licensing of Government Owned Inventions.

For information on obtaining a patent licensing application, see your patent counsel or Office of Research and Technology Applications (ORTA).

Conferences, Symposia, Tradeshows, and Workshops

Membership in industry groups and professional associations is a very important tool in assisting technology transfer. It is through these organizations that commercial contacts are made, new ideas germinate, current ideas are built upon, information flows, training can take place, and the preliminary steps of technology transfer naturally occur.

Expositions and trade shows provide opportunities for federal laboratory engineers and scientists to showcase technologies to potential partners and to take the all-important step of obtaining exposure for the laboratory's capabilities and achievements.

The exposure received by participation in the above activities significantly enhances the probability of successful technology transfer. It is true that the more exposure a laboratory gains, the easier it is for outside sources to find the technologies residing in the lab; therefore, it requires less effort to achieve the technology transfer mission.

A list of technology transfer associations is provided in the Appendix.

CAUTION: Be very careful of publishing information about your technology before a patent, copyright, or licensing agreement is considered or written. There is a danger of forfeiting all intellectual property rights with a premature publication or information about your technology. If in doubt, check with your ORTA.

Technical Assistance

Frequently, technology transfer occurs in the form of technical assistance provided to nonfederal persons via telephone inquiries or other contacts. Some ORTAs can guide scientists and engineers in the procedure for handling such inquiries.

Caution needs to be exercised when providing technical assistance. It is important that the laboratory person does not cross over into the role of "consultant." Answering direct technical questions is appropriate. However, giving subjective guidance and acting as an advisor/consultant are to be avoided. Answering a question such as, "What is the result to tensile strength when adding this impurity?" is appropriate, but directing them to establish a program to test different types of impurities could cross the line.

Often, the wording or implications of words can convert appropriate technology transfer into the realm of consulting. Since the case-by-case examples of this will vary, federal lab personnel should consult their ORTA if they have any questions.

Technical assistance is also provided by Manufacturing Technology Centers (MTCs) and Manufacturing Extension Partnerships (MEPs) which were established throughout the country by NIST. They facilitate the transfer of federal technologies to industry in order to improve their products and processes. For more information on MTCs and MEPs contact NIST at:

National Institute of Standards and Technology
Gaithersburg, MD 20899-0001
http://www.atp.nist.gov/

Personnel Exchanges

The exchange of personnel between federal and nonfederal laboratories is a key means of technology transfer. Personnel exchanges provide an opportunity for federal lab engineers and scientists to receive an insider's look at external laboratories where new ideas, process improvements, enhancements, and shortcuts can take place. Federal lab personnel can also learn from the contributions of external engineers and scientists who are temporarily assigned to their laboratories.

Through personnel exchanges, each party gains insight into the problems of the other partner. This helps to facilitate the transfer of technology between federal and commercial applications. The benefits of personnel exchanges are extensive.

Grants and Cooperative Agreements

Grants and cooperative agreements are entered into solely by the government, not by the individual labs. Money or property is transferred to a recipient to support or stimulate research. For more information on grants and other funding providers, you could contact the following sources:

Community of Science **(http://cos.gdb.org/)**
The *Community of Science* is designed to help you identify and locate researchers with interests and expertise similar to your own. It contains an on-line inventory of researchers, inventions, and facilities at leading U.S. and Canadian universities and other R&D organizations. The *Community of Science* contains first-person expertise records, inventions records, and facilities records.

Information can be found for:

- *Commerce Business Daily*
- *Federal Register*
- Federally Funded Research at the National Institutes of Health, National Science Foundation, U.S. Department of Agriculture, Small Business Innovation Research Program, National Institute of Standards and Technology
- Minority Funding Opportunities
- Canadian Community of Science Databases

Federal Information Exchange (http://web.fie.com/index.htm)
The Federal Information Exchange (FEDIX) is a free on-line information retrieval service of federal opportunities for the education and research communities. FEDIX provides instant access to federal agency information on research programs, contact information, education grants, procurement notices, minority opportunities, and more. It is a convenient one-stop source of current federal funding information that benefits educators and researchers. Key federal agencies support FEDIX under a cooperative agreement from the Department of Energy.

GrantsWeb (http://web.fie.com/cws/sra/resource.htm)
GrantsWeb is a starting point for accessing grants-related information and resources on the Internet including funding opportunities, grants databases, policy developments, and professional activities.

GrantsNet (http://www.os.dhhs.gov/progorg/grantsnet/)
GrantsNet is a hub for federal grants information and lists who's who in federal grants management, contains the Catalog of Federal Domestic Assistance, provides links to other grants related electronic networks, and contains a calendar of events.

Use of Laboratory Facilities

Universities, industry, the technical community, and other government facilities may utilize equipment and expertise at a federal laboratory which was designed by the government for use by these groups.

Features of this type of arrangement:

- Includes designated user facilities and other user resources.
- Research may be conducted on a proprietary or nonproprietary basis.
- Full cost recovery is required for proprietary R&D.
- Class patent waiver may be granted in which title goes to the user and the

user's proprietary data can be protected.

- For nonproprietary R&D, title to inventions goes to the user, but data generated are freely available.
- If funded under another government contractor or international agreement, users are subject to those intellectual property clauses.
- Availability of federal laboratory facilities for use by nonfederal entities will vary by agency and by laboratory.

Government-funded Programs

Technology Reinvestment Project (TRP)

The Technology Reinvestment Project (TRP) was established in 1993. The program's goal was to develop militarily useful, commercially viable technology in order to improve the DoD's access to affordable, advanced technology. All of the projects funded under TRP were selected competitively, with competitions held in 1993, 1994 and 1995. To date, approximately $686 million in DoD funds have been committed to 131 technology development projects. In addition, each of these projects must receive at least an equal amount of its funding from private organizations.

The TRP was managed by the Defense Advanced Research Projects Agency (DARPA), with participation by the Army, Navy and Air Force, the Departments of Transportation, Commerce, and Energy, the National Aeronautics and Space Administration, and the National Science Foundation. All funding was provided by DoD. No further TRP competitions are planned. The projects that were selected in the 1995 competition are just beginning, while work on many of the projects selected in 1993 and 1994 competitions continues. Work on TRP projects will now be monitored by the newly established Joint Dual Use Program Office.

Joint Dual Use Program Office

In December 1995, DDRE, DARPA, and the Army, Navy and Air Force signed a Memorandum of Understanding establishing the Joint Dual-Use Program Office (JDUPO). This office will develop a service centered, DoD-wide approaches to commercial leveraging for more effective, affordable, and sustainable military systems. It will conduct competitions, serve as a facilitator and trainer for the Services, monitor ongoing efforts and advise the Military Departments on dual-use procedures. In addition, the JDUPO office will

continue to monitor ongoing TRP competitions. The Office is staffed with a DARPA representative and three Service representatives (one from the Army, Navy, and Air Force).

For more information on the TRP:

Advanced Research Projects Agency
Technology Reinvestment Project
3701 N. Fairfax Drive
Arlington, VA 22203-1714
1-800-DUAL-USE
http://www.jdupo.darpa.mil/jdupo/index.html

Advanced Technology Program (ATP)

Begun in 1990, the Advanced Technology Program at the National Institute of Standards and Technology invests directly in the nation's economic growth by working with industry to develop innovative technologies with strong commercial potential -- technologies which, if successful, would enable novel or greatly improved products and services for the world market. The ATP concentrates on promising, but high-risk, enabling technologies that can form the basis for new and improved products, manufacturing processes, and services. It accelerates technologies that, because they are risky, are unlikely to be developed in time to compete in rapidly changing world markets without such a partnership of industry and government. It does not fund product development.

Early results indicate that the ATP is successfully improving the capability of the nation's businesses to capture economic returns from scientific and technological innovations. Two independent studies of projects funded in FY 1991 revealed substantial, early beneficial impacts on participating companies.

For more information on ATP:

Advanced Technology Program
A430 Administration Building
National Institute of Standards and Technology
Gaithersburg, MD 20899-0001
1-800-ATP-FUND
1-301-926-9524 (fax)
http://www.atp.nist.gov/

Small Business Innovation Research (SBIR)

The SBIR program was established by Congress in 1982 to promote small business participation in federal research and development to enhance U.S. competitiveness and increase employment opportunities.

Objectives of the program:

- Stimulate U.S. technological innovation.
- Use small businesses to meet federal R&D needs.
- Foster and encourage participation by socially and economically disadvantaged persons in technological innovation.
- Increase private-sector commercialization of innovations derived from federal R&D.

Funding for the SBIR program comes from a percentage of the R&D budgets of the federal agencies listed below:

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Education
- Department of Energy
- Department of Transportation
- Environmental Protection Agency
- National Aeronautics and Space Administration
- National Science Foundation
- Nuclear Regulatory Commission

For more information on the SBIR program, the following page contains contacts for the various agencies along with a few additional resources.

Small Business Technology Transfer Research (STTR)

The Small Business Technology Transfer Research (STTR) pilot program is modeled on the SBIR program. Its objective is to encourage technology transfer through cooperative research between small business concerns and research institutions and create an effective way for small businesses to move commercially promising ideas from the nation's research institutions to the marketplace.

Only small businesses and their nonprofit research institution partners (nonprofit institutions or federally funded research and development centers) may compete in STTR. Research is to be conducted jointly by a small business concern and its partner. Not less than 40 percent of the work must be performed by the small business concern and not less than 30 percent by the nonprofit research institution.

The STTR is funded by the Department of Defense, Department of Health and Human Services, National Aeronautics and Space Administration, Department of Energy, and the National Science Foundation.

For more information on the STTR program, contact the National Technology Transfer Center's World Wide Web page at: http://www.nttc.edu/solicitations.html

SBIR and STTR Contacts at the Federal Agencies

Department of Agriculture		(202) 401-5048
Department of Commerce (SBIR only)		(301) 713-3565
Department of Defense		(800) 363-7247
Department of Education		(202) 219-2065
Department of Energy		(301) 903-5707
Department of Health & Human Services		(301) 206-9385
Department of Transportation (SBIR only)		(617) 494-2051
Environmental Protection Agency		(919) 541-5293
National Aeronautics & Space Administration		(301) 286-8888
National Institute of Health	(STTR) (SBIR)	(301) 496-2351 (301) 435-2770
National Science Foundation		(703) 306-1390

HOW TO GET STARTED IN SBIR

Small Business Administration	
SBIR Pre-Solicitation Mailing List	(202) 205-6450
General SBIR Information	(800) 827-5722
	http://www.sbaonline.sba.gov
Department of Defense Mailing List	(800) 363-7247
Community of Science Internet	http://cos.gdb.org/best/fedfund/sbir/sbir-intro.html

Cooperative Research and Development Agreement (CRADA)

A CRADA is an agreement between one or more federal laboratories and one or more nonfederal parties to perform cooperative and mutually beneficial (R&D). Under a CRADA, both the federal laboratories and the nonfederal partner can provide personnel, services, facilities, equipment, or other resources with or without reimbursement. The nonfederal partner is permitted to provide funds to the CRADA while the federal partner is not.

Many times, industrial partners are reluctant to enter into a CRADA with a federal laboratory because they expect to encounter the lengthy and complex procurement process governed by the Federal Acquisition Regulations (FAR). It is, therefore, important to point out to potential partners that because the federal lab does not provide funds to the nonfederal partner, CRADAs are procurements. The development, approval, and implementation of a CRADA can be extremely simple, especially when a standard CRADA is used. (See the Appendix for sample CRADAs)

Both parties to a CRADA benefit because:

- The opportunity is available to obtain access to federal science and technology.
- The opportunity is available to acquire rights to inventions and licensing.
- Both organizations share disclosure agreements, costs, results, and contributions.

Ways to Use a CRADA

Many CRADAs fall into several common categories. These reflect the subject matter and purpose of the agreement. They are:

- **Codevelopment and Marketing of a Product.** Requires special attention to patents, licenses, and royalties.
- **Codevelopment and/or Modification and Marketing of Software.** Requires special attention to copyrights.
- **Use of Federal Laboratory Facilities.** Special attention is paid to liability, cost reimbursement, and the definition of the federal facilities' responsibilities.
- **Supplying of Funds for Research and Development.** The primary contribution of the nonfederal partner is the supplying of funds for R&D to be executed by the federal lab partner.

SECTION G

INTELLECTUAL PROPERTY PROTECTION

The following pages describe the forms of intellectual property and the rights that the employee / inventor has regarding intellectual property. This section also describes how federal laboratory employees must protect their own intellectual property, as well as proprietary information belonging to the nonfederal partner to a technology transfer initiative. Intellectual property applies to inventions and discoveries, writings, and know-how.

- Forms of Intellectual Property
  - Patents
  - Copyrights
  - Trademarks
  - Trade Secrets
- Electronic Publishing
- Ownership of Intellectual Property
- Protecting Intellectual Property
- How to Use Your Laboratory Notebook

INTELLECTUAL PROPERTY

Forms of Intellectual Property

"Intellectual property" refers to any product of the human intellect, such as an idea, invention, expression, business method, industrial process, chemical process, and others that have value in our marketplace. It is a substantial consideration in the technology transfer process because it can affect the marketability of a product, selection of manufacturers, use of the invention, and receipt of payments.

U.S. law provides protection for intellectual property through the use of the following:

- Patents
- Trademarks (Service, Collective, Certification)
- Trade secrets
- Copyrights

These protections have a direct impact upon how technology transfer is conducted at federal facilities. Although not all of these protections apply to government facilities, the failure to consider intellectual property rights can result in lost opportunities and/or serious liability issues.

PATENTS

Definition

A patent is a grant or property right given by the government to the inventor. The patent gives the inventor the right to take action which excludes others from making, using, or selling the invention for a period of 20 years but does not automatically restrict infringement. The patent does, however, give the inventor the right to bring a lawsuit against those who attempt to make, use, or sell the invention without permission of the inventor.

U.S. law allows an inventor to file for patent protection for one year after the invention is disclosed. Public speeches or publications can constitute disclosure. **International patent rights, however, are possibly lost <u>immediately</u> upon disclosure**. This makes it very important that researchers coordinate with the ORTA before publishing or speaking openly about their discoveries.

Who Can Apply for a Patent?

In the United States, a patent application can only be filed by the inventor, who must be an individual or group of individuals. The inventor cannot be a corporation, partnership, joint venture, or other business entity. An inventor may, however, assign his or her rights in the patent to other individuals or legal entities such as corporations or the U.S. government.

Can Anything Be Patented?

Patent coverage is broad and therefore separated into several categories:

- **Process.** A series of actions or operations achieving a physical or chemical change in the character or condition of an object (e.g., freeze-drying fruit, vegetables, coffee).
- **Machine.** Any apparatus having an assembly of parts that function in conjunction with one another (e.g., the steam engine).
- **Manufactured Article.** Any articles made from raw materials (e.g., clothing, sneakers).
- **Composition of Matter.** Any results of chemical compounds or mixtures of substances that have properties different from those of the individual ingredients (e.g., flour, water, and yeast combined in the proper proportions to create bread dough).
- **Any new or useful improvements on the above.**

Are There Things Which Cannot Be Patented?

Some subject matter categories are not eligible to be patented. They are:

- Any process that can be performed mentally or with very simple objects, such as a pencil
- Printed matter
- Methods of doing business
- Anything which occurs naturally in nature
- Purely scientific principles

Patents fall into several different categories:

- **Utility Patent -** Inventions that are useful (e.g., no-refrigeration-needed juice cartons, Unicoat paint).
- **Design Patent** - A new, original, and ornamental design that does not

change the structure or utilitarian features of an article of manufacture (e.g., football team uniforms).

- **Plant Patent** - Asexually reproducible plants, such as flowers (e.g., American Beauty Rose).

TRADEMARKS

Trademark protection applies to "any word, name, symbol, or device, or any combination thereof adopted and used by a manufacturer or merchant to identify his goods and distinguish them from those manufactured or sold by others" as defined in section 45 of the 1946 Trademark Act.

