

Intellectual Property & Technology Transfer Handbook

Office of Research
Florida State University

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INTRODUCTION

Among the many roles of the University are the dissemination and expansion of knowledge and the performance of public service. The process of fulfilling these roles creates an environment, which generates new and useful inventions, which may be granted protection and professional recognition in the form of patents issued in the name of the inventor. Patent protection is sought to increase the chances worthwhile innovations will be actively pursued and developed for the public benefit, not just recorded in the literature. Some patentable inventions may have commercial applications that, through licensing, could provide additional funds to support the work of the inventor.

The transfer of technology to industrial concerns with the capability to develop and market these new products and processes is an increasingly important contribution to state and national economic development. While all inventions may not result in income to the inventor and the University, it is the University's responsibility to be capable of using the patent system to protect and enhance basic research and to bring into public use commercially applicable discoveries.

This handbook provides a general description of the technology transfer process at The Florida State University (FSU) and gives a brief review of information related to patents, copyrights and the protection process. Although this handbook provides information relating to patentable and copyrightable inventions, many types of unpatentable technology, innovations and knowledge are readily transferable to the private sector through the Technology Transfer office. In fact the term "technology transfer" has a broad meaning: the transfer of technology, innovations and knowledge to the commercial, academic and public arenas.

For more information, or if you believe you may have a patentable invention, or other piece of intellectual property that may benefit the public through technology transfer, please contact Technology Transfer, Office of Research.

GENERAL INFORMATION

WHAT IS A PATENT?

A patent is a property right granted by a sovereign nation that gives the holder the exclusive right to exclude others, without permission, from the manufacture, use and sale of an invention for a period of years.

In the United States, the Constitution gives Congress the power "to promote the progress of science and useful arts, by securing, for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries." (Article 1, Section 8, Clause 8). Pursuant to this authority, Congress enacted the first patent law in 1790. It is now codified in Title 35 of the United States Code.

A patent is an agreement between the inventor and the public. Patents aid progress by allowing full public disclosure of an invention while granting the inventor the right to exclude others from making, using or selling the defined invention without permission.

As property, it may be sold or assigned, pledged, mortgaged, licensed, willed or donated. Commercialization may be accomplished by the owner exercising the rights referred to above or by permitting others to exercise rights under the terms of one or more licenses. The grant of a U.S. Patent is effective for a period of 17 years from issuance but not more than 20 years from the date of application.

WHAT IS AN INVENTION?

The patent laws set the classes of inventions eligible for patenting. Those statutes provide that any inventor who "invents or discovers a new or useful process, machine, manufacture, or composition-of-matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of the law."

PATENT CATEGORIES

To be patentable, it is important to emphasize an invention must be a process, machine, article of manufacture or composition of matter. Inventions that are not patentable include: laws of nature, methods of doing business, theories, plans of action, ideas or results.

A process is a mode of treatment of certain materials to produce a given result. It is an act or series of acts performed on the subject to be transformed and reduced to a different state or thing.

A machine is a distinctive means for accomplishing a certain result. It differs from a process in that it is limited to a particular apparatus.

A manufacture is an article or product. In this case, patentability depends on the functional relationship of structural elements.

Composition of matter refers to chemical and metallurgical compositions and may include certain combinations of ingredients as well as new compounds.

It is also possible to patent an improvement to any item patented in one of the above categories, but it must be more than a change in design or proportions and must, like inventions in the other categories, meet the criteria below.

PATENT CRITERIA

An invention must meet three tests to be patentable:

1. Novelty—To be patentable an invention must be "new." Even though an invention is new to the inventor, it is not patentable if another inventor made the same discovery earlier. If it has been used or sold, or known by others, patented or disclosed in a printed publication, a new patent is barred.
2. Utility—The subject must be of some degree of use for some purpose that is not immoral. The law does not require the device to be a commercial success, that it is perfect, or that it is of such general utility as to supersede all current means of accomplishing the same purpose. The test of operativeness is to ascertain whether the subject invention does (even imperfectly) that which is claimed.
3. Nonobviousness—A patent must not be obvious to a person who has ordinary skill in the art and is aware of previous work in the field. This criterion is subjective and is the most troublesome of all the requirements. However, mere simplicity does not bar a patent.

WHO MAY PATENT—Any person who has made a patentable discovery may file application for a patent thereon. However, a university, corporation or other business association may not file an application in its own name. The application must be filed in the inventor's name in every instance.

Where two or more persons made joint contributions to a patentable discovery, all inventors must join in the invention disclosure. Incorrect claims of inventorship could result in invalidation of an otherwise good patent. For example, when an assistant carries out directions of another and in so doing constructs a new device or employs a new process, the assistant does not become a joint inventor, since the assistant was merely following suggestions and applying skills or abilities normally performed or required.

