

# PARTNERING WITH NRaD FOR TECHNOLOGY TRANSITION



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The RDT&E Division of the Naval Command, Control and Ocean Surveillance Center (NCCOSC)

## **Office of Research and Technology Applications (ORTA)**

Here, at NRaD San Diego, we strongly support the transfer of federally developed technologies to U.S. industry through building strong relationships with our individual partners. Although several mechanisms are available to transfer these technologies, the most common are described in this guide. Choosing the most appropriate one depends upon the specific needs of the company and NRaD. This guide describes and summarizes the general features and advantages of each mechanism.

For additional information about any of these means of transferal or to explore other ways to do business with NRaD, please contact the

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## **Office of Research and Technology Applications (ORTA)**

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## Working With NRD

To strengthen our nation's economy and improve its position in the increasingly competitive global marketplace, NRD, as well as the other DoD and federal laboratories, is soliciting contacts with industry to transfer federal technologies and expertise to the commercial sector. This guide describes the characteristics and features of some of the many mechanisms available to use as gateways for working with NRD and gaining access to its technology and expertise . . . and that of the entire federal laboratory system.

- **CRADA** – The Cooperative Research and Development Agreement (CRADA or CRDA) is an agreement between NRD and one or more nonfederal parties under which NRD provides personnel, facilities, equipment, or other resources with or without reimbursement (but not funds to nonfederal parties).
- **NPCP** – The Navy Potential Contractor Program (NPCP) provides an approved means for interchanging technical information between NRD employees and civilian scientists and engineers. The NPCP can provide non-Navy contractors access to classified and unclassified Navy technical information.
- **SBIR** – The Small Business Innovation Research Program (SBIR) provides federal funds to promote small business participation in NRD and other federal development programs.

## Working With NRD

## Working With NRaD (continued)

- **STTR** - The Small Business Technology Transfer (STTR) Program provides federal funds to promote cooperative R&D agreements between small businesses and research institutions.
- **Patent Licensing Agreement** - Licensing by NRaD of its intellectual property to the private sector means the transfer of less-than-ownership rights in the intellectual property to a third party to permit the use, sale, or manufacture of that intellectual property by the third party.
- **User Facility Agreement: Facilities/Testbeds** - Allows use of unique NRaD test facilities and testbeds by nonfederal parties, including other complex, experimental scientific facilities, equipment, and expertise at the laboratory.

## **Cooperative Research and Development Agreement (CRADA)**

A CRADA (or CRDA) is an agreement between one or more federal laboratories and one or more nonfederal parties. Under a CRADA, NRD may provide personnel, services, facilities, equipment, or other resources with or without reimbursement (but not funds to nonfederal parties). The nonfederal parties provide funds, personnel, services, equipment, or other resources toward conducting specified research and development efforts consistent with the mission of NRD.

A CRADA -

- Requires R&D participation by industry partners.
- May be accompanied by a license or option agreement.
- Requires "substantial U.S. manufacture" of resulting products and services.
- Provides that each party receives title to the intellectual property created or invented by its employees.
- Stipulates that NRD cannot pay funds to the industry partner.
- Requires that special consideration be given to small businesses and consortia involving small businesses.

## **Cooperative Research and Development Agreement (CRADA)**

## **Cooperative Research and Development Agreement (CRADA) (continued)**

*NOTE: The U.S. Government retains a nonexclusive, paid-up, royalty-free, worldwide irrevocable license to use or have used and to manufacture or have manufactured (for government purposes) intellectual property developed by agencies of the government.*

For more information, contact:

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## **Navy Potential Contractor Program (NPCP)**

The Navy Potential Contractor Program (NPCP) provides an approved means for interchanging technical information between NRaD employees and contractor scientists and engineers. Through the NPCP, classified and unclassified technical information on Navy requirements, planning, and existing research and development is available to qualified U.S.-owned firms, individuals, or nonfederal parties. Access to Navy information is provided on the need-to-know basis required to conduct a no-cost to the government project or study.