The owner of the trademark can exclude others from using the same or a similar mark on goods where it is likely to confuse the consumer as to the source of the goods. This right is acquired only by "use in commerce which may be lawfully regulated by Congress," and the use must continue if the rights acquired are to be preserved.

Registration of a trademark by the Patent Office does not establish exclusive rights but is recognition by the government of the right of the owner to use the mark in commerce to distinguish his goods from those of others.

The Trademark Act of 1946 also provides for other registrations of:

- **Service marks** are marks used in the sale or advertising of services to identify the services of one person and distinguish them from the services of others. Titles, character names, and other distinctive features of radio or television programs may be registered as service marks, notwithstanding that they, or the programs, may advertise the goods of the sponsor (e.g., Blue Cross/Blue Shield, Prudential Insurance are service marks for health insurance and general insurance services).
- **Collective marks** are trademarks or service marks used by the members of a cooperative, an association, or other collective group or organization. Marks used to indicate membership in a union, an association, or other organization may be registered as Collective Membership Marks.
- **Certification marks** are marks used upon or in connection with the products or services of one or more persons other than the owner of the mark to certify regional or other origin, material, mode of manufacture, quality, accuracy, or other characteristics of such goods or services, or that

the work or labor on the goods or services was performed by members of a union or other organization.

Trademark Registration and Fees

Registrations issued under the Trademark Act of 1946 remain in force for 20 years from the date of registration and may be renewed for periods of 20 years from the expiration date unless previously canceled or surrendered.

Examples of trademarks include:

- Words (e.g., LIFE, TIME)
- Geometric shapes (e.g., circles, triangles), natural shapes (e.g., trees, animals), combinations of shapes, colors (e.g., pink has been trademarked for building insulation), and three dimensional shapes (e.g., McDonald's golden arches)

United States Patent and Trademark Office

The United States Patent and Trademark Office issues and maintains all patents within the U.S. For more information on patents, you can contact them at:

U.S. Patent and Trademark Office
Commissioner of Patents and Trademarks
Washington, D.C. 20231
(800) PTO-9199
(703) 308-4357
http://www.uspto.gov/

TRADE SECRETS

Trade secrets protect any information, design, device, process, composition, technique, or formula that is maintained as a secret and gives its owner a competitive business advantage. Examples of trade secrets are:

- Customer lists
- Sources of supply of scarce material
- Formulas
- Techniques
- Manufacturing know-how
- Business plans

There is no formal procedure employed for establishing protection of trade secrets. Protection can be established by the nature of the secret and the effort to keep it secret.

While the government does not keep trade secrets, under a CRADA confidential information can be protected from public disclosure for up to five years. See your ORTA for specific guidance on this if you are conducting R&D under a CRADA.

COPYRIGHTS

Unlike a patent, a copyright protects the form of expression rather than the subject matter of the work. Current copyright law states that copyright protection is not available for any work of the U.S. government, but that the government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.

A copyright protects original works of authorship fixed in any tangible medium of expression, including:

- **Nondramatic literary works**, such as fiction, nonfiction, poetry, textbooks, reference works, directories, catalogs, advertising copy, periodicals and serials, and compilations of information. Computer software also falls into this category.
- **Works of the performing arts**, such as musicals, dramatic works, pantomimes, choreographic works, and motion pictures.
- **Works of the visual arts**, such as two-dimensional and three-dimensional works; photographs; prints and art reproductions; maps, globes, and

charts; technical drawings, diagrams, and models; and pictorial or graphic labels and advertisements.

- **Sound recordings** of music and sounds, including records, tapes, and CDs.

Copyrighting Software

The Computer Software Copyright Act of 1988 extended copyright protection to computer programs which are defined as sets of statements or instructions to be used directly or indirectly in order to bring about a certain result. This definition does not include data bases or supporting manuals which should be copyrighted separately. Legislation, however, has not granted copyright authorization to federal software (computer software and supporting documentation).

Businesses are hesitant to transfer software without copyright protection. Some companies form CRADAs to either develop the software jointly or to expand upon existing government software. Either way, the commercial company may apply for the copyright provided the government retains a nonexclusive, nontransferable, irrevocable, paid-up license to use or have others use the invention anywhere in the world for the benefit of the government.

Obtaining Copyright Protection

The author of an original work may, but need not, register the work with the Library of Congress Copyright Office to claim copyright protection. Subject to certain limitations, the copyright owner has the exclusive right to do or authorize certain activities, including:

- Reproduction of the copyrighted work in copies or phonorecords
- Preparation of derivative works
- Distribution of copies of the copyrighted work to the public
- Performance or display of the copyrighted work publicly

Copyright protection timeframes are as follows:

- **Single Author**. The length of the author's life plus 50 years.
- **A Work Made For Hire**. 75 years from first publication or 100 years from the work's creation whichever comes first.
- **Joint Work (prepared by two or more authors who did not work for hire)**. The length of the life of the last surviving author plus 50 years.

Cost

The current cost of applying for a copyright is $20. There are no maintenance fees involved with copyrights.

Electronic Publishing

The Information Infrastructure Task Force (IITF) was created by the Clinton administration to tackle the issues concerning electronic publication of information and the effects that may have on American businesses.

In September 1995, the IITF released a paper detailing its findings and has sent proposed amendments to the Copyright Act to Congress. The task force determined that electronic publication could be handled within the current copyright laws with some modifications. Some of their recommendations include:

- Amending the current law to recognize that electronic transmission of information may constitute "publication"
- Indicating that the holder of the copyright should be the only source able to distribute copies of the transmission.

For more information on the IITF **http://iitf.doc.gov/**

The Intellectual Property Rights Working Group of the IITF develops proposals for protecting copyrights and other IPR in an electronic world. This group is chaired by Bruce Lehman, head of the Patent and Trademark Office, Department of Commerce. You can contact Michael Keplinger at **(703) 305-9300** for more information.

Library of Congress

The Library of Congress issues and maintains copyright applications based on protection provided by the laws of the United States title 17 of the U.S. Code. A copy of a copyright application, Form TX, for published and unpublished nondramatic literary works can be found in the Appendix.

For more information on copyrights, you can reach the Copyright Office at :

Copyright Office
LM455
Library of Congress
Washington, D.C. 20559-6000
(202) 707-3000
http://www.loc.gov/copyright
gopher: marvel.loc.gov
telnet: marvel.loc.gov (login as marvel)

OWNERSHIP OF INTELLECTUAL PROPERTY

Employee Ownership

The criteria for determining whether the government or the employee has rights to an invention are as follows:

- Inventions that are developed by employees during government time and using government funds are the property of the U.S. government. Since the government cannot file for a patent, the patent is filed for and issued to the responsible individual or group of individuals. The legal rights to the patent, however, are assigned to the government.

- If the government is not interested in filing a patent application for an invention created with government funds or at a government facility, the employee inventor may claim title to the invention by filing a patent application at personal expense; however, the government retains a nonexclusive, nontransferable, irrevocable, paid-up license to use or have others use the invention anywhere in the world for the benefit of the government.

- Title to the invention may belong exclusively to the employee inventor if the employee makes the invention on personal time and the invention is not within the scope of employment.

PROTECTING INTELLECTUAL PROPERTY

In collaborative technology transfer efforts, it is quite likely that the commercial partners will share or make known proprietary information while supporting the initiative. These data may be technical, financial, or any that contain trade secrets developed at private expense such as design procedures and techniques, chemical composition of materials, manufacturing methods, processes, or treatments, including minor modifications.

Proprietary data are not generally known by or available from other sources, have not been made available by the owner to others without restriction, and are not already available to the government without obligation concerning their confidentiality. In general, proprietary data should be identified as such by the private sector partner and clearly marked as such.

Proprietary information and data require protection in order to retain their commercial value. Some general guidelines should be established to ensure protection. These are outlined on the following section.

Unpublished Information

Caution should be taken to avoid premature disclosure of information that may be the subject of a patent application. Technical information should not be released until a scientist or engineer has discussed the contents with the legal counsel or local ORTA or equivalent office. It also may be necessary for the security office to review materials when sensitive information is involved.

Protecting Confidential or Proprietary Information

It is a criminal offense for an employee of the United States to release trade secrets and other forms of confidential[1] or proprietary information. The United States Code (18 USC 1905) states that a government employee who makes known in any manner not authorized by law any confidential or proprietary information coming to him or her in the course of his or her official duties shall be fined not more than $1,000 or imprisoned not more than one year, or both; and shall be removed from office or employment. The text of 18 USC 1905 appears in the Appendix.

[1]The term "confidential information" used here is not the same as confidential information protected as national security information in Executive Order 12356.

General Guidelines to Ensure Protection of Proprietary Information

Organizations should establish a policy that states the importance of protecting proprietary information and establish guiding principles for carrying out that policy and negotiating the restrictions on use of the data. Suggested principles are listed below:

- Limit the acceptance of proprietary data to information that is absolutely essential to the success of the project or program objectives.
- Limit the use of proprietary data to those activities or individuals that need to know.
- Determine where the proprietary data are to be accessed and stored.
- Do not agree to protect orally transmitted information or data unless they are promptly reduced to writing by the owner or sponsor and appropriately marked with a legend.
- Categorize information that is received.
- Place legends on proprietary data that specifically identify the restrictions for use and disclosure of the information or data.
- Identify the office or personnel responsible for the management of proprietary data. These responsibilities include:
  - — The determination of what proprietary information is essential to the project or program objectives.
  - — The overall protection of proprietary data.
  - — The assurance that each employee is aware of the confidential nature of proprietary data and the responsibility to protect it (provisions of 18 USC 1905 apply to government employees; see Appendix).
  - — The formal receipt for proprietary data.
  - — The assurance that contractors abide by the terms of any nondisclosure agreements they have signed.

Record of Invention and Disclosure Form

The Record of Invention and Disclosure Forms assists employees in documenting and reporting an invention. This process aids the federal lab in determining if pursuit of a patent is warranted. The form also provides a means of tracking all initiatives to compare current research efforts with past years.

The Record of Invention and Disclosure provides a record of vital information should unforeseen circumstances affect the inventor or his notes. These forms must be submitted together with any necessary sketches or drawings. A sample Record of Invention and Disclosure is included in the Appendix.

Details of the invention must be documented in a way that can be readily understood by those who process the forms. The detailed description should be written so that anyone experienced in the field can comprehend and understand the subject matter.

When feasible, references should be made to specific components which are visually displayed by a drawing or sketch. If the invention is a process or chemical composition, each step should be set forth clearly. If the invention is a machine, each part should be accurately delineated. To aid the reader, a running narrative statement is to be included that describes the overall/total operation.

The Record of Invention and Disclosure records information that proves priority to the invention (i.e., proves who was the first inventor). It becomes a part of the permanent invention case file record.

Laboratory Notebook

The process of documenting experiments, theories, ideas, and actions on a regular basis is very important when conducting research. It is especially crucial that the documentation process be followed by all parties involved in any technology transfer initiatives.

Laboratory notebooks are important because:

- They provide proof of the first inventor.
- They demonstrate the novelty of the invention by proving that it was discovered before any prior public knowledge of development of the concept.
- They demonstrate that the invention was not obvious. Properly recorded

notes will reveal successful, as well as unsuccessful, attempts at the invention. It will show that some conclusions were tested and found to be untrue before the discovery of the finished product.

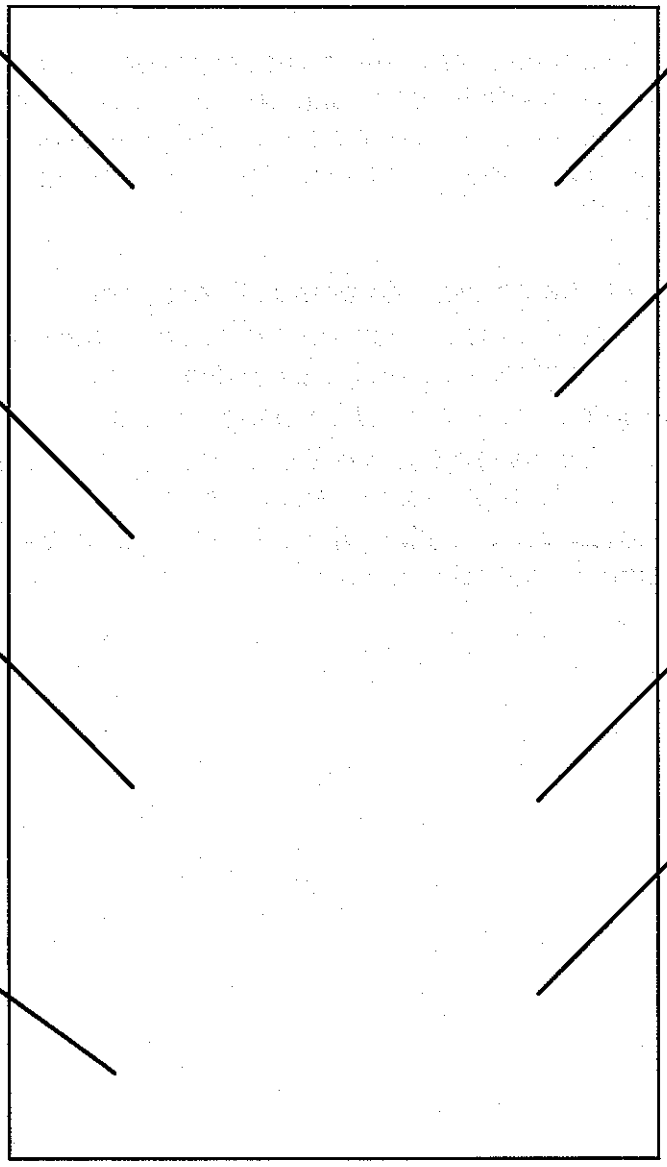
Tips for Keeping Notes

In maintaining this notebook, there are some standard conventions that, if followed, can avert misunderstandings, inefficiencies, and potential disasters. Routinely following these record keeping practices will also help expedite the patent application process while significantly increasing your chance of receiving the patent and subsequent royalty payments:

- Notebooks should be bound with prenumbered pages.
- Entries should record all ideas, experiments, and tests as well as related activities such as conferences and the making of test equipment.
- Each page of the notebook should be signed and dated.
- Joint work should be signed by all of the contributors, and the text should indicate which work is applicable to each inventor.
- Entries that relate to an invention which is potentially patentable should be signed and dated by two witnesses.

How to Use Your Laboratory Notebook

Record data directly into the notebook and do not make notes on loose paper to be recopied.



To show conception of an invention, disclosure of a complete and operative method or means to accomplish a particular purpose or result.

Do not change drawings in the notebook - make new ones.

Make entries in ink - to avoid any suspicion of alteration.

Do not leave empty spaces - if you skip a page or part of a page, draw a cross-diagonal line throughout the blank portion.

Do not erase any part of an entry - draw a line throughout the material to be deleted.

Initial and date any corrections.