U.S. vs. FOREIGN PATENTS

The United States is a member of a convention that provides that a patent application can be filed in other countries within a year of the U.S. filing and will be accorded the priority date of the U.S. filing. Over 60 countries have signed this treaty which guarantees the same rights to citizens of foreign countries that are granted their own citizens. So, anytime an application is filed in one country and then refiled in another, the second filing is given the benefit of the first filing date. To obtain patent protection in another country, the inventor must file in compliance with local laws. Generally, most foreign countries have the following guidelines:

1. Any enabling publication, prior to the filing of a patent application, nullifies the right to patent (except in the USA - see below);
2. The patented article (product) must be manufactured in the country after a certain period; and
3. Fees are revised annually.

PUBLICATION

While publication is important in disseminating information about discoveries, the timing of publication may prohibit patenting. A patent is a special type of publication that describes the invention to the public in return for protection against unauthorized use. Prior publication in a scientific or other journal places the invention in the public domain and voids any ability to obtain a patent in most countries of the world.

In the U.S., it is generally well known that a publishing inventor has a grace period of one year to file an application after disclosure through publication. If the U.S. Patent Application is filed prior to any "enabling" publication, worldwide patent rights are preserved for one year from the U.S. filing date. If, however, a development is published before filing a U.S. Patent Application, most foreign patent rights are lost.

Publication in the legal sense is difficult to avoid. Articles in newspapers, newsletters, bulletins, textbooks, journals, theses and reports all qualify as publications. Oral presentations may constitute publication in some countries, as would distribution of a paper at a public meeting.

The key test is that the publication must be "enabling"—it must describe the invention in sufficient detail that it could be duplicated or put into use. Describing results (e.g., three times faster and twice as effective) alone are not enabling without the underlying description of how the results were accomplished.

Inventors should seek advice and carefully consider the timing and ramifications of publication.

PATENTS AND THE POSSIBILITY OF PROFIT

As a general rule of thumb, only a small percentage of invention disclosures result in revenue to the University. If a patent is awarded, it will have been judged to be novel, useful and non-obvious, but it may still lack the elements needed for commercial success. The world does not beat a path to the door of every patent holder, and many patents never repay the costly expense of filing and pursuing the application. Since the road to commercialization is often difficult, an assessment of the likelihood of economic development should be taken into account before deciding to proceed.

While patents are intended to promote progress and serve the public, patents also benefit inventors and their institutions through recognition and monetary returns when the commercial potential is realized. This is usually accomplished through licensing agreements.

A patent owner, having the right to exclude others from using the invention, may also grant permission to others to infringe. A license agreement is the typical contract by which a patented invention developed, in this case by the University, is put into use. A license is essentially an agreement by the patent owner not to sue for infringement, so long as the licensee's actions are within the terms of the agreement. A license typically addresses:

- ◆ The rights extended under the license;
- ◆ The term and territory of the license;
- ◆ The degree of exclusivity and field of use;
- ◆ Amount of license fee or other consideration to be paid by the licensee;
- ◆ Amount and assignment of royalty rates on sales of products and services, including a minimum payment;
- ◆ Milestones the licensee must meet and provision for termination;
- ◆ Improvements and new discoveries;
- ◆ Provision for the inventor to continue to use the invention for research purposes;
- ◆ Collaborative activities between licensor and licensee; and
- ◆ Indemnifications and Warranties.

INVENTION DISCLOSURE AND THE PATENT APPLICATION

In order to be granted, a patent application must contain a full and complete disclosure of the invention. The disclosure process begins with the inventor detailing, in written form, a description of the invention, the novel features and any results that support the inventor's claim of novelty. It is most important to make a full disclosure of the invention and to define it in such a way as to clearly create borders of protection for the resulting patent. FSU has an invention disclosure form to assure that all possible information is supplied (see below).

A full disclosure to the patent office is accomplished by filing what is known as an application package, most often prepared by a patent attorney. The "package" usually consists of the patent application, copies of prior art (publication), a declaration and power of attorney, assignment and a filing fee. When received in the U.S. Patent Office, the application package is assigned to an examiner who is a specialist in the field relevant to the invention. The examiner searches to determine whether the application discloses new and patentable subject matter, and judges the allowability of each patentable claim made by the applicant.

Although the makeup of the patent application itself varies considerably, here's what a typical application may include:

- ◆ A title;
- ◆ Drawings of the invention, when feasible;
- ◆ Name(s) of the inventor(s);
- ◆ A brief statement regarding the field to which the invention relates;
- ◆ An explanation of the problem;
- ◆ The object of the invention;
- ◆ How the invention solves the problem;
- ◆ Descriptions of drawings, if any;
- ◆ Detailed description of the invention;
- ◆ Example of results;
- ◆ One or more claims defining the invention in legal terminology; and
- ◆ A list of references cited by the U.S. Patent Office during the pendency of the application.