An NPCP agreement -

- Is for current DoD contractors qualified in other scientific or technical areas not covered by their current contract, or,
- Is for other U.S.-owned firms who wish to be considered for future contracts.
- Enables such firms to discover and assess Navy applications for their current products and services.
- Enables such firms to plan future Industrial Independent Research and Development (IR&D) efforts in consonance with stated Navy requirements.
- Requires that potential contractors invest their own discretionary resources to conduct NPCP studies/projects and report progress/results to NRaD.

## **Navy Potential Contractor Program (NPCP)**

## Navy Potential Contractor Program (NPCP) (continued)

- Is considered a no-cost contract; no government funds are available to the potential contractor.
- Is in effect 1 to 3 years and is not renewable.

For more information, contact:

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**Small Business Innovation Research (SBIR) Program and Small Business  
Technology Transfer (STTR) Program (continued)**

- Copies of the DoD SBIR or STTR solicitation books may be requested from the Defense Technical Information Center:

*Defense Technical Information Center (DTIC)  
ATTN: DTIC-BCU (SBIR)  
Defense Technical Information Center  
8725 John J. Kingman Road, Suite 0944  
Ft. Belvoir, VA 22060-6218  
Voice: (800) 363-7247, (800) DOD-SBIR,  
(703) 274-6903*

For more information, contact:

*Ms. Louise Goodman  
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## **Small Business Innovation Research (SBIR) Program and Small Business Technology Transfer (STTR) Program**

The SBIR and STTR programs are both highly competitive, federally funded, three-phased programs, designed to promote small business participation in research and development. The major difference between the two programs is that the SBIR award is to the small business alone, whereas the STTR award can be made only to a partnership between a small business and a research institute conducting joint research. NRD participates in the Navy SBIR and STTR programs by providing (1) proposal topics for the DoD solicitations and (2) administering award contracts.

- Phase I establishes the technical feasibility of the research.
- Phase II is the principal R&D effort.
- Phase III transitions the product or process
  - to the commercial marketplace, using private capital or non-SBIR funds, or
  - to federal agencies who may award non-SBIR-funded follow-on contracts to meet their mission needs.
- DoD SBIR Program Solicitation Books are generally available in May and October of each year.
- DoD STTR Program Solicitation Books are generally available in April of each year.

## **Small Business Innovation Research (SBIR)/Technology Transfer (STTR) Programs**

## Patent Licensing Agreement

To facilitate converting laboratory-developed intellectual properties into commercial products, NRD negotiates patent licenses with private companies to manufacture, sell, or use these products.

The NRD patent portfolio offers a broad range of dual-use technologies, including:

- Communications
- Environmental Science
- Electronics
- Microelectronics
- Surveillance
- Ocean Engineering
- Photonics

A patent license may -

- Be exclusive or nonexclusive.
- Be royalty-free or royalty-bearing.
- Have a limited or broad field of use, or a defined geographic area of use.

*NOTE: The U.S. Government retains a nonexclusive, paid-up, royalty-free, worldwide license to the invention.*

The NRD portfolio includes approximately 400 licensable patents. Data are maintained in an electronic patent library which can be queried for specific requirements.

## Patent Licensing Agreement

## Patent Licensing Agreement (continued)

For more information, contact:

*Dr. Larry Flesner*  
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## **Test Facilities/Testbeds**

NRaD solicits industry and university partners to conduct proprietary or nonproprietary research and testing at NRaD's state-of-the-art test facilities. These laboratories are networked together and have over 30 testbeds, enabling user-specified component- and systems-level testing that includes:

- Specific testing to support systems software.
- In-service support to retest software/hardware interfaces.
- Detailed and general tests of throughput.
- Compatibility testing at all levels, including protocol testing.
- Simulation of environments to simulate actual operational environments.
- Testbeds that "talk" to each other.
- Satellite communications on-air testing.
- Complete real, simulated, and replicated all-environment testing of GPS user equipment.
- Full-spectrum live, simulated, and replicated all-environment testing of command, control, communications, computers, and intelligence (C4I) systems.
- Testbeds that simulate a complete joint-services theater of operations or battle space.