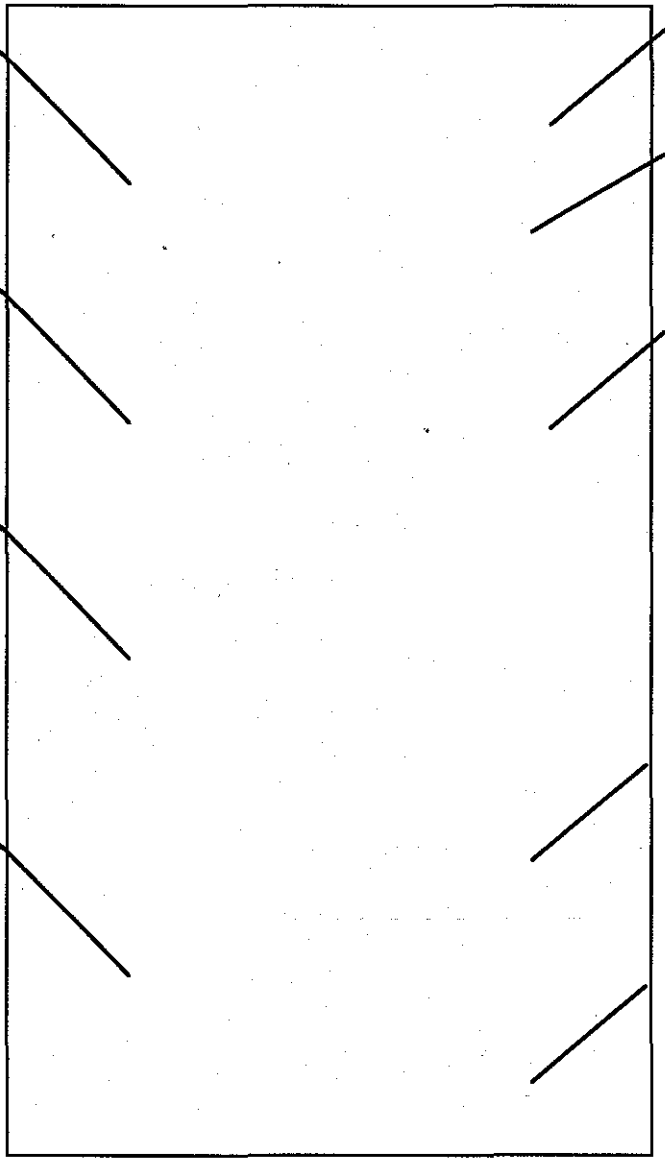
Any entry which relates to a possibly patentable invention should be signed and dated by 2 witnesses - with their signatures under the caption "disclosed to and understood by."

Sign and date every page as completed.

One purpose of a notebook is to protect your patent rights and the rights of the government by keeping records of all original work in a form acceptable as evidence if any legal conflict arises.

How to Use Your Laboratory Notebook

Entries should be made to record not only ideas, experiments, and tests, but also to record related activities such as conferences and the making of test equipment.



Separate sheets and photographs affixed to pages should be referred to in an entry.

Entries should be in chronological order.

Sign and date affixed material such that the signature is partially on the laboratory notebook page and partially on the affixed material that cannot be entered directly.

Witnesses who have observed and understood the performance of an experiment or test should sign their signatures under the caption "performance observed and understood by."

Use pages in consecutive order.

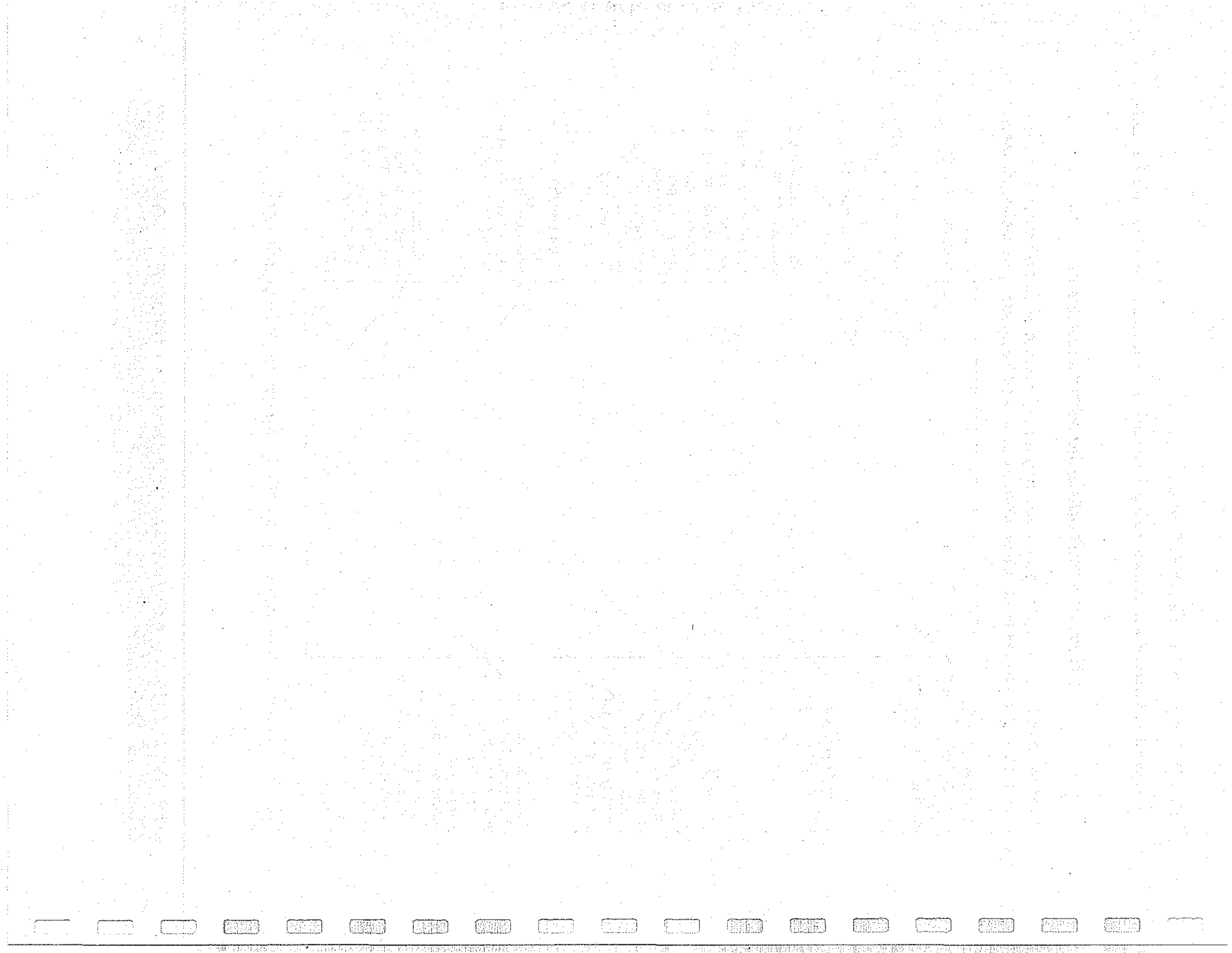
Keep your notebook intact. Do not tear out pages or remove affixed material.

To show reduction to practice of an invention, an entry should describe the purpose of an experiment or test, the method or means chosen to perform it, and the results obtained from the performance - both favorable and unfavorable.

Separate sheets describing an important idea, experiment, or test should be witnessed.

Joint work should be signed by all the contributors. The text should set forth who is responsible for each part.

Prepare an invention disclosure promptly for something new or unexpected.



SECTION H

SAMPLE FORMS

In this section we have included samples of some basic forms used in technology transfer and commercialization. The forms used by U.S. federal agencies and universities will vary. Please contact the specific laboratory or university to get copies of their forms.

- Cooperative Research and Development Agreement
- NASA Nonreimbursable Space Act Agreement
- Patent Licensing Agreement
- Small Business Innovation Research (SBIR) Application
- Copyright Application
- Trademark Application
- Record and Disclosure of Invention Form
- Application for License to Practice Invention

Cooperative Research and Development Agreement

STEVENSON-WYDLER (15 USC 3710)
COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT
(hereinafter "CRADA") NO. _____

BETWEEN

Sandia Corporation
(hereinafter "Sandia")
AND

_____

a corporation of the State of <state> having a principal office in <town and state> (hereinafter "Participant"), both being hereinafter jointly referred to as the "Parties."

Background - The U.S. Department of Energy (DOE) is the agency responsible for the federally-owned facility known as Sandia National Laboratories. Sandia National Laboratories is managed and operated by American Telephone and Telegraph Company (AT&T) through its wholly owned subsidiary Sandia Corporation. Sandia operates at no-profit or loss to AT&T under a prime contract between AT&T and DOE designated Contract DE-AC04-76DP00789.

ARTICLE I. DEFINITIONS

A. "Government" means the United States of America and agencies thereof.

B. "DOE" means the Department of Energy, an agency of the United States of America.

C. "Contracting Officer" means the DOE employee administering Sandia's DOE Contract.

D. "Generated Information" means information produced in the performance of this CRADA.

E. "Proprietary Information" means information which embodies trade secrets developed at private expense outside of this Agreement and commercial or financial information which is privileged or confidential under the Freedom of Information Act (5 USC 552(b)(4)) and which is marked as Proprietary Information.

F. "Protected CRADA Information" means Generated Information which is marked as being Protected CRADA Information by a Party to this Agreement and which would have been Proprietary Information had it been obtained from a non-federal entity.

G. "Subject Invention" means any invention of Sandia or Participant conceived or first actually reduced to practice in the performance of work under this CRADA.

H. "Intellectual Property" means patents, trademarks, copyrights, mask works, and other forms of comparable property rights protected by Federal law and other foreign counterparts.

I. "Trademark" means a distinctive mark, symbol or emblem used in commerce by a producer or manufacturer to identify and distinguish their goods or services from those of others.

J. "Mask Work" means a series of related images, however fixed or encoded, having or representing the predetermined, three-dimensional pattern of metallic, insulating or semiconductor material present or removed from the layers of a semiconductor chip product; and in which series the relation of

the images to one another is that each image has the pattern of the surface of one form of the semiconductor chip product. (17 USC 901(a)(2))

ARTICLE I.1 SPECIAL PARTICIPANT REPRESENTATION - RESERVED

ARTICLE II. STATEMENT OF WORK

Appendix A, Statement of Work, version <date>, is hereby incorporated into this CRADA by reference.

The effective date of this CRADA shall be the latter date of (1) the date on which it is signed by the last of the Parties hereto or (2) the date on which it is approved by DOE. The work to be performed under this CRADA shall be completed within _____ years from the effective date.

ARTICLE III. FUNDING & COSTS

A. The Participant's estimated total contribution is $_____. The Government's estimated total contribution, which is provided through the Sandia's contract with DOE, is $_____, and includes $_____ for Sandia, subject to available funding, and $_____ for Depreciation and DOE Overhead.

B. Neither Party shall have an obligation to continue or complete performance of its work at a cost in excess of its estimated cost as contained in Article III.A. above, including any subsequent amendment.

C. Each Party agrees to provide at least thirty (30) days' notice to the other Party if the actual cost to complete performance will exceed the estimated cost.

ARTICLE III.1 SPECIAL PAYMENT TERMS AND CONDITIONS - RESERVED

ARTICLE IV. PROPERTY

All tangible personal property produced under this CRADA shall become the property of the Participant or the Government depending upon whose funds were used to obtain it. Such property is identified in Appendix A, Statement of Work. Personal Property shall be disposed of as directed by the owner at the owner's expense. All jointly funded property shall be owned by the Government.

ARTICLE IV.1 SPECIAL PROPERTY TERMS AND CONDITIONS - RESERVED

ARTICLE V. DISCLAIMER

THE GOVERNMENT, THE PARTICIPANT, AND SANDIA MAKE NO EXPRESS OR IMPLIED WARRANTY AS TO THE CONDITIONS OF THE RESEARCH OR ANY INTELLECTUAL PROPERTY OR PRODUCT MADE OR DEVELOPED UNDER THIS CRADA, OR THE OWNERSHIP, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE RESEARCH OR RESULTING PRODUCT. NEITHER THE GOVERNMENT, THE PARTICIPANT, NOR SANDIA SHALL BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES.

ARTICLE VI. PRODUCT LIABILITY

Except for any liability resulting from any negligent or intentional acts or omissions of Sandia, Participant indemnifies the Government, AT&T, and Sandia for all damages, costs and expenses, including attorney's fees, arising from personal injury or property damage occurring as a result of the making, using or selling of a product, process or service by or on behalf of the Participant, its assignees or licensees, which was derived from the work performed under this CRADA. In respect to this Article, neither the Government, AT&T, nor Sandia shall be considered assignees or licensees of the Participant, as a result of reserved Government, AT&T, and Sandia rights. The indemnity set forth in this paragraph shall apply only if Participant shall have been informed as soon and as completely as practical by Sandia, AT&T, and/or the Government of the action alleging such claim and shall have been given an opportunity, to the extent afforded by applicable laws, rules, or regulations, to participate in and control its defense, and Sandia, AT&T, and/or the Government shall have provided reasonably available information and reasonable assistance requested by Participant. No settlement for which Participant would be responsible shall be made without Participant's consent unless required by final decree of a court of competent jurisdiction.

ARTICLE VII. OBLIGATIONS AS TO PROPRIETARY INFORMATION

A. If Proprietary Information is orally disclosed to a Party, it shall be identified as such, orally, at the time of disclosure and confirmed in a written summary thereof within ten (10) days as being Proprietary Information.

B. Each Party agrees to not disclose Proprietary Information provided by another Party to anyone other than the CRADA Participant and Sandia without written approval of the providing Party, except to Government employees who are subject to 18 USC 1905.

C. All Proprietary Information shall be returned to the provider thereof at the conclusion of this CRADA at the provider's expense.

D. All Proprietary Information shall be protected, unless and until such Proprietary Information shall become publicly known without the fault of the recipient, shall come into recipient's possession without breach of any of the obligations set forth herein by the recipient, or shall be independently developed by recipient's employees who did not have access to such Proprietary Information.

ARTICLE VIII. OBLIGATIONS AS TO PROTECTED CRADA INFORMATION

A. Each Party may designate as Protected CRADA Information, as defined in Article I, any Generated Information produced by its employees, and with the agreement of the other Party, mark any Generated Information produced by the other Party's employees. All such designated Protected CRADA Information shall be appropriately marked.

B. For a period of _____ (not to exceed five years) from the date Protected CRADA Information is produced, Parties agree not to further disclose such information except:

(1) as necessary to perform this CRADA;

(2) other than as provided in Article XI, as requested by the DOE Contracting Officer to be provided to other DOE facilities for use only at those DOE facilities with the same protection in place; or

(3) as mutually agreed by the Parties in advance.

C. The obligations of (B) above shall end sooner for any Protected CRADA Information which shall become publicly known without fault of either Party, shall come into a Party's possession without breach by that Party of the obligations of (B) above, or shall be independently developed by a Party's employees who did not have access to the Protected CRADA Information.

ARTICLE IX. RIGHTS IN GENERATED INFORMATION

The Parties understand that the Government shall have unlimited rights in all Generated Information or information provided to the Parties under this CRADA which is not marked as being copyrighted (subject to Article XIII) or as Protected CRADA Information (subject to Article VIII B) or Proprietary Information (subject to Article VII B).

ARTICLE X. EXPORT CONTROL

THE PARTIES UNDERSTAND THAT MATERIALS AND INFORMATION RESULTING FROM THE PERFORMANCE OF THIS CRADA MAY BE SUBJECT TO EXPORT CONTROL LAWS AND THAT EACH PARTY IS RESPONSIBLE FOR ITS OWN COMPLIANCE WITH SUCH LAWS.

ARTICLE XI. REPORTS AND ABSTRACTS

A. The Parties agree to produce the following deliverables:

(1) initial abstracts suitable for public release;

(2) other abstracts (final when work is complete, and others as substantial changes in scope and dollars occur);

(3) a final report; and

(4) other topical/periodic reports where the nature of research and magnitude or dollars justify.

B. The Parties acknowledge that DOE has the right to require delivery of reports and abstracts produced under this CRADA, subject to Article IX.

ARTICLE XII. PRE-PUBLICATION REVIEW

A. The Parties agree to secure pre-publication approval from each other which shall not be unreasonably withheld or denied beyond thirty (30) days.

B. The Parties agree that neither will use the name of the other Party or its employees in any promotional activity, such as advertisements, with reference to any product or service resulting from this CRADA, without prior written approval of the other Party.

ARTICLE XIII. COPYRIGHTS

A. The Parties may assert copyright in any of their Generated Information.

B. Each Party shall have the first option to retain ownership of copyrights in works created by its employees. If either Party decides not to retain ownership of copyright in a work created by its employee(s), that Party agrees to assign such copyright to the other Party, at the other Party's request. Participant agrees to notify Sandia if it decides not to retain ownership of copyright in any work created by its employee(s); Sandia agrees to notify DOE if Participant or Sandia decide not to retain ownership of copyright in any

work created by its employee(s). The Parties agree to assign to the DOE, upon request, copyrights not retained by either Party.

