

- **Intellectual Property Overview**
- **Reporting of Inventions**

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**Intellectual Property (IP) represents the primary basis of wealth in modern national economies.**

**Yet, many organizations still pay little attention to the importance of IP creation and ownership.**

- **Patents have been enforced successfully since 1982 following the inception of the Court of Appeals for the Federal Circuit.**
- **More software-related patents are filed.**
- **Significant amendments to patent law became effective in 2011.**

***- FIRST TO FILE.***

# What is IP?

- **Intellectual Property:** A generic term used to refer to legal rights in ideas, software, inventions, written works, and other results of intellectual effort.
  - **Patent:** The *right to prevent* others from making, using, selling, or importing the patented invention into the U.S. for a period of 20 years from the date of filing.

The U.S. is a first-to-invent country.
  - **Copyright:** The right to prevent others from copying, deriving, publishing, distributing a written, audio, or audio visual work.

Duration = life of the author + 50, or 75-120 years for Cos.

## What is IP? (cont)

- **Trade Secret:** The right to prevent others from using *improper means* to learn confidential information that a company uses in its business to gain a competitive advantage for an indefinite period of time. Can last for a long duration, dependent on measures of secrecy.
- **Trademark:** The right to prevent others from using a name for their product if it would be confusing with one being used already in the marketplace. Can last a long duration, dependent on policing /QC.

# Interests Protected

- **Patent:** new, useful, non-obvious ideas.
- **Copyright:** Original forms of expression (but not ideas)
- **Trade Secret:** Secret ideas in commercial use, but not exclusive against others who come by it through legitimate means
- **Trademark:** Distinct identity for a commercial source/orion of goods or services

# A Patent Defined

- **“Patent” is granted by the U.S. Government (sovereign) to the owner of an invention with rights to exclude others from making, using, or selling the invention for a limited time.**
- **Quid Pro Quo: Disclosure of Invention to public in exchange for limited term monopoly.**
  - **Disclose enough detail to allow others skilled in the art to make and use the invention after limited term monopoly.**
  - **Catalyze other inventors to learn from and build upon the invention.**

# Elements Of A Patent

- **Term of patent protection is 20 years from date of filing (formerly 17 years from date of issue).**
- **A patent application descriptive of the invention must be filed to protect invention.**
- **The patent application must be filed within one year of date of first publication, public use, sale or offer to sell; otherwise, patent rights may be forfeited.**
- **A granted patent is presumed valid once issued; however, subject to third party challenges now.**

# Some Important Aspects Of A Patent

- **Detailed *Description* of the Invention:**
  - **Must describe invention in sufficient detail for one skilled in the art to make and use.**
  - **Must disclose best mode known at the time of filing.**
  - **Different audiences read the description (e.g., examiners, attorneys, engineers, business people, judges, juries).**



# Requirements to Obtain a Patent

## 35 U.S.C. 101 - Patentable Subject Matter

### – A person may obtain a patent for:

- any new and useful *process*, machine, manufacture, or composition of matter, or any new and useful *improvement* thereof

## 35 U.S.C. 102 - *Novelty*

### – A person shall be entitled to a patent unless:

- (a) the invention was known or used by others in the U.S., or patented or described in a printed publication in the U.S. or a foreign country, before the invention thereof by the applicant for patent, or
- (b) the invention was patented or described in a printed publication in the U.S. or a foreign country or in public use or on sale in the U.S., more than one year prior to the date of the application for patent in the U.S., or
- (c) the invention was abandoned by applicant, or
- (d) the invention was first patented . . ., by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in the U.S. on an application for patent or inventor's certificate filed more than one year before the filing of the U.S. application, or

# Requirements to Obtain a Patent

## 35 U.S.C. 102 - **Novelty** (continued)

### – **A person shall be entitled to a patent unless:**

- (f) the applicant did not invent the subject matter sought to be patented, or
- (g) (1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it.

(Prior inventor must show diligence.)

# Minimize Offers to Sell

- **Engineering prototype parts or beta software should be characterized as “samples” that are “experimental” or “not production ready.”**
- **No offers to sell should be made until a patent application has been filed or, at a minimum, until an invention disclosure has been submitted.**

## 35 U.S.C. 103 - *Non-obviousness*

### – **A person shall be entitled to a patent unless:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

# Advantages of Patents v. other IP schemes

- **Right to exclude others**
- **Only patents can protect business methods or open-source software that will become publicly known and thus, are recommended over trade secrets.**
- **Patents can be licensed for fees and/or royalties.**
- **Patent applications and patents can be used as marketing tools (implies unique source).**
- **Can be used to defend against and offset patents of others.**
  - **cross-licensing**

# Comparison of Forms of IP Protection

PATENT	TRADE SECRET	COPYRIGHT
20 year term from date of filing	indefinite term	Life of author + 50 years;  For companies, 95 years from the year of its first publication, or a term of 120 years from the year of its creation, whichever expires first
right to exclude others from making, using, selling, or importing	no right to exclude others (reverse engineering or other legitimate means okay)	right to exclude others from copying, making derivative works, distributing, or publishing
patentable ideas (statutory subject matter, useful, new, nonobvious)	information (formulas, patterns, devices, programs, methods, or compilations) – must remain secret	