For more information, contact:

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## **Test Facilities/Testbeds**

## Summary

NRaD and all our other federal laboratories believe that building strong partnerships with U.S. industry and transferring federally developed technologies and expertise to our private sector will strengthen the U.S. economy . . . assuring an ongoing competitive edge in the global marketplace. For further information about the many state-of-the-art technologies available at NRaD and the transferal mechanisms needed to acquire them, please contact any of the following ORTA staff:

### Office of Research and Technology Applications (ORTA)

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### Test Facilities/Testbeds

### Cooperative Research and Development Agreement (CRADA or CRDA) Navy Potential Contractor Program (NPCP)

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### Small Business Innovation Research Program (SBIR) Small Business Technology Transfer (STTR) Program

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### Patent Licensing Agreement

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## Summary

## Glossary

<b>Contract</b>	An acquisition instrument entered into between the government and a contractor for the contractor to provide supplies or services to the government. Often used to promote research and development that can subsequently be transferred to the private sector.
<b>Copyright</b>	Legal protection provided for original works of authorship fixed in a tangible medium of expression as provided for in Title 17 of the United States Code. Examples of some works that are copyrightable: writings, paintings, movies, sculptures, and computer software.
<b>CRADA</b> (also known as CRDA)	A cooperative research and development agreement as provided for by Title 15 of the United States Code. This agreement is between one or more federal laboratories and one or more nonfederal parties under which the laboratory may provide personnel, services, facilities, equipment, intellectual property, or other resources (but not funds) with or without reimbursement to the nonfederal parties. The nonfederal parties may provide funds, personnel, services, facilities, equipment, or other resources to conduct specific research or development efforts consistent with the federal laboratory's mission.
<b>Dual Use</b>	A technology that has military and commercial applications.
<b>Exclusive Patent License</b>	A right granted by a patent owner to one or more licensees to provide for the exclusive legal right to make, use, or sell the patented invention in the United States. If several parties are licensees, then such licenses are called partially exclusive licenses.
<b>FLC</b>	Federal Laboratory Consortium for Technology Transfer. The organization of federal research and development laboratories and centers established pursuant to Section 10(e) of reference (b) (codified in Title 15 U.S.C. Section 3710(e)). It was formed to identify and mobilize the resources needed to provide the environment, organization, and technology transfer mechanisms required for the fullest possible utilization of federally sponsored research and development.
<b>FOCI</b>	Foreign-owned, -controlled, or -influenced.
<b>FOIA</b>	Freedom of Information Act.
<b>FTTA</b>	Federal Technology Transfer Act of 1986 (PL 99-502).
<b>GOCO</b>	Government-Owned, Contractor-Operated (facility).

## Glossary

## Glossary (continued)

<b>GOGO</b>	Government-Owned, Government-Operated (facility).
<b>Intellectual Property</b>	An intangible right that can be bought and sold, leased or rented, or otherwise transferred between parties in much the same way that rights to real property or other personal property can be transferred.
<b>Invention</b>	Any innovation or discovery which is or may be patentable or otherwise protected under Title 35 U.S.C., or any novel variety of plant which is or may be protected under the provision of the Plant Variety Protection Act, Title 7 U.S.C.
<b>Laboratory</b>	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>License</b>	The contract that gives permission to make, use, or sell a patented product or process. Licensing can be exclusive or nonexclusive, for a specific field of use, for a specific geographical area, or U.S. or foreign. If ownership is transferred, it is called an assignment.
<b>Mask Work</b>	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. Source: 17 U.S. Code 901 (a) (2).
<b>NCTA</b>	National Competitiveness Technology Transfer Act of 1989.
<b>Nonexclusive License</b>	Right granted by a patent holder to a licensee to use, manufacture, and sell a patented article. A nonexclusive license allows the patent holder to grant additional licenses for a patented article.
<b>NTTC</b>	National Technology Transfer Center. The NTTC was established to serve as a gateway to a national technology transfer network to provide education and training to leaders in business, government, and economic development. The information furnished concerns the best ways to implement technology transfer procedures and perform outreach services to develop working relationships and agreements with trade and professional associations and sources for technology transfer.