C. For Generated Information, the Parties acknowledge that the Government has for itself and others acting on its behalf, a royalty-free, nonexclusive, irrevocable worldwide copyright license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government, all copyrightable works produced in the performance of this CRADA, subject to the restrictions this CRADA places on publication of Proprietary Information and Protected CRADA Information.

D. For all copyrighted computer software produced in the performance of this CRADA, the Party owning the copyright will provide the source code, an expanded abstract as described in Appendix B, Abstract Format Description, and the object code and the support documentation needed by a competent user to understand and use the software to DOE's Energy Science and Technology Software Center. The expanded abstract will be treated in the same manner as Generated Information in subparagraph C of this Article.

E. Sandia and the Participant agree that, with respect to any copyrighted computer software produced in the performance of this CRADA, DOE has the right, at the end of the period set forth in paragraph B of Article VIII hereof and at the end of each two-year interval thereafter, to request Sandia and the Participant and any assignee or exclusive licensee of the copyrighted software to grant a nonexclusive, partially exclusive, or exclusive license to a responsible applicant upon terms that are reasonable under the circumstances, provided such grant does not cause a termination of any licensee's right to use the copyrighted computer software. If Sandia or the Participant or any assignee or exclusive licensee refuses such request, Sandia and the Participant agree that DOE has the right to grant the license if DOE determines that Sandia, the Participant, assignee, or licensee has not made a satisfactory demonstration that it is actively pursuing commercialization of the copyrighted computer software.

Before requiring licensing under this paragraph E, DOE shall furnish Sandia/Participant written notice of its intentions to require Sandia/Participant to grant the stated license, and Sandia/Participant shall be allowed 30 days (or such longer period as may be authorized by the cognizant DOE Contracting Officer for good cause shown in writing by Sandia/Participant) after such notice to show cause why the license should not be required to be granted.

Sandia/Participant shall have the right to appeal the decision by the DOE to the grant of the stated license to the Invention Licensing Appeal Board as set forth in paragraphs (b)-(g) of 10 CFR 781.65, "Appeals."

F. The Parties agree to place copyright and other notices, as appropriate for the protection of copyright, in human readable form onto all physical media, and in digitally encoded form in the header of machine readable information recorded on such media such that the notice will appear in human readable form when the digital data are off loaded or the data are accessed for display or printout.

ARTICLE XIV. REPORTING INVENTIONS

A. The Parties agree to disclose to each other each and every Subject Invention, which may be patentable or otherwise protectable under the Patent Act. The Parties acknowledge that Sandia will disclose Subject Inventions to the DOE within two (2) months after the inventor first discloses the invention in writing to the person(s) responsible for patent matters of the disclosing Party.

B. These disclosures should be in such detail as to be capable of enabling one skilled in the art to make and use the invention under 35 USC 112. The disclosure shall also identify any statutory bars, i.e., printed publications describing the invention or the public use or on sale of the invention in this country. The Parties further agree to disclose to each other any subsequent statutory bar that occurs for an invention disclosed but for which a patent application has not been filed. All invention disclosures shall be marked as confidential under 35 USC 205.

ARTICLE XV. TITLE TO INVENTIONS

A. Whereas the DOE has granted rights to inventions under this CRADA, each Party shall have the first option to elect to retain title to any invention made by its employees. If a Party elects not to retain title to any invention of its employees, then the other Party shall have the second option to elect to retain title to such invention under this CRADA. The DOE shall retain title to any invention that is not retained by any Party.

B. The Parties acknowledge that the DOE may obtain title to each Subject Invention reported under Article XIV for which a patent application or applications are not filed and for which any issued patents are not maintained by any Party to this CRADA.

C. The Parties acknowledge that the Government retains a non-exclusive, non-transferable, irrevocable, paid-up license to practice or to have practiced for or on behalf of the United States every Subject Invention under this CRADA throughout the world.

ARTICLE XV.1 AT&T INTELLECTUAL PROPERTY RIGHTS

A. Patents - In accordance with the provisions of prime contract DE-AC04-76DP00789, AT&T shall have non-exclusive, irrevocable, royalty-free licenses under patents or inventions made solely or jointly by Sandia employees. Said licenses shall be limited to make and have made, use, lease, and sell products and services.

B. Technical Data - AT&T shall have, subject to patent, data and security provisions of prime contract DE-AC04-76DP00789 between DOE and AT&T, the right to use technical data first produced under the prime contract for its private purposes, provided that as of the date of such use all reporting requirements, if any, of the prime contract have been met. The AT&T rights apply to all Generated Information of Sandia employees under this CRADA deemed to be technical data under the prime contract.

ARTICLE XV.2 SPECIAL LICENSE TERMS AND CONDITIONS - RESERVED

ARTICLE XVI. FILING PATENT APPLICATIONS

A. The Parties agree that the Party initially indicated as having an ownership interest in any Subject Inventions shall have the first opportunity to file U.S. and foreign patent applications; but if such Party does not file such applications within six months after disclosure, then the other Party to this CRADA may file patent applications on such inventions.

B. The Parties agree that if neither Party desires to file a patent application for any Subject Invention, notification of such negative intent shall be made in writing to the DOE Contracting Officer within nine (9) months after the initial disclosure of such invention or not later than 60 days prior to the time when any statutory bar might foreclose filing of a U.S. patent application.

ARTICLE XVII. TRADEMARKS

The Parties may seek to obtain trademark/service mark protection on products or services generated under this agreement in the United States or foreign countries. The ownership and other rights relating to this trademark shall be as mutually agreed to in writing by the Parties. The Parties hereby acknowledge that the Government shall have the right to indicate on any similar goods or services it produces, that such goods or services were derived from and are a DOE version of the goods or services protected by such trademark/service mark with the trademark of the owner thereof being specifically identified.

ARTICLE XVIII. MASK WORKS

The Parties may seek to obtain legal protection for mask works fixed in semiconductor products generated under this agreement as provided by Chapter 9 of Title 17 of the United States Code. The rights to any mask work covered by this provision shall be as mutually agreed to in writing by the Parties. The Parties acknowledge that the Government or others acting on its behalf shall retain a nonexclusive, paid-up, worldwide, irrevocable, nontransferable license to reproduce, import, or distribute the covered semiconductor product by or on behalf of the Government.

ARTICLE XIX. COST OF INTELLECTUAL PROPERTY PROTECTION

Each Party shall be responsible for payment of all costs relating to copyright, trademark, and mask work filing, U.S. and foreign patent application filing and prosecution, and all costs relating to maintenance fees for U.S. and foreign patents hereunder which are owned by the Party.

ARTICLE XX. REPORTS OF INVENTION USE

The Parties agree to submit, upon request of DOE, reports no more frequently than annually on the efforts to obtain utilization of any Subject Invention.

ARTICLE XXI. DOE MARCH-IN RIGHTS

The Parties acknowledge that the DOE has certain march-in rights to any Subject Inventions in accordance with 48 CFR 27.304-1(G).

ARTICLE XXII. U.S. COMPETITIVENESS

A. The Parties agree that any products, processes, or services for use or sale in the United States under any United States Patent resulting from a Subject Invention shall be manufactured, practiced, or provided substantially in the United States.

B. The Parties also agree that any products, processes, or services using intellectual property arising from the performance of this CRADA shall be manufactured, practiced, or provided substantially in the United States.

ARTICLE XXIII. ASSIGNMENT OF PERSONNEL

A. It is contemplated that each Party may assign personnel to the other Party's facility as part of this CRADA. Such personnel assigned by the assigning Party, to participate in or observe the research to be performed under this CRADA shall not during the period of such assignments be considered employees of the receiving Party for any purposes.

B. The receiving Party shall have the right to exercise routine administrative and technical supervisory control of the occupational activities of such personnel during the assignment period and shall have the right to approve the assignment of such personnel and/or to later request their removal by the assigning Party.

C. The assigning Party shall bear any and all costs and expenses with regard to its personnel assigned to the receiving Party's facilities under this CRADA. The receiving Party shall bear facility costs of such assignments.

ARTICLE XXIV. FORCE MAJEURE

No failure or omission by Sandia or Participant in the performance of any obligation under this CRADA shall be deemed a breach of this CRADA or create any liability if the same shall arise from any cause or causes beyond the control of Sandia or Participant, including but not limited to the following, which, for the purpose of the CRADA, shall be regarded as beyond the control of the Party in question: acts of God, acts or omissions of any government or agency thereof, compliance with requirements, rules, regulations, or orders of any governmental authority or any office, department, agency, or instrumentality thereof, fire, storm, flood, earthquake, accident, acts of the public enemy, war, rebellion, insurrection, riot, sabotage, invasion, quarantine, restriction, transportation embargoes, or failures or delays in transportation.

ARTICLE XXV. ADMINISTRATION OF THE CRADA

It is understood and agreed that this CRADA is entered into by Sandia under the authority of its prime contract with DOE. Sandia is authorized to and will administer this CRADA in all respects unless otherwise specifically provided for herein. Administration of this CRADA may be transferred from Sandia to DOE or its designee with notice of such transfer to the Participant, and Sandia shall have no further responsibilities except for the confidentiality, use and/or nondisclosure obligations of this CRADA.

ARTICLE XXVI. RECORDS AND ACCOUNTING SYSTEM

The Participant shall maintain records of receipts, expenditures, and the disposition of all Government property in its custody, related to the CRADA.

ARTICLE XXVII. NOTICES

A. Any communications required by this CRADA, if given by postage prepaid first class U.S. Mail addressed to the Party to receive the communication, shall be deemed made as of the day of receipt of such communication by the addressee, or on the date given if by verified facsimile. Address changes shall be given in accordance with this Article and shall be effective thereafter. All such communications, to be considered effective, shall include the number of this CRADA.

B. The address, telephone numbers and facsimile numbers for the Parties are as follows:

1. For Sandia:

U.S. Mail Only:
Sandia Corporation
P.O. Box 5800, CRADA No. _____
Albuquerque, NM 87185-5800

Fed. Ex., UPS, Freight:
Sandia Corporation
Bldg. 957, CRADA No. _____
1515 Eubank Blvd. SE
Albuquerque, NM 87123

--------OR--------

P.O. Box 969, CRADA No. _____
Livermore, CA 94550-0096

7011 East Ave., Bldg. 916
CRADA No. _____
Livermore, CA 94550-0096

a. FORMAL NOTICES AND COMMUNICATIONS, COPIES OF REPORTS

Attn: _____Org. No._____
Tel: _____
Facsimile: _____

b. TECHNICAL CONTACT, REPORTS, COPIES OF FORMAL NOTICES AND COMMUNICATIONS

Attn: _____Org. No._____
Tel: _____
Facsimile: _____

2. For Participant:

U.S. Mail Only:

_____
_____
_____

Fed. Ex., UPS, Freight:

_____
_____
_____

a. FORMAL NOTICES AND COMMUNICATIONS, COPIES OF REPORTS

Attn: _____
Tel: _____
Facsimile: _____

b. TECHNICAL CONTACT, REPORTS, COPIES OF FORMAL NOTICES AND COMMUNICATIONS

Attn: _____
Tel: _____
Facsimile: _____

ARTICLE XXVII.1 INFORMATION REQUESTED FROM PARTICIPANT

In order to evaluate the success of this CRADA and Sandia's CRADA program, the following information is requested from the Participant:

A. An annual estimate of additional sales dollars or, if the effort of this CRADA can not be linked to sales, cost savings realized by the Participant as a result of the contributions made to the Participant's technology that are attributable to Sandia's efforts under this CRADA. The annual estimate is requested within 30 days of the end of each calendar year from inception of this CRADA through the calendar year following termination or completion of work under this CRADA.

B. With the final annual estimate, a projection of anticipated additional sales dollars or cost savings that are expected by the Participant for each of the next five years and that are attributable to Sandia's efforts under this CRADA.

ARTICLE XXVIII. DISPUTES

The Parties shall attempt to jointly resolve all disputes arising from this CRADA. If the Parties are unable to jointly resolve a dispute within a reasonable period of time, the dispute shall be decided by the DOE Contracting Officer, who shall reduce the decision to writing within 60 days of receiving in writing the request for a decision by either Party to this CRADA. The DOE Contracting Officer shall mail or otherwise furnish a copy of the decision to the Parties. The decision of the DOE Contracting Officer is final unless, within 120 days, the Participant brings an action for adjudication in a court of competent jurisdiction in the State of New Mexico. To the extent that there is no applicable U.S. Federal law, this CRADA and performance thereunder shall be governed by the law of the State of New Mexico.

ARTICLE XXVIII.1 BUSINESS RELATIONS WITH OTHERS

Because Sandia is obliged to transfer technology widely to U.S. industry, Participant(s) accepts that other commercial entities, including competitors of Participant(s), may have business relationships with Sandia before, during, or after this CRADA. Such business relationships may involve work similar to the work under this CRADA, subject to obligations concerning use and nondisclosure of Proprietary Information and Protected CRADA Information.

ARTICLE XXIX. ENTIRE CRADA AND MODIFICATIONS

A. It is expressly understood and agreed that this CRADA with its Appendices contains the entire agreement between the Parties with respect to the subject matter hereof and that all prior representations or agreements relating hereto have been merged into this document and are thus superseded in totality by this CRADA. This CRADA shall not be effective until approved by DOE.

B. Any agreement to change any terms or conditions of this CRADA or the Appendices shall be valid only if the change is made in writing, executed by the Parties hereto, and approved by DOE.

ARTICLE XXX. TERMINATION

This CRADA may be terminated by either Party upon 30 days written notice to the other Party. This CRADA may also be terminated by Sandia in the event of failure by the Participant to provide the necessary advance funding, as agreed in Article III.1.

In the event of termination by either Party, each Party shall be responsible for its share of the costs incurred through the effective date of termination, as well as its share of the costs incurred after the effective date of termination, and which are related to the termination. The confidentiality, use, and/or nondisclosure obligations of this CRADA shall survive any termination of this CRADA.

For Sandia:

BY _____
C. Paul Robinson

TITLE Vice President of Laboratory Development

DATE _____

For Participant:

BY _____

TITLE _____

DATE _____

NASA Nonreimbursable Space Act Agreement

NONREIMBURSABLE SPACE ACT AGREEMENT
BETWEEN
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
JOHN F. KENNEDY SPACE CENTER
AND
[Other Party]
FOR
[Subject of Agreement]

I. AUTHORITY

This Agreement is entered into by the National Aeronautics and Space Administration, John F. Kennedy Space Center (hereinafter "NASA KSC") located at Kennedy Space Center, Florida 32899, and [Other Party] (hereinafter "_____") located at [address of other party]. This Agreement is entered into pursuant to sections 203(c) (5) and (6) of the Space Act of 1958, 42 U.S.C. Section 2473(c), as implemented by NASA Management Instruction (NMI) 1050.9A.

II. BACKGROUND AND PURPOSE OF AGREEMENT

The purpose of this agreement is to [description of the product/activity, the background, and the purpose of the agreement.]

III. RESPONSIBILITIES

A. [Other Party] will use reasonable efforts to perform the following tasks, and other such tasks that may be required to meet the purpose of this Agreement:

1. [Insert details]

2. . . .

3. . . .

B. NASA KSC will use reasonable efforts to perform the following tasks, and other such tasks as may be necessary to meet the purpose of this Agreement:

1. [Insert details]

2. . . .

3. . . .

IV. FINANCIAL OBLIGATIONS

There will be no transfer of funds or other financial obligations between NASA KSC and [Other Party] in connection with this

Agreement. Each party will fund its own participation under this Agreement.

All activities under or pursuant to this Agreement are subject to the availability of appropriated funds, and no provision in this Agreement shall be interpreted to require obligations or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. Section 1341.