COPYRIGHTS

The University is increasingly involved in diverse media that generate and draw upon a variety of materials that are copyrightable. Readers are referred to the current edition of the Faculty Handbook and to the Technology Transfer office for advice.

Increasingly copyright protection is sought for video and audio recordings, films or other visual aids, musical compositions, printed materials, web-based documentation, etc. Software once protectable only by copyright may, in certain circumstances, be subject to patent protection.

THE PROCESS AT FLORIDA STATE UNIVERSITY

The documentation and evaluation of inventions, processing of patents, the administration, marketing and licensing of technology involves substantial time and expense and requires specialized talents and expertise. It is important for the University's researchers to work closely with the Technology Transfer office during the technology transfer process. In most instances the University expects to enlist the services of outside patent firms in the preparation and filing of patent applications and to aggressively market the technologies to the business sector. Staff and faculty are asked to cooperate with the Technology Transfer office and work with these outside persons and organizations.

PROCEDURES FOR DISCLOSING AN INVENTION

The University offers a short Invention Disclosure Form that, when completed, will serve as a complete and full description of the invention to the University. Its information will aid in searching patents and the open literature in an effort to determine novelty. The completed disclosure also provides key information concerning potential applications of the technology (its utility). The disclosure and any relevant prior art discovered during the search process will then be used to assess the technology and determine patentability. In some instances a patent attorney will be engaged on behalf of the University to provide a detailed opinion on the patentability question.

It is not unusual for a researcher to be unsure that a particular discovery is patentable or even worth the time and effort of disclosure. The staff at the Technology Transfer office are available to answer questions and can assist in the preparation of the disclosure documentation, so as not to burden the researcher. A copy of the Invention Disclosure Form can be obtained through the Technology Transfer office or at <http://www.research.fsu.edu/inventdisclose.html>.

EXECUTIVE SUMMARIES

Shortly after the completed disclosure form is received, a technology manager in the Technology Transfer office will be assigned the invention and will draft a 1-2 page Executive Summary of the invention and send it to the inventor for review. The summary will describe the invention in general terms—excluding enabling information and technical descriptions if a publication has not yet been made. Inventors then edit and return the summary to the manager. This summary will then be sent to a number of targeted companies, which have expressed interest in licensing similar types of technology. To protect the proprietary information, companies are required to sign non-disclosure (confidentiality) agreements.

Preparation of a provisional patent application

Since June 8, 1995, the U.S. Patent and Trademark Office has offered the option of filing a provisional application for a patent. This provides the means to establish an early effective filing date for a later full patent application. If, within one year of filing, research results and business evaluation justify the cost of a full patent application, such application may claim the earlier effective filing date.

PREPARATION OF THE PATENT APPLICATION

Based on the novelty of the invention, results of the patent and literature search and the overall merit of the invention, the University will decide whether to proceed with the preparation of a U.S. Patent Application. If the University elects to proceed with the filing of an application, the inventor will be notified and a draft application will be prepared by patent counsel. If the University elects not to proceed with an application, the University will transfer the rights to the inventor, or if applicable, the research contractor.

MARKETING AND LICENSING

The Florida State University manages all aspects of the technology licensing process through the Technology Transfer office that may contract with outside marketing, licensing and patenting firms, organizations and consultants to provide specific services and expertise. Any royalties or other proceeds resulting from the license, sale, distribution, etc. of inventions and discoveries will be handled in accordance with the University's Patent Policy. See the Faculty Handbook for more information on the patent policy.

A company (licensee) may be interested in funding additional research and development in the inventor's laboratory. It is common for there to be a designated time frame for the "technology transfer" to occur within and during which time additional research is warranted. At the option of the researcher, a research funding clause may be a negotiated term of a license agreement.

FLORIDA STATE UNIVERSITY RESEARCH FOUNDATION

The Florida State University Research Foundation (FSURF) was formed in September 1993 to promote, encourage and assist in the research and educational activities at FSU via various support mechanisms using income generated from research and technology transfer initiatives. FSURF provides a mechanism to facilitate technology transfer to benefit the public and further support the activities of FSURF and FSU. In assessing the mission and goal statements, a view of the broad activities of FSURF can be broken down into three main components to benefit FSU:

- ◆ Promote, encourage and assist in research and development;
- ◆ Facilitate technology transfer, economic development and public benefit; and
- ◆ Develop infrastructure to support these activities.