<b>ORTA</b>	Office of Research and Technology Applications is an organizational unit created under Public Law 96-480. The primary function of this office is to disseminate information on federally owned or originated products, processes, and services linking the research and development resources of the federal laboratories, and the federal government as a whole, to state and local government and the private sector.
<b>Patent</b>	A grant from the federal government to an inventor wherein, in exchange for the inventor providing an enabling disclosure of the invention and complying with other legal requirements, the government awards the inventor with the right to exclude others from making, using, or selling the claimed invention for a period of time, usually 17 years.
<b>Proprietary Information</b>	Information which embodies trade secrets developed at private expense and commercial or financial information which is privileged or confidential under the Freedom of Information Act. Normally, for such information to be afforded legal protection, it should be recorded and marked as proprietary. Note: Related terms sometimes used are <i>restricted computer software</i> and <i>limited rights data</i> .
<b>Patent Royalty</b>	Monies or other consideration usually payable to a patent owner by a licensee of the covered patent.
<b>RTTC</b>	Regional Technology Transfer Center. The RTTCs, established in the six FLC regions spanning the United States, are sponsored by NASA in support of the federal technology transfer mission. The centers provide a full range of services to U.S. firms and industry within their regions, assisting clients to locate, assess, acquire, and commercialize technologies from throughout NASA and the federal R&D base.
<b>Small Business</b>	A business defined as a small business by the Administrator of the Small Business Administration in accordance with 15 U.S.C. 632 and implementing regulation (e.g., 13 CFR 121.3-8 and 13 CFR 121.3-12). For many businesses, this designation is determined by its industrial classification, the number of its employees (e.g., less than 500), and its competitive relationship to other businesses in that industry.
<b>SBIR</b>	The Small Business Innovation Research (SBIR) program is federally funded to promote small business participation in government programs. Characteristics of the arrangement include a 2-year confidentiality limit on data, ability of the contractor to acquire title to inventions, and multiple funding phases from feasibility to private commercialization.
<b>STTR</b>	The Small Business Technology Transfer (STTR) program requires five federal agencies to fund cooperative research and development projects involving a small company and a researcher at a university, federally funded research and development center, or nonprofit institution.

**Glossary (continued)**

## Glossary (continued)

<b>T2</b>	Technology transfer.
<b>Technology Transfer</b>	The process by which technology, knowledge, and information developed in one organization, one area, or for one purpose is applied or used in another organization, in another area, or for another purpose.
<b>Title</b>	An intangible legal right of ownership to property.
<b>Trademark</b>	Establishes a unique expression to identify the source of goods or services for commercial purposes. Trademark registration can be obtained from the federal government and often from state governments.
<b>Trade Secret</b>	Provides the right for withholding any commercial formula, device, pattern, process, or information that affords a businessperson an advantage over others who do not know it.
<b>TRP</b>	Technology Reinvestment Program. A federally funded program to help U.S. companies convert defense-related technologies to commercial applications or to combined civilian-military use.
<b>User Facilities</b>	Unique, complex, experimental, scientific facilities, equipment, software, and collection of expertise at a government laboratory specifically designated by the cognizant agency for use by the technical community, including universities, industries, other laboratories, and other government entities.
<b>Waiver</b>	The relinquishment of a legal right to do something. In technology transfer agreements, this right is usually the right of the government to obtain title to inventions developed under an agreement.