V. SCHEDULE AND MILESTONES

The scheduled major milestones for the [Name of the activity or test program] are as follows:

Milestone:	Responsible Party	Month
A.		
B.		
C.		

VI. POINTS OF CONTACT

The following personnel are designated as the key officials for their respective party. These key officials are the principal points of contact between the parties in the performance of this Agreement.

NASA KSC:	[Other Party]:
[Name of Official]	[Name of Official]
[telephone #]	[telephone]
[address]	[address]

VII. PRIORITY OF USE

The above schedule and milestones are estimated based upon the parties' current understanding of the projected use of manpower, facilities, and equipment by NASA KSC. These resources are provided "as is," on a noninterference basis. In the event NASA KSC's projected usage changes, [Other Party] shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The parties agree that NASA KSC's usage of manpower, facilities, and equipment shall have priority over the usage planned in this Agreement, and should a conflict arise, NASA KSC, in its sole discretion, shall determine whether to exercise that priority.

VIII. LIABILITY AND RISK OF LOSS

A. General: In consideration of the use of NASA research facilities, equipment, and/or services provided by NASA or NASA contractors under this Agreement, [Other Party] waives and agrees not to make any claims against the U.S. Government or U.S. Government contractors or subcontractors, for damage arising from or related to activities under this Agreement, whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

In addition, [Other Party] agrees to indemnify and hold the U.S. Government or the U.S. Government contractors or subcontractors harmless from any claim, judgment, or cost arising from the injury to or death of any person, or for damage to or loss of any property, including U.S. Government property, as a result of activities under this Agreement, whether such damage is caused by negligence or otherwise, except in the case of willful misconduct.

B. Facility Damage: Notwithstanding the above, [Other Party] assumes responsibility for any facility/equipment damage it causes resulting from the activity under this Agreement and agrees to pay all costs associated with the repair of such damage. Facility/equipment damage as used herein refers to any damage to NASA facilities and equipment beyond the normal wear and tear reasonably to be expected as arising from the type of activity contemplated under this Agreement.

C. Limitation of Liability to Direct Damages: To the extent that a risk of damage or loss is not dealt with expressly in this Agreement, each Party's liability to the other party arising out of this Agreement, whether or not arising as a result of an alleged breach of this Agreement, shall be limited to direct damages only, and shall not include any loss of revenue or profits or other indirect or consequential damages.

IX. INTELLECTUAL PROPERTY

A. Rights in Data

1. Definitions: The term "Participant," as used herein, means any non-U.S. Government entity that is a party to this Agreement. The rights in data set forth herein are applicable to any employees, contractors or subcontractors, or other entities having a fiduciary or contractual relationship with Participant that are assigned, tasked, or contracted with to perform specified Participant activities under this Agreement.

The term "data," as used herein, means recorded information, regardless of form, the media on which it may be recorded, or the method of recording. The term includes,

but is not limited to, data of a scientific or technical nature, computer software and documentation thereof, and data comprising commercial and financial information.

2. General: Data exchanged between NASA and Participant under this Agreement will be exchanged without restriction as to its disclosure, use, or duplication except as otherwise provided below in this provision.

3. Background Data: In the event it is necessary for Participant to furnish NASA with data which either existed prior to or was produced outside this Agreement, and provided such data embodies trade secrets or comprises commercial or financial information which is privileged or confidential and is so identified with a suitable notice or legend, the data will be maintained in confidence and disclosed and used by NASA and its contractors (under suitable protective conditions) only for the purpose of carrying out NASA's responsibilities under this Agreement. Upon completion of activities under this Agreement, such data will be disposed of as requested by Participant.

4. Data produced by Participant under this agreement: In the event data first produced by Participant in carrying out Participant's responsibilities under this agreement is furnished to NASA, and Participant considers such data to embody trade secrets or to comprise commercial or financial information which is privileged or confidential, and such data is so identified with a suitable notice or legend, the data will be maintained in confidence and disclosed and used by NASA and its contractors (under suitable protective conditions) only for government purposes.

5. Data First Produced by NASA: As to data first produced by NASA in carrying out NASA's responsibilities under this Agreement and which data would embody trade secrets or would comprise commercial or financial information that is privileged or confidential if obtained from Participant, such data will, to the extent permitted by law, be appropriately marked with a notice or legend and maintained in confidence for a period of 5 years after development of information under this Agreement, with the express understanding that during the aforesaid period such data may be disclosed and used (under suitable protective conditions) by or on behalf of the Government for Government purposes only, and thereafter for any purpose whatsoever without restriction on disclosure and use. Participant agrees not to disclose such data to any third party without NASA's written approval until the aforementioned restricted period expires.

6. Copyright: In the event data is exchanged with a notice indicating that the data is protected under copyright as a

published, copyrighted work, the following paid-up licenses shall apply:

(a) If it is indicated on the data that the data existed prior to, or was produced outside of, this agreement, the receiving party and others acting on its behalf, may reproduce, distribute, and prepare derivative works for the purpose of carrying out the receiving party's responsibilities under this agreement; and

(b) If the furnished data does not contain the indication of (a) above, it will be assumed that the data was first produced under this agreement, and the receiving party and others acting on its behalf, may reproduce, distribute, and prepare derivative works for any of its own purposes.

7. Oral and Visual Information: If information which Participant considers to embody trade secrets or to comprise commercial or financial information which is privileged or confidential is disclosed orally or visually to NASA, such information must be reduced to tangible, recorded form (i.e., converted into data as defined herein), identified and marked with a suitable notice or legend as required by paragraphs 3 and 4 above, and furnished to NASA within 10 days after such oral or visual disclosure, or NASA shall have no duty to limit or restrict, and shall not incur any liability for, any disclosure and use of such information.

8. Disclaimer of Liability: Notwithstanding the above, NASA shall not be restricted in, nor incur any liability for, the disclosure and use of:

(a) data not identified with a suitable notice or legend as set in paragraphs 3 and 4; nor

(b) information contained in any data for which disclosure and use is restricted under paragraphs 3, 4, and 5 above, if such information is or becomes generally known without breach of the above, is known to or is generated by NASA independently of carrying out responsibilities under this agreement, is rightfully received from a third party without restriction, or is included in data which Participant has, or is required to, furnish to the U.S. Government without restriction on disclosure and use.

B. Patent and Invention Rights

1. The term "Participant," as used herein, means any non-U.S. Government entity that is a party to this Agreement.

The patent and invention rights set forth herein are applicable to any employees, contractors or subcontractors, or other entities having a fiduciary or contractual relationship with Participant that are assigned, tasked, or contracted with to perform specified Participant activities under this agreement.

2. General: Title to inventions made (conceived or first actually reduced to practice) as a consequence of, or in direct relation to, the performance of activities under this agreement will remain with the respective inventing parties (Participant or NASA), and no patent or invention rights are exchanged between or granted by such parties under this agreement except as provided herein.

3. NASA Inventions: NASA will use reasonable efforts to report inventions made by NASA employees as a consequence of, or which bear a direct relation to, the performance of specified NASA activities under this agreement and, upon timely request, will use its best efforts to grant Participant the first option to acquire either an exclusive or partially exclusive, revocable, royalty-bearing license, on terms to be subsequently negotiated, for any patents covering such inventions, and subject to the rights reserved in paragraph 6(a) below.

4. NASA Contractor Inventions: In the event NASA contractors are tasked to perform work in support of specified NASA activities under this agreement and inventions are made by contractor employees or jointly between NASA employees and contractor employees, and NASA has the right to acquire or has acquired title to such inventions, NASA will use reasonable efforts to report such inventions and, upon timely request, will use its best efforts to grant Participant the first option to acquire either an exclusive or partially exclusive, revocable, royalty-bearing license, upon terms to be subsequently negotiated, for any patents covering such inventions, and subject to the rights reserved in paragraph 6(b) below.

5. Joint Inventions with Participant: NASA and Participant agree to use reasonable efforts to identify and report to each other any inventions made jointly between NASA employees (or employees of NASA contractors) and employees of Participant, and upon timely request NASA may agree to refrain from exercising its undivided interest in a manner inconsistent with Participant's commercial interests and to cooperate with Participant in obtaining patent protection on its undivided interest, subject to the applicable rights reserved in paragraph 6 below.

6. Rights to be Reserved in Participant's License: Any license granted to Participant pursuant to paragraphs 3, 4,

or 5 above will be subject to the reservation of the following rights:

(a) as to inventions made solely by, or jointly with, NASA employees, the irrevocable, royalty-free right of the U.S. Government to practice or have practiced the invention by or on behalf of the U.S. Government for research, experimental, or demonstration purposes; and

(b) as to inventions made solely by, or jointly with, employees of NASA contractors, the rights in NASA as set forth in (a) above, as well as the revocable, nonexclusive, royalty-free license in the contractor as set forth in 14 CFR 1245.108.

7. Protection of Reported Inventions: When inventions are reported and disclosed between the parties in accordance with the provisions of this clause, the receiving party agrees to withhold such reports or disclosures from public access for a reasonable time (presumed to be one year unless otherwise mutually agreed) in order to facilitate the allocation and establishment of the invention and patent rights under these provisions.

8. Patent Filing Responsibilities and Costs: The invention and patent rights set forth herein shall apply to any patent applications filed and patents obtained in any country, and each party is responsible for its own costs of preparing, prosecuting, issuing, and maintaining patents covering sole inventions in any country; except that NASA and Participant may, upon the reporting of any invention (sole or joint) or in any license option granted, mutually agree otherwise for any country as to patent application preparation, filing and prosecution responsibilities and costs, and maintenance responsibilities and costs.

X. NEWS RELEASES AND PUBLICATIONS

The parties agree to coordinate in advance any news releases and/or widely distributed publications that result from activities performed pursuant to this Agreement. This coordination shall entail notifying the respective points of contact of the proposed news release or publication in sufficient time to allow the other party an opportunity to review and comment as deemed appropriate. Neither party shall issue a news release or publication prior to the other's consent.

XI. ELIGIBLE PARTICIPANTS

Unless expressly provided for to the contrary elsewhere in this Agreement, access to and use of NASA KSC equipment and facilities will be restricted to U.S. Citizens and resident aliens.

XII. COMPLIANCE WITH LAWS AND REGULATIONS

The parties shall comply with all applicable laws and regulations, including, but not limited to, safety, security, export control, and environmental laws and regulations.

XIII. COVENANT OF AUTHORITY

The signatories to this Agreement covenant and warrant that they have authority to execute this Agreement.

XIV. TERM OF AGREEMENT AND RIGHT TO TERMINATION

This Agreement becomes effective on the date of the last signature of the parties. Either party, upon a 30-day written notice to the other party, may terminate this Agreement, without liability, at any time and for any reason it deems substantial. In the event of such termination, each party shall return to the other any data it furnished to assist the other in performance of this Agreement, but each party may retain any data generated by its partial performance under the Agreement, unless the "Inventions and Data Rights" or other section of this Agreement provides otherwise. This Agreement shall expire upon completion of all obligations of both parties hereto, or [number of years or months (usually 12 or 24 months)] from the date of the last signature of the parties, whichever comes first.

XV. INDEPENDENCE OF CONTRACTS

The parties agree that this Agreement is independent of any other contract between the United States Government and [Other Party]. By participating in this Agreement, NASA makes no assurances to [Other Party] or others as to performance of the objects tested in NASA facilities or other test objects, and relieves [Other Party] of none of its obligations under any other contract, grant, or other Agreement with the Government. This Agreement does not constitute NASA's endorsement of any test results, resulting designs, hardware, or other matters.

XVI. SIGNATORY AUTHORITY FOR MODIFICATIONS AND EXTENSIONS

Any modification to this Agreement shall be executed in writing and signed by an authorized representative of each party. Any modification which creates an additional commitment of NASA resources must be signed by the original NASA signatory authority or successor, or a higher level NASA official possessing original or delegated authority to make such a commitment.

XVII. ASSIGNMENT OF RIGHTS

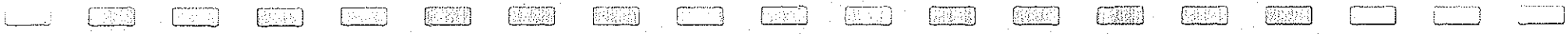
Neither this agreement nor any interest arising under it will be assigned by [Other Party] or NASA without the express written consent of the officials executing the agreement.

XVIII. GOVERNING LAW

The Parties hereby designate the United States Federal Law to govern this agreement for all purposes, including, but not limited to, determining the validity of the agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

XIX. EXECUTION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, JOHN F. KENNEDY SPACE CENTER	[OTHER PARTY]
BY: _____	BY: _____
Jay F. Honeycutt Director NASA/Kennedy Space Center Kennedy Space Center, FL 32899	[Name of Official] [Title] [Address]
Date: _____	Date: _____



Patent Licensing Agreement

June 1994 Edition

NONEXCLUSIVE LICENSE

Between

(Name of Licensee)

And

UNITED STATES OF AMERICA

As Represented By

THE SECRETARY OF THE NAVY

WHEREAS LICENSEE has supplied LICENSOR with a plan for development and marketing of the invention disclosed in this patent and has expressed its intention to carry out this plan upon the granting of this LICENSE;

NOW THEREFORE, in accordance with and to the extent provided by the aforementioned authorities and in consideration of the foregoing premises and of the covenants and obligations hereinafter set forth to be well and truly performed and other good and valuable consideration, the parties hereto agree to the foregoing and as follows:

ARTICLE I

Definitions

The following definitions shall apply to the defined words where such words are used in this LICENSE:

a. The "licensed patent" means U.S. Patent No. _____ entitled "_____," issued ___(date)___ to _____ (inventor(s)) _____;

b. A "licensed invention" means an invention claimed in U.S. Patent No. _____;

c. To "practice the licensed invention" means to make, use and sell by or on behalf of LICENSEE or otherwise dispose of

according to law any machine, article of manufacture or composition of matter physically embodying or made according to a licensed invention;

d. "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system, and, in each case under such conditions as to establish that a licensed invention is being utilized and that its benefits are to the extent permitted by law and Government regulations available to the public on reasonable terms;

e. A "royalty-bearing product" means any product defined by any claim of the licensed patent or made by a method claimed in the licensed patent;

f. The "net selling price" shall mean the invoice price of the royalty-bearing product sold and not returned. A royalty-bearing product will be considered to be sold when shipped or delivered to a customer; and

g. "United States" means the United States of America, its territories and possessions, the District of Columbia, and the Commonwealth of Puerto Rico.

ARTICLE II

License Grant

RR(M) LICENSOR grants to LICENSEE a nonexclusive right and license to practice the licensed invention throughout the United States in the fields of _____ _____, commencing on the date of execution of this LICENSE by LICENSOR, which shall become the effective date of the LICENSE, and continuing until the expiration of U.S. Patent No. _____ _unless the LICENSE is sooner modified or terminated in whole or in part.

RR This LICENSE is nonassignable without written approval of LICENSOR except to the successor of that part of LICENSEE'S business to which the licensed invention pertains.

ARTICLE III

Licensee's Performance

RR(M) LICENSEE agrees to carry out the plan for development and marketing of a licensed invention submitted with LICENSEE'S Application for License dated ___ _____ to bring a licensed invention to practical application by ___ (date)___ and LICENSEE will, thereafter, continue to make the benefits of a licensed invention reasonably accessible to the public for the remainder of the period of this LICENSE.

RN LICENSEE agrees that during the period of this LICENSE any products embodying a licensed invention or produced through the use of a licensed invention for use or sale in the United States will be manufactured substantially in the United States.

RN(M) The LICENSEE shall pay to the LICENSOR a nonrefundable licensing fee in the amount of _____ dollars ($_____) payable upon the execution of this LICENSE by LICENSEE. Payment will be made in the manner prescribed in Article IV.