TECHNOLOGY TRANSFER PROGRAMS & SERVICES

The Florida State University Technology Transfer office was established in 1996 to facilitate the transfer of FSU innovations. The office provides the mechanisms to identify, document, protect, assess, market and license a wide spectrum of University technologies and innovations. The office defines "technology transfer" as the transfer of technology, innovations and knowledge to the commercial, academic and public arenas. The office has developed the following mission and goals:

MISSION STATEMENT

"Encourage and assist technology development at FSU and facilitate the transfer of intellectual property to business and industry to provide benefits to the university, the economy and to improve the overall quality of life."

GOALS

In support of its mission, Technology Transfer established a set of four core goals:

1. Encourage and assist faculty members, staff and students to consider alternate applications of technology developed as part of their research;
2. Develop an effective and efficient technology transfer program, which can assess, document and communicate the full value of technology transfer activities to the public;
3. Increase R&D income to FSU, from public and private sources, by utilizing various technology licensing and research funding strategies; and
4. Enhance economic development in the region and State by building strong ties between the public and private sectors.

Technology Transfer works closely with inventors, FSU administration and FSURF to assure timely and effective transfer of technologies to the private sector. It has established a set of programs and services to facilitate technology transfer, to recognize and reward inventiveness and to encourage research and technology development activities at FSU.

GLOSSARY OF KEY TERMS

Abandonment—the actual or implied giving up of an application or invention by some positive act or by failure to act within a reasonable or statutorily fixed time

Amendment—an answer to an office action by a U.S. Patent Examiner, usually modifying, correcting, striking, or adding claims or correcting drawings in an attempt to overcome objections to allowance of the application

Anticipation—an invention lacks patentable novelty if it has been anticipated, exists as prior knowledge or has been established by publication or use prior to the claimed date of invention

Application—the complete application package to the U.S. Patent & Trademark Office includes an oath, specification, claims and drawings

Art or Prior Art—a term used to establish novelty, encompassing what is known prior to the filing date of the application, as represented by already issued patents and publications

Assignee—one who receives rights in a patent from another by the signing over or assignment of a right

Assignor—one who can assign rights to a patent

Basic or Pioneer Patent—a broad patent, first in its subject area

Broad Claim—a statement in a patent application covering extensive variations of the invention, including a range of alternatives by implication without using an alternate form of presentation

Claim—numbered paragraphs in the patent application specifically stating what the inventor alleges for the invention; claims establish the essence and scope of a patent

Conception—the initial step of invention and the basis of the patent

Contributory Infringement—aid to another in infringing on a patent

Date of Application—the date upon which the application package is received by the U.S. Patent & Trademark Office

Date of Patent—the date of printing of notice of the patent grant in the Official Gazette of the patent office

Dedication—making use of the invention open to the public by making a direct statement to that effect

Diligence—continuous effort by the inventor to complete and perfect an invention; this can be used to push back the date of invention to the date of conception or whenever such continued effort began; it is also used to determine abandonment

Discovery—any inventive idea which relates to new processes; methods of producing a new result; any produced article, composition of matter or chemical compounds; any new plant; new designs in connection with production or manufacture of an article; and any improvement over existing systems or processes

Disclosure—a statement indicating the character of an invention, its construction, operation and application; full disclosure includes data sufficient to allow a skilled person to practice the invention

Examination—the study of a patent application by the U.S. Patent & Trademark Office to determine patentability

Examiner—the U.S. Patent & Trademark Office official whose responsibility is to pass judgment on the patent application

Exclusive License—an agreement granting one party the exclusive rights under an issued patent; the licensor cannot grant a license to another party

Infringement—commercially using an invention protected by a valid patent without license or consent of the patent owner

Inoperativeness—the failing of an invention to work due to imperfections or due to incomplete or erroneous description of the invention in the disclosure

Interferences—a proceeding for the purpose of determining which of two or more applications for the same invention is the legally recognized inventor

Joint Inventor—one of two or more who make joint inventive contributions to an invention

License—an agreement allowing another party to commercially use an invention, without which the party would commit infringement

Life of a Patent—Seventeen years from date of patent in the U.S.; the life of a design patent varies according to the amount of fees paid

Non-Exclusive License—a permit for use by a licensee in which the licensor reserves the right to make a similar grant to others

Oath—a sworn statement accompanying the patent application attesting that the applicant has made the described invention

Preliminary Search—an examination of existing publications and patents to determine patentability

Publication—any disclosure in a form distributed to or accessible to the public that is enabling

Reduction to Practice—completion and actual operation of an invention, usually including testing, not required for patentability

Rejection—the Examiner's decision that an application is not patentable and specific reasons for failure

Royalty—payment for use of an invention

Search—a study of all information available in the field to determine if any prior discovery makes the invention incapable of being patented, or if patentable, whether or not it infringes on a prior patent

Unpatentable—an invention not meeting the criteria and definitions required for a new patent or involving sufficient departure from prior art

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