LICENSEE agrees to promptly report to LICENSOR any changes in mailing address, name or company affiliation during the period of this LICENSE and to promptly report discontinuance of LICENSEE'S making the benefits of this licensed invention reasonably accessible to the United States public.

ARTICLE IV

Royalties

RN (M) LICENSEE shall pay a royalty to LICENSOR of _____ percent (__%) of the net selling price for each royalty-bearing product made, used or sold by LICENSEE in the United States.

RN Royalties will not be paid on items sold directly to agencies of the U.S. Government or for known U.S. Government end use.

RN(M) Notwithstanding the provisions of the preceding paragraphs in this Article IV, LICENSEE agree to pay at least a minimum annual royalty of _____ _____ thousand dollars ($_____) for calendar year _____ and each calendar year hereafter throughout the period of the LICENSE.

LICENSEE shall send to LICENSOR all royalties which accrue between 1 January and 31 December of each year by 1 March of the following year. A royalty report shall be included with each payment setting forth the quantity and net selling price of each royalty-bearing product sold during the period covered by the report, to whom sold and the date of such sale, and the total amount of royalties being paid for that year. Royalty reports are due for each calendar year. The last royalty report is due sixty (60) days after the expiration of this LICENSE.

RN All payments due LICENSOR under this LICENSE shall be made payable to Treasurer of the United States and mailed to:

Deputy Counsel (Intellectual Property)
Office of Naval Research
Code OOCCIP, Room 207
800 North Quincy Street
Arlington, Virginia 22217-560

RN LICENSEE agrees to make and keep full, accurate and complete books and records as are necessary to establish its compliance with this Article IV.

RN LICENSEE agrees that LICENSOR may, if LICENSOR so desires at a future time or times, have a duly authorized agent or representative in LICENSOR's behalf inspect, check or verify all such books and records either at LICENSEE's business premises or a place mutually agreed upon by LICENSEE and

LICENSOR.

ARTICLE V

Patent Marking and Nonendorsement

RN(M) LICENSEE hereby agrees to mark any royalty-bearing product manufactured or sold by LICENSEE under this LICENSE (or when the character of the product precludes marking, the package containing any such product) with the notation "Licensed from U.S. Navy under U.S. Patent No. _____." LICENSEE agrees not to create any appearance that LICENSOR endorses LICENSEE'S business or products.

ARTICLE VI

Representations and Warranties

RN(M) LICENSOR makes no representation or warranty as to validity of U.S. Patent No. _____ or of the scope of any of the claims contained therein or that the exercise of this LICENSE will not result in the infringement of other patent(s). Neither LICENSOR nor its employees assumes any liability whatsoever resulting from the exercise of this LICENSE.

RR Nothing relating to the grant of this LICENSE nor the grant itself shall be construed to confer upon LICENSEE any immunity from or defenses under the antitrust laws or from a charge of patent misuse, and the acquisition and use

of rights pursuant to this LICENSE shall not be immunized from the operation of State or Federal law by reason of the source of the grant.

RN Nothing contained in this LICENSE shall be interpreted to grant to LICENSEE any rights with respect to any invention other than the licensed invention.

ARTICLE VII

Reports

RR(M) LICENSEE agrees to submit periodic reports on its efforts to achieve practical application of the licensed invention by __(date)__ with particular reference to LICENSEE'S plan for development and marketing of the licensed invention submitted with LICENSEE'S application for license. These reports shall contain information within LICENSEE'S knowledge, or which it may acquire under normal business practices, pertaining to the commercial use being made of this licensed invention and other information which LICENSOR may determine is pertinent to Government licensing activities. LICENSEE agrees to submit such reports to LICENSOR semiannually until such time that the invention has been brought to the point of practical application.

ARTICLE VIII

Modification and Termination

RR This LICENSE may be terminated in whole or in part by LICENSOR, if:

(1) LICENSOR determines that LICENSEE is not executing the plan submitted with the request for license dated _____ and LICENSEE cannot otherwise demonstrate to the satisfaction of LICENSOR that it has taken or can be expected to take within a reasonable time effective steps to achieve practical application of this licensed invention;

(2) LICENSOR determines that such action is necessary to meet requirements for public use specified by Federal regulations issued after the date of this LICENSE and such requirements are not reasonably satisfied by LICENSEE;

(3) LICENSEE willfully made a false statement of or willfully omitted a material fact in its application for license or in any report required by this LICENSE; or

(4) LICENSEE commits a substantial breach of a covenant or agreement herein contained.

RR This LICENSE may be modified or terminated in whole or in part consistent with the law and applicable regulations upon mutual agreement of LICENSOR and LICENSEE evidenced in writing and signed by both parties.

LICENSEE may request modification of this LICENSE in writing sent to LICENSOR and stating the reasons therefor.

RN This LICENSE may be restricted to the fields of use or geographic areas, or both, in which the LICENSEE has brought the invention to practical application and continues to make the benefits of the invention reasonably accessible to the public. However, such restriction may be made only after the expiration of

_____ years following the effective date of this LICENSE and shall be made only in order to grant an exclusive or partially exclusive license.

Before modifying or terminating in whole or in part this LICENSE, other than by mutual agreement, LICENSOR shall furnish LICENSEE a written notice of intention to modify or terminate in whole or in part this LICENSE, and LICENSEE shall be allowed no less than thirty (30) days after such notice or other agreed-upon time period, whichever is greater, to remedy any breach of any covenant or agreement set forth in this LICENSE or to show cause why this LICENSE should not be modified or terminated in whole or in part.

RR LICENSEE has a right to appeal, in accordance with procedures prescribed by the Chief of Naval Research, any decision concerning the interpretation, modification or termination in whole or in part of this LICENSE.

ARTICLE IX

Officials Not to Benefit

RN No member of or delegate to the United States Congress shall be admitted to any share or part of this LICENSE or to any benefit that may arise thereupon.

ARTICLE X

Notice

RN(M) All communications and notices required under this LICENSE shall be considered duly given if timely mailed by U.S. Postal Service, first class, postage prepaid and addressed as follow:

(a) if to LICENSOR:

Deputy Counsel (Intellectual Property)
Office of Naval Research (Code OOCCIP)
800 North Quincy Street
Arlington, Virginia 22217-5660

(b) if to LICENSEE:

(Name)
(Address)

or such mailing address as the parties from time to time specify in writing.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their duly authorized representatives.

UNITED STATES OF AMERICA

For the Secretary of the Navy

By: _____

Title: _____

Date: _____

(NAME of LICENSEE)

By: _____

Title: _____

Date: _____

ATTEST: _____

Small Business Innovation Research Application

DOE/ER-0653

SMALL BUSINESS INNOVATION RESEARCH

PROGRAM SOLICITATION

Closing Date: February 13, 1996

U.S. Department of Energy
Office of Energy Research
SBIR Program Manager
19901 Germantown Road
Germantown, M.D. 20874-1290

U.S. DEPARTMENT OF ENERGY

SMALL BUSINESS INNOVATION RESEARCH
SOLICITATION NO. DOE/ER-0653

COVER PAGE

APPENDIX A

DOE USE ONLY

96-I

NOTICE FOR HANDLING GRANT APPLICATIONS. "This submission is to be used only for DOE evaluation purposes. All government and non-Government personnel handling this submission shall exercise extreme care to ensure that the information contained herein is not duplicated, used, or disclosed in whole or in part for any purpose other than to evaluate the submission, without the written permission of the offeror (except that if a grant is awarded on the basis of this submission, the terms of the grant shall control disclosure and use). This is a Government notice, and shall not by itself be construed to impose any liability upon the Government or Government personnel for any disclosure or use of data contained in this submission."

Topic No. (1-41) _____ Subtopic (a-d) _____

AMOUNT REQUESTED:
$ _____
(Not to exceed $75,000.)

PROJECT TITLE: _____

_____

FIRM NAME: _____

MAILING ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____ — _____
(Please provide extended zip code.)

ANSWER Y (YES) OR N (NO)

CERTIFICATIONS AND QUESTIONS

☐ The above applicant organization certifies that it is a small business and meets the definition stated in Section 2.3.

☐ A minimum of two-thirds of the funded research or analytical effort will be performed by the applicant organization (see Section 5.5).

☐ The applicant small business will comply with the provisions regarding: (1) lobbying, (2) debarment, suspension, and other responsibility matters, and (3) drug-free workplace requirements. (See Appendix E and Appendix F.) Inability to certify to any or all statements requires explanation.

☐ The applicant small business has provided the necessary information requested in Section 3.4.4 if it has received more than 15 Phase II SBIR awards in the preceding five fiscal years.

☐ Has the firm and/or Principal Investigator submitted proposals containing a significant amount of essentially equivalent work under other federal program solicitations, or received other federal awards containing a significant amount of essentially equivalent work? If "yes", the application must include the required information requested in Section 3.4.2.j.

☐ is the small business delinquent on any Federal debt? (If "yes", please attach an explanation.)

☐ If the proposed project does not result in an award, does the applicant permit the government to disclose the title and technical abstract of the application, and the name, address, and telephone number of the business official, to any inquiring parties?

Principal Investigator (See Requirements in Sec. 1.5)

TYPE NAME, Indicate Mr., Mrs., Ms., Dr.

_____

Title: _____

Telephone No. _____

Signature _____ Date: _____

Corporate/Business Certifying Official

TYPE NAME, Indicate Mr., Mrs., Ms., Dr.

_____

Title: _____

Telephone No. _____

Signature _____ Date: _____

PROPRIETARY NOTICE (IF APPLICABLE, SEE SECTION 5.4)

For any purpose other than to evaluate this submission, these data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part, provided that if a funding agreement is awarded to this applicant as a result of or in connection with the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the funding agreement. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. The data in this submission subject to this restriction are contained on pages:

_____

INSTRUCTIONS FOR COMPLETING APPENDIX A

1. **Topic Number**—Provide the appropriate numerical designator of the technical topic (one of the 41 listed in Appendix I) to which you are submitting your grant application.

2. **Subtopic**—Provide the appropriate alphabetical character designating the subtopic, within the technical topic, to which you are submitting your grant application.

3. **Amount**—Must not exceed $75,000. Grant applications requesting more than $75,000 will be **declined without further review.**

4. **Project Title**—Should reflect the substance of the project and must be limited to 120 characters and spaces. Do not use the solicitation's topic or subtopic title.

5. **Firm Name**—Enter the name of the company or individual submitting the grant application. If a joint venture, enter the name of the company chosen to negotiate and receive the grant. If the name exceeds the space provided, please abbreviate it.

6. **Mailing Address**—Enter mailing address.

7. **State**—Enter two-letter state abbreviation.

8. **Zip Code**—Enter nine-digit code.

9. **Certifications and Questions**—Enter Y for yes and N for no in response to each of the statements or questions on the cover page.

10. **Endorsements**—Must be completed and signed by both the Principal Investigator and the Corporate/Business Official empowered to make contractual commitment on behalf of the firm. Both entries must be completed and signed even if the functions of the Principal Investigator and the Corporate/Business Official are performed by the same individual. Designate one copy of the grant application as the original and have original signatures appear on the cover page (Appendix A) and the budget summary (Appendix D) of that copy.

11. **Proprietary Notice (bottom of cover page)**—Should be completed, if applicable.

U.S. DEPARTMENT OF ENERGY

SMALL BUSINESS INNOVATION RESEARCH PROGRAM
PHASE I - FY 1996-I
PROJECT SUMMARY

APPENDIX B

DOE USE ONLY

96-I

Topic No. (1-41)

Subtopic (a-d)

FIRM NAME, ADDRESS, TELEPHONE NUMBER:

TITLE OF PROJECT:

NAME AND TITLE OF PRINCIPAL INVESTIGATOR:

TECHNICAL ABSTRACT (Limit to space provided; use the format provided in the instructions on the reverse side.)

KEY WORDS:

ANTICIPATED RESULTS/POTENTIAL COMMERCIAL APPLICATIONS as described by the applicant. (Limit to space provided).

(All information provided on this page is subject to release to the public.)

INSTRUCTIONS FOR COMPLETING APPENDIX B

1. **Topic Number**—Provide the appropriate numerical designator of the technical topic (one of the 41 listed in Appendix I) to which you are submitting your grant application.

2. **Subtopic**—Provide the appropriate alphabetical character designating the subtopic, within the technical topic, to which you are submitting your grant application.

3. **Name, Address, and Telephone Number of Applicant**—Enter the firm name, the mailing address, and the telephone number as entered on the grant application cover page, Appendix A.

4. **Title of Project**—Enter the same title as entered on the grant application cover page, Appendix A. Do not use the solicitation's topic or subtopic title.

5. **Name and Title of Principal Investigator**—Enter the same name and title as shown on the grant application cover page, Appendix A.

Note! Entries 1 through 5 should be the same information as entered on the grant application cover page, Appendix A.

6. **Technical Abstract**—Provide a summary of your proposed project. It should be a concise statement of the proposed effort for Phase I, limited to the space provided. Use the following format:
   a. Statement of the problem or situation being addressed (1-3 sentences).
   b. General statement of how this problem is being addressed. Usually this would be the overall objective of the combined Phase I/Phase II project (1-3 sentences).
   c. What is planned for the Phase I/Phase II project (1-3 sentences).

Do not use acronyms, abbreviations, or first-person references.

7. **Key Words**—Provide key words descriptive of the project and useful in identifying the subject matter of the technology, research thrust, or potential uses of the proposed effort.

8. **Anticipated Results/Potential Commercial Applications**—Summarize the results and commercial applications that can be anticipated if the project is carried over into Phase II and beyond. Limit to the space provided.

APPENDIX C

PROJECT DESCRIPTION
(Example)

1. **Project Objective**

   The applicant shall investigate the electrocatalytic production of styrene from ethylbenzene in solid electrolyte fuel cells. The effort is directed toward defining optimal operating conditions for achieving high yields of styrene with simultaneous electric energy generation.

2. **Project Description**

   The work to be performed consists of the following tasks:

   2.1 Construction of tubular zirconia fuel cells with a platinum cathode and an iron oxide or platinum anode. Both anode materials are quite promising and a decision between the two will be made after preliminary runs.

   2.2 Measurement of the styrene cell activity and yields as a function of velocity, temperature, and inlet concentration of ethylbenzene and external resistive load.

   2.3 Measurement of the cell electric power output and overpotential as a function of the operating parameters described in 2.2.

   2.4 Preliminary engineering and economic analysis according to the results of 2.2 and 2.3.

   2.5 Final Report Preparation.

3. **Performance Schedule**

   Task 2.1 completed two months after start of work.
   Task 2.2 and 2.3 completed four months after start of work.
   Task 2.4 completed five months after start of work.
   Task 2.5 completed six months after start of work.

4. **Reporting Requirement**

   The applicant shall provide a Final Report containing the data from the experiments performed according to Tasks 2.2 and 2.3 along with analyses and conclusions based on these data.

DOE F4620.3
(09-90)

U.S. DEPARTMENT OF ENERGY

APPENDIX D

SMALL BUSINESS INNOVATION RESEARCH (SBIR) GRANT APPLICATION BUDGET

OMB CONTROL NO. 1910-1400

(Please Print or Type)

ORGANIZATION:

A. PERSONNEL *(Employees)* NAME	ROLE IN PROJECT	EST. HOURS	HOURLY RATE	FRINGE BENEFITS	TOTAL COST
	Principal Investigator				
B. CONSULTANTS NAME	ROLE IN PROJECT	EST. HOURS	HOURLY RATE		

C. LEASED EQUIPMENT *(Specify Time and Rate, or Other Basis)* ITEM	
D. PURCHASED EQUIPMENT ITEM — AMOUNT	
E. TRAVEL	
F. OTHER DIRECT COSTS	
1. Materials and Supplies	
2. Publication Costs	
3. Testing Services (Including work at Government Installations)	
4. Computer Services	
5. Subcontracts	
6. Other	
TOTAL OTHER DIRECT COSTS	
G. TOTAL DIRECT COSTS *(A. through F.)*	
H. INDIRECT COSTS *(Specify Rate and Base)*	
TOTAL INDIRECT COSTS	
I. TOTAL COSTS *(G. plus H.)*	
J. FEE OR PROFIT	
K. APPLICANT'S COST SHARING *(If Any)*	
L. TOTAL AMOUNT OF THIS REQUEST *(Item I. plus J. minus K.)*	

M. Has any executive agency of the United States Government performed any review of your accounts or records in connection with any other grant or contract within the past year? ☐ Yes ☐ No. If Yes, give name and address of reviewing office and official:

N. BUSINESS OFFICIAL – TYPED NAME AND SIGNATURE — DATE:

INSTRUCTIONS FOR SBIR GRANT APPLICATION BUDGET

1. General
   a. Each grant application must contain a completed and signed budget form.

   b. If the information requested does not fit in the spaces provided, use an additional page and give it the heading "Budget Explanation Page".

2. Budget Line Items

The following is a brief outline of the information required:

Lines A and B, Labor: List the key personnel and consultants by name and function or role in the project. Other direct personnel need not be named, but their role, such as "technician", and total hours should be entered. Support personnel should be included in line H. Fringe benefits should be calculated to cover all direct labor overhead costs, including Social Security, pensions, and insurance, and entered as a total dollar amount. You can use an established labor overhead rate if you have one.

Lines C and D, Equipment: Items costing over $500 and exceeding 2 years of useful life should be listed. Lesser items can be shown in line F.1.

Line E, Travel: Itemize by destination, type, period, and cost for both staff and consultants.

Line F, Other Direct Costs: Entries exceeding $500, and other items requiring an explanation, should be detailed on a "Budget Explanation Page". If a subcontract includes costs for equipment, materials, or supplies, these should also be noted on a "Budget Explanation Page." (See Section 3.4.3.)

Line G, Total Direct Costs: Enter the sum of lines A. through F.

Line H, Indirect Costs: If you have an established G&A (General and Administrative) rate you may cite it. Otherwise you should include all indirect costs such as facilities, shared equipment, utilities, property taxes, and support staff for the period of the project. Total allowable indirect costs charged by the proposing small business shall not exceed 200% of total direct labor costs of the proposing small business.

Line I: Enter the total amount of the proposed project.

Line J: Self-explanatory.

Line K: Enter the amount which the applicant or other private sector or non-SBIR sources are committing to the project. For Phase II, this amount, if any, will be used to evaluate criterion 6b in Section 4.3 of the solicitation.

Line L, Total amount of the request: This amount cannot exceed $75,000 for Phase I or $750,000 for Phase II.

Line M, Federal Audit: If DCAA or another Federal agent has audited your accounts in connection with a Federal grant or contract, please enter the information requested, and use the established rates in lines A. and H.

Line N, Business Official: A signature of someone with the authority to commit the company must be given.

OMB Disclosure Statement

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241.2 — GTN, Paperwork Reduction Project (1910-1400), U.S. Department of Energy, 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project (1910-1400), Washington, DC 20503.

CERTIFICATION REGARDING LOBBYING

By signing and submitting this application the organizational applicant certifies to the best of its knowledge and belief, that it and its principals believe that:

1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the organizational applicant shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

3) The organizational applicant shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS

By signing and submitting this application—

1) The organizational applicant certifies to the best of its knowledge and belief, that it and its principals:

   a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

   b. Have not within a three-year period preceding this application been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statues or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

   c. Are not presently indicted or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 1.b. of this certification; and

   d. Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.

2. Where the Prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this application. (The explanatory attachment will not be counted in the 25-page limitation.)

APPENDIX F

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V, Subtitle D) and is implemented through additions to the Debarment and Suspension regulations, published in the *Federal Register* on January 31, 1989.

By signing and submitting this application the organizational applicant certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about—

(1) the dangers of drug abuse in the workplace;
(2) the grantee's policy of maintaining a drug-free workplace;
(3) any available drug counseling, rehabilitation, employee assistance programs; and
(4) the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will-

(1) abide by the terms of the statement; and
(2) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace not later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted--

(1) taking appropriate personnel action against such an employee, up to and including termination; or

(2) requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

An applicant who is an individual certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

CHECKLIST

Applicant:

Project:

Please complete the checklist and paper clip (one copy only) to the cover sheet of the original (signed) copy of the grant application.

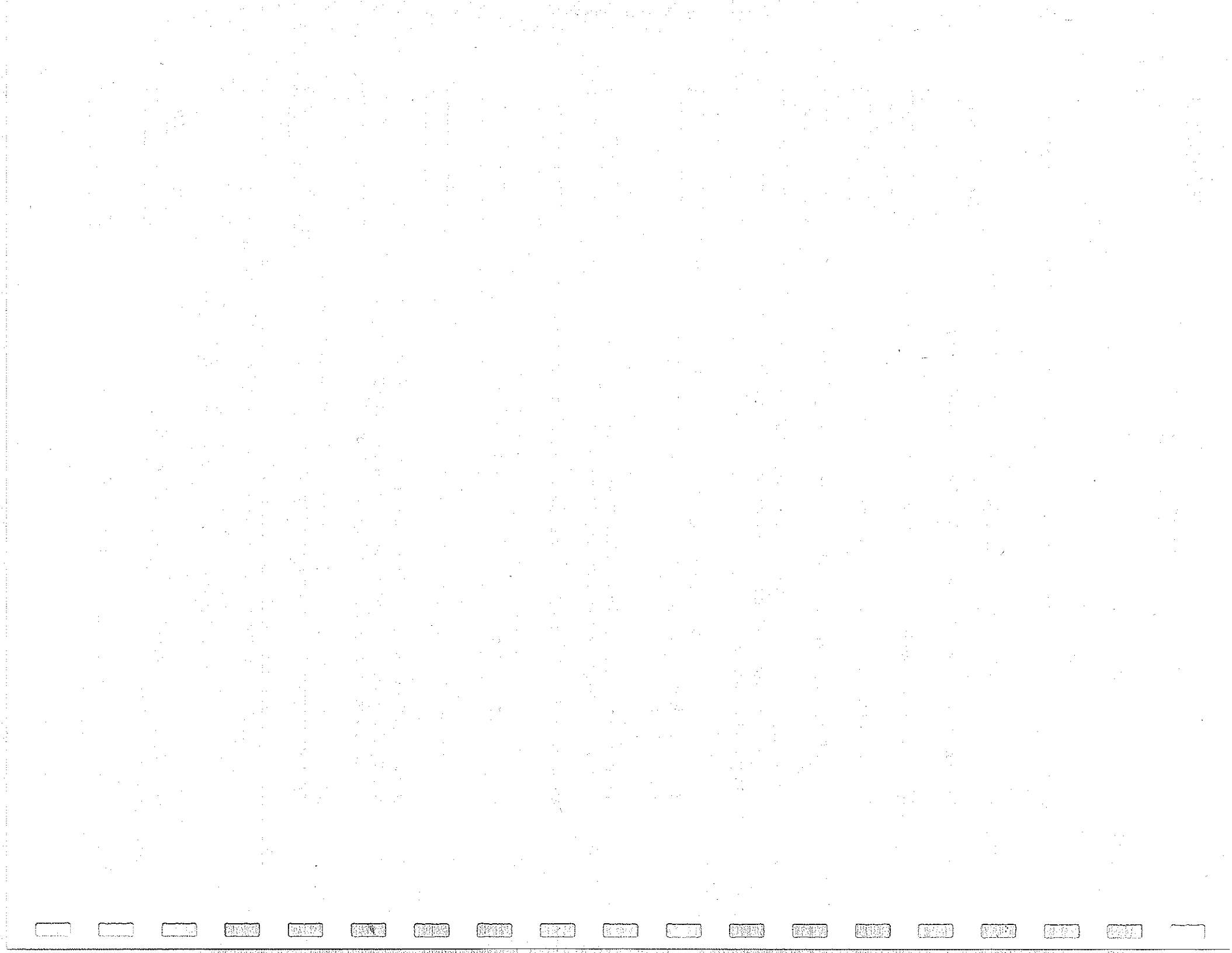
DOES THE APPLICATION SATISFY THE FOLLOWING REQUIREMENTS:

		Yes	No
✓	One, and only one, topic from Appendix I identified on the cover page.	☐	☐
✓	One, and only one, subtopic from Appendix I identified on the cover page.	☐	☐
✓	Both endorsements on cover page completed and signed.	☐	☐
✓	All certifications and questions on cover page marked YES or NO.	☐	☐
✓	Amount requested not in excess of $75,000; if total of lines I and J in Appendix D exceeds $75,000, the application must explain who will contribute the difference.	☐	☐
NEW ✓	Indirect costs, charged by the proposing small business, do not exceed 20% of the direct labor costs of personnel employed by the small business. (See Section 3.4.3.b.)	☐	☐
✓	Abstract contains no proprietary information and does not exceed space provided on the Project Summary Page (Appendix B).	☐	☐
✓	Main text (technical content) is included as requested in Section 3.4.2.	☐	☐
✓	Application, including all enclosures, not more than 25 pages. However, Appendix G and the Documentation of Multiple Phase II Awards (Section 3.4.4) will not be included in the 25-page count.	☐	☐
✓	No pages other than 8 1/2" x 11".	☐	☐
✓	No type smaller than (1) 12 point for proportionally spaced fonts and (2) 12 characters per inch (elite) for non-proportionally spaced fonts (except as legends on reduced drawings, but not tables).	☐	☐
✓	A minimum of 2/3 of the research or analytical effort will be performed by the small business. (See Sections 3.4.3 and 5.5).	☐	☐

ATTENTION: GRANT APPLICATIONS NOT MEETING ALL OF THE ABOVE REQUIREMENTS WILL BE DECLINED WITHOUT FURTHER ACTION.

STATISTICAL INFORMATION

	Yes	No
The proposing firm certifies that it is a socially and economically disadvantaged small business concern. (See Section 2.4.)	☐	☐
The proposing firm certifies that it is a women-owned small business concern. (See Section 2.5.)	☐	☐



Copyright Application

For a Literary Work
UNITED STATES COPYRIGHT OFFICE

REGISTRATION NUMBER

TX TXU

EFFECTIVE DATE OF REGISTRATION

Month Day Year

DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.

1

TITLE OF THIS WORK ▼

PREVIOUS OR ALTERNATIVE TITLES ▼

PUBLICATION AS A CONTRIBUTION If this work was published as a contribution to a periodical, serial, or collection, give information about the collective work in which the contribution appeared. Title of Collective Work ▼

If published in a periodical or serial give: Volume ▼ Number ▼ Issue Date ▼ On Pages ▼

2

a

NAME OF AUTHOR ▼

DATES OF BIRTH AND DEATH
Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
☐ Yes
☐ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶ ____
Domiciled in ▶ ____

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? ☐ Yes ☐ No
Pseudonymous? ☐ Yes ☐ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼

NOTE
Under the law, the "author" of a "work made for hire" is generally the employer, not the employee (see instructions). For any part of this work that was "made for hire" check "Yes" in the space provided, give the employer (or other person for whom the work was prepared) as "Author" of that part, and leave the space for dates of birth and death blank.

b

NAME OF AUTHOR ▼

DATES OF BIRTH AND DEATH
Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
☐ Yes
☐ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶ ____
Domiciled in ▶ ____

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? ☐ Yes ☐ No
Pseudonymous? ☐ Yes ☐ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼

c

NAME OF AUTHOR ▼

DATES OF BIRTH AND DEATH
Year Born ▼ Year Died ▼

Was this contribution to the work a "work made for hire"?
☐ Yes
☐ No

AUTHOR'S NATIONALITY OR DOMICILE
Name of Country
OR { Citizen of ▶ ____
Domiciled in ▶ ____

WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK
Anonymous? ☐ Yes ☐ No
Pseudonymous? ☐ Yes ☐ No
If the answer to either of these questions is "Yes," see detailed instructions.

NATURE OF AUTHORSHIP Briefly describe nature of material created by this author in which copyright is claimed. ▼

3

a YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED ____ ◀ Year
This information must be given in all cases.

b DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK
Complete this information ONLY if this work has been published.
Month ▶ ____ Day ▶ ____ Year ▶ ____
____ ◀ Nation

4

COPYRIGHT CLAIMANT(S) Name and address must be given even if the claimant is the same as the author given in space 2. ▼

See instructions before completing this space.

TRANSFER If the claimant(s) named here in space 4 is (are) different from the author(s) named in space 2, give a brief statement of how the claimant(s) obtained ownership of the copyright. ▼

DO NOT WRITE HERE OFFICE USE ONLY

APPLICATION RECEIVED

ONE DEPOSIT RECEIVED

TWO DEPOSITS RECEIVED

FUNDS RECEIVED

MORE ON BACK ▶ • Complete all applicable spaces (numbers 5-11) on the reverse side of this page.
• See detailed instructions. • Sign the form at line 10.

DO NOT WRITE HERE

EXAMINED BY

FORM TX

CHECKED BY

☐ CORRESPONDENCE
Yes

FOR COPYRI OFFICE USE ONLY

DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.

'REVIOUS REGISTRATION Has registration for this work, or for an earlier version of this work, already been made in the Copyright Office?
] Yes ☐ No If your answer is "Yes," why is another registration being sought? (Check appropriate box) ▼

. ☐ This is the first published edition of a work previously registered in unpublished form.

. ☐ This is the first application submitted by this author as copyright claimant.

☐ This is a changed version of the work, as shown by space 6 on this application.

your answer is "Yes," give: Previous Registration Number ▼ Year of Registration ▼

5

)ERIVATIVE WORK OR COMPILATION Complete both space 6a and 6b for a derivative work; complete only 6b for a compilation.
Preexisting Material Identify any preexisting work or works that this work is based on or incorporates. ▼

. Material Added to This Work Give a brief, general statement of the material that has been added to this work and in which copyright is claimed. ▼

6

See instructions before completing this space.

7

—space deleted—

:EPRODUCTION FOR USE OF BLIND OR PHYSICALLY HANDICAPPED INDIVIDUALS A signature on this form at space 10 and a check in one f the boxes here in space 8 constitutes a non-exclusive grant of permission to the Library of Congress to reproduce and distribute solely for the blind and physically andicapped and under the conditions and limitations prescribed by the regulations of the Copyright Office: (1) copies of the work identified in space 1 of this pplication in Braille (or similar tactile symbols); or (2) phonorecords embodying a fixation of a reading of that work; or (3) both.

8

a ☐ Copies and Phonorecords b ☐ Copies Only c ☐ Phonorecords Only

See instructions.

)EPOSIT ACCOUNT If the registration fee is to be charged to a Deposit Account established in the Copyright Office, give name and number of Account.
lame ▼ Account Number ▼

9

:ORRESPONDENCE Give name and address to which correspondence about this application should be sent. Name/Address/Apt/City/State/ZIP ▼

Area Code and Telephone Number ▶

Be sure to give your daytime phone number ◀

:ERTIFICATION* I, the undersigned, hereby certify that I am the

Check only one ▶
- ☐ author
- ☐ other copyright claimant
- ☐ owner of exclusive right(s)
- ☐ authorized agent of _____
  Name of author or other copyright claimant, or owner of exclusive right(s) ▲

f the work identified in this application and that the statements made y me in this application are correct to the best of my knowledge.

10

yped or printed name and date ▼ If this application gives a date of publication in space 3, do not sign and submit it before that date.

date ▶

Handwritten signature (X) ▼

MAIL :ERTIFI- :ATE TO

Name ▼

Number/Street/Apartment Number ▼

City/State/ZIP ▼

:ertificate vill be nailed in vindow :nvelope

YOU MUST:
- Complete all necessary spaces
- Sign your application in space 10

SEND ALL 3 ELEMENTS IN THE SAME PACKAGE:
1. Application form
2. Nonrefundable $20 filing fee in check or money order payable to *Register of Copyrights*
3. Deposit material

MAIL TO:
Register of Copyrights
Library of Congress
Washington, D.C. 20559-6000

11

The Copyrigh has the authori just fees at 5-year vals, based on changes in the Consumer Price Index. The next adjustment is due in 1996. Please contact the Copyright Office after July 1995 to determine the actual fee schedule.

17 U.S.C. § 506(e): Any person who knowingly makes a false representation of a material fact in the application for copyright registration provided for by section 409, or in any written statement filed in connection with the application, shall be fined not more than $2,500.

uly 1993—400,000 PRINTED ON RECYCLED PAPER ☆U.S. GOVERNMENT PRINTING OFFICE: 1993-342-582/80,020

Trademark Application

TRADEMARK/SERVICE MARK APPLICATION, PRINCIPAL REGISTER, WITH DECLARATION	MARK (Word(s) and/or Design)	CLASS NO. (If known)

TO THE ASSISTANT SECRETARY AND COMMISSIONER OF PATENTS AND TRADEMARKS:

APPLICANT'S NAME:

APPLICANT'S BUSINESS ADDRESS: _____
(Display address exactly as it should appear on registration) _____
_____
_____

APPLICANT'S ENTITY TYPE: (Check one and supply requested information)

[ ] Individual - Citizen of (Country):

[ ] Partnership - State where organized (Country, if appropriate): _____
Names and Citizenship (Country) of General Partners: _____
_____
_____

[ ] Corporation - State (Country, if appropriate) of Incorporation:

[ ] Other (Specify Nature of Entity and Domicile):

GOODS AND/OR SERVICES:

Applicant requests registration of the trademark/service mark shown in the accompanying drawing in the United States Patent and Trademark Office on the Principal Register established by the Act of July 5, 1946 (15 U.S.C. 1051 et. seq., as amended) for the following goods/services **(SPECIFIC GOODS AND/OR SERVICES MUST BE INSERTED HERE)**:

_____
_____
_____
_____
_____

BASIS FOR APPLICATION: (Check boxes which apply, but never both the first AND second boxes, and supply requested information related to each box checked.)

[ ] Applicant is using the mark in commerce on or in connection with the above identified goods/services. (15 U.S.C. 1051(a), as amended.) Three specimens showing the mark as used in commerce are submitted with this application.
- Date of first use of the mark in commerce which the U.S. Congress may regulate (for example, interstate or between the U.S. and a foreign country): _____
- Specify the type of commerce: _____
(for example, interstate or between the U.S. and a specified foreign country)
- Date of first use anywhere (the same as or before use in commerce date): _____
- Specify manner or mode of use of mark on or in connection with the goods/services: _____
_____
(for example, trademark is applied to labels, service mark is used in advertisements)

[ ] Applicant has a bona fide intention to use the mark in commerce on or in connection with the above identified goods/services. (15 U.S.C. 1051(b), as amended.)
- Specify intended manner or mode of use of mark on or in connection with the goods/services: _____
_____
(for example, trademark will be applied to labels, service mark will be used in advertisements)

[ ] Applicant has a bona fide intention to use the mark in commerce on or in connection with the above identified goods/services, and asserts a claim of priority based upon a foreign application in accordance with 15 U.S.C. 1126(d), as amended.
- Country of foreign filing: _____ • Date of foreign filing: _____

[ ] Applicant has a bona fide intention to use the mark in commerce on or in connection with the above identified goods/services and, accompanying this application, submits a certification or certified copy of a foreign registration in accordance with 15 U.S.C. 1126(e), as amended.
- Country of registration: _____ • Registration number: _____

NOTE: Declaration, on Reverse Side, MUST be Signed

f submitted on one page, side two of the form should be "Upside Down" in relation to page 1.

DECLARATION

The undersigned being hereby warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application or any resulting registration, declares that he/she is properly authorized to execute this application on behalf of the applicant; he/she believes the applicant to be the owner of the trademark/service mark sought to be registered, or, if the application is being filed under 15 U.S.C. 1051(b), he/she believes applicant to be entitled to use such mark in commerce; to the best of his/her knowledge and belief no other person, firm, corporation, or association has the right to use the above identified mark in commerce, either in the identical form thereof or in such near resemblance thereto as to be likely, when used on or in connection with the goods/services of such other person, to cause confusion, or to cause mistake, or to deceive; and that all statements made of his/her own knowledge are true and that all statements made on information and belief are believed to be true.

DATE _____ SIGNATURE _____

TELEPHONE NUMBER _____ PRINT OR TYPE NAME AND POSITION _____

INSTRUCTIONS AND INFORMATION FOR APPLICANT

TO RECEIVE A FILING DATE, THE APPLICATION MUST BE COMPLETED AND SIGNED BY THE APPLICANT AND SUBMITTED ALONG WITH:

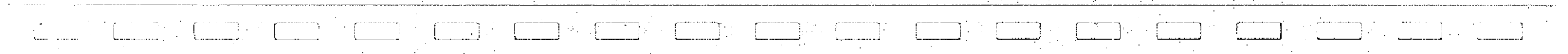
1. The prescribed FEE **($245.00 effective 10/1/93)*** for each class of goods/services listed in the application;
2. A DRAWING PAGE displaying the mark in conformance with 37 CFR 2.52;
3. If the application is based on use of the mark in commerce, THREE (3) SPECIMENS (evidence) of the mark as used in commerce for each class of goods/services listed in the application. All three specimens may be in the nature of: (a) labels showing the mark which are placed on the goods; (b) photographs of the mark as it appears on the goods, (c) brochures or advertisements showing the mark as used in connection with the services.
4. An APPLICATION WITH DECLARATION (this form) - The application must be signed in order for the application to receive a filing date. Only the following person may sign the declaration, depending on the applicant's legal entity: (a) the individual applicant; (b) an officer of the corporate applicant; (c) one general partner of a partnership applicant; (d) all joint applicants.

SEND APPLICATION FORM, DRAWING PAGE, FEE, AND SPECIMENS (IF APPROPRIATE) TO:
Commissioner of Patents and Trademarks
Box TRADEMARK
Washington, D.C. 20231

Additional information concerning the requirements for filing an application is available in a booklet entitled **Basic Facts About Registering a Trademark**, which may be obtained by writing to the above address or by calling: (703) 308-HELP.

*Fees are subject to change; changes usually take effect on October 1. If filing on or after October 1, 1994, please call the PTO to confirm the correct fee.

Record and Disclosure of Invention Form



RECORD AND DISCLOSURE OF INVENTION

DIRECTIVE: ONRINST 5870.1C

DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
ARLINGTON, VA 22217

INSTRUCTIONS: A Navy inventor or an employee of a Navy contractor should use this form when submitting an invention disclosure to the Department of the Navy. Original and two copies should be printed or typed and forwarded to the Navy Patent representative in the area of directly to the Office of Naval Research at the above address. Where space on form is inadequate, enter "see attached page," identify item by number and use plain pages as needed. When completely executed, this form becomes an important legal document useful in proving priority of invention.

FOR USE BY NAVY PATENT ACTIVITY	
PATENT ACTIVITY (*Name*) CASE NO.	NAVY
DATE DISCLOSURE REC'D CASE NO.	LOCAL

PART I. RECORD OF INVENTION

1. INVENTOR(S)	ADDRESS	POSITION TITLE	EMPLOYER (*Activity & Code No. or Company & address*)

2. DESCRIPTIVE TITLE OF INVENTION (*Disclosure details of invention in PART II on reverse*)	RECOMMENDED SECURITY CLASSIFICATION AND AUTHORITY ON INVENTION DISCLOSURE

3. CONCEPTION, I INITIAL RECORDS AND RESULTS OF FIRST MODEL

a. EARLIEST DATE AND PLACE INVENTION WAS CONCEIVED (*Identify persons and records to support date and place*)

b. DATE AND PRESENT LOCATION OF FIRST SKETCH, DRAWING OR PHOTO AND FIRST WRITTEN DESCRIPTION (*Such as notebook entries, etc.*)

c. DATE AND PLACE OF COMPLETION FIRST OPERATING MODEL OR FULL SIZE DEVICE AND ITS PRESENT LOCATION.

d. DATE AND PLACE OF FIRST TEST OR OPERATION AND THE RESULTS (*Give name and address of witnesses, and present location of records*)

4. OTHER RECORDS (*Notebook entries, descriptions, reports, drawings, etc.*)

IDENTIFICATION	DATE OF DOCUMENT	PRESENT LOCATION

5. OTHER INDIVIDUALS TO WHOM INVENTION WS DISCLOSED

NAME	ACTIVITY OR COMPANY INDIVIDUAL PRESENT	DATE DISCLOSED	TYPE (*Oral or written disclosures*)

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6. DATE AND PLACE OF OTHER TESTS OR OPERATIONS AND THE RESULTS (*List name and address of witnesses and identify present location of record)*

7. IDENTIFY ANY PAST, PRESENT OR CONTEMPLATED USE, SALE, OR PUBLICATION OF THE INVENTION.

8. CLOSING RELATED PATENTS, PATENT APPLICATIONS, AND PUBLICATIONS

PATENT OR APPLICATION NO. & DATE	TITLE OF PUBLISHED ARTICLE	PUBLICATION NAME AND DATE

PART II; DISCLOSURE OF INVENTION

Describe the invention and completely, using the outline given below. Sketches, prints, photos and other illustrations should be attached to this disclosure. Use additional plain pages as needed to complete the disclosure.

1. GENERAL PURPOSE. State in general terms the purpose and objects of the invention.
2. BACKGROUND. Describe the old methods, materials or apparatus used to perform the objects of the invention and give their limitations and disadvantages.
3. DESCRIPTION AND OPERATION. Describe the clearly and completely the construction of the invention and give a detailed description of its operation and use. In the description, use reference characters to refer to components in attached illustrations.
4. ADVANTAGES AND NEW FEATURES. State the advantages of the invention over the old methods described in paragraph number two above and the features believed to be new.
5. ALTERNATIVE. Indicate any alternative methods, materials, or constructions of the invention.
6. CONTRIBUTIONS BY INVENTORS. If this is a joint invention, indicate what contribution was made by each inventor.
7. EXECUTION OF DISCLOSURE. The end of the disclosure should be signed and dated by the inventor(s). The disclosure should then be read and understood by two technically qualified witnesses. Under inventor(s) signatures, enter the statement . . . "disclosed to and understood by me on (date)." The two witnesses should sign under this statement.

Application for License to Practice Invention

APPLICATION FOR LICENSE TO PRACTICE INVENTION

Anyone interested in applying for a license to practice any of the patents or patents applied for should answer the following questions and return the completed application to

Richard H. Rein, Code 1004
Director, Technology Transfer
Naval Research Laboratory
4555 Overlook Avenue SW
Washington, DC 20375-5320.

37 CFR 404.8

PART I. IDENTIFICATION OF INVENTION

1. NAVY CASE NO. (If known)

2. TITLE OF INVENTION

3. NAME OF INVENTOR(S)

4. PATENT DATA

a. U.S. PATENT APPLICATION SERIAL NO. ___ AND FILING DATE ___
b. U.S. PATENT NO. ___ AND ISSUE DATE ___

5. SOURCE OF INFORMATION CONCERNING THE AVAILABILITY OF A LICENSE ON THIS INVENTION

PART II. INFORMATION DESCRIBING APPLICANT

6. NAME AND ADDRESS OF THE PERSON, COMPANY, PARTNERSHIP, CORPORATION OR ORGANIZATION APPLYING FOR LICENSE

7. NAME, ADDRESS AND TELEPHONE NUMBER OF REPRESENTATIVE OF APPLICANT TO WHOM CORRESPONDENCE SHOULD BE SENT

8. APPLICANT'S CITIZENSHIP OR PLACE OF INCORPORATION

9. IS APPLICANT A SMALL BUSINESS FIRM AS DEFINED AT SECTION 2 OF PUBLIC LAW 85-536 (15 USC 632) AND IMPLEMENTING REGULATIONS OF THE ADMINISTRATOR OF THE SMALL BUSINESS ADMINISTRATION? YES __ NO __

10.

a. IS APPLICANT DIRECTLY OR INDIRECTLY CONTROLLED BY A FOREIGN COMPANY OR GOVERNMENT? YES __ NO __
(IF YES, PLEASE IDENTIFY COMPANY OR GOVERNMENT: ___)
b. IS APPLICANT DEBARRED, SUSPENDED, PROPOSED FOR DEBARMENT OR DECLARED INELIGIBLE FOR PARTICIPATION IN PROCUREMENT PROGRAMS? YES __ NO __

11. NATURE AND TYPE OF APPLICANT'S BUSINESS IDENTIFYING PRODUCTS OR SERVICES WHICH THE APPLICANT HAS SUCCESSFULLY COMMERCIALIZED

12. APPROXIMATE NUMBER OF APPLICANT'S EMPLOYEES

13. STATE APPLICANT'S BEST KNOWLEDGE OF THE EXTENT TO WHICH THE INVENTION IS BEING PRACTICED BY PRIVATE INDUSTRY OR THE GOVERNMENT, OR BOTH, OR IS OTHERWISE AVAILABLE COMMERCIALLY

PART III. PLAN FOR DEVELOPMENT AND/OR MARKETING OF THE INVENTION
(Additional pages may be attached.)

14. DESCRIBE IN DETAIL APPLICANT'S PLAN FOR DEVELOPMENT AND/OR MARKETING OF THE INVENTION:

a. STATE THE TIME WHICH APPLICANT BELIEVES WILL BE REQUIRED TO BRING THE INVENTION TO PRACTICAL APPLICATION. INCLUDE MILESTONES AND A TARGET TIME BY WHICH APPLICANT WILL HAVE A COMMERCIAL PRODUCT AVAILABLE TO THE PUBLIC
b. STATE THE NATURE AND AMOUNT OF ANTICIPATED INVESTMENT OF CAPITAL AND OTHER RESOURCES WHICH APPLICANT BELIEVES WILL BE REQUIRED TO MAKE THE INVENTION AVAILABLE TO THE PUBLIC
c. STATE THE APPLICANT'S CAPABILITY AND INTENTION TO FULFILL THE PLAN, INCLUDING INFORMATION REGARDING MANUFACTURING (SPECIFY EVERY COUNTRY WHERE PRODUCTS EMBODYING THE INVENTION OR PRODUCED THROUGH THE USE OF THE INVENTION WILL BE MANUFACTURED), MARKETING, FINANCIAL AND TECHNICAL RESOURCES
d. STATE THE FIELDS OF USE FOR WHICH APPLICANT INTENDS TO PRACTICE THE INVENTION
e. STATE THE GEOGRAPHIC AREAS IN WHICH THE APPLICANT INTENDS TO MANUFACTURE ANY PRODUCTS EMBODYING THE INVENTION AND THE GEOGRAPHIC AREAS WHERE APPLICANT INTENDS TO USE AND/OR SELL THE INVENTION
f. STATE THE PROJECTED ANNUAL SALES OF THE INVENTION FOR SEVERAL YEARS AFTER THE DATE IT IS TO BE AVAILABLE TO THE PUBLIC

PART IV. OTHER

15. STATE MINIMUM NUMBER OF YEARS FOR WHICH APPLICANT SEEKS A LICENSE

16. IDENTIFY LICENSES PREVIOUSLY GRANTED TO APPLICANT UNDER FEDERALLY-OWNED INVENTIONS

17. STATE ANY OTHER INFORMATION WHICH THE APPLICANT BELIEVES WILL SUPPORT A DETERMINATION TO GRANT THE LICENSE TO APPLICANT

18. TYPE OF LICENSE REQUESTED

__ NONEXCLUSIVE
__ EXCLUSIVE
__ PARTIALLY EXCLUSIVE (Identify limitations)

IF AN EXCLUSIVE OR PARTIALLY EXCLUSIVE LICENSE IS REQUESTED, THE APPLICANT MUST PROVIDE REASONS WHY EXCLUSIVITY IS NECESSARY

19. SIGNATURE OF APPLICANT OR REPRESENTATIVE OF APPLICANT

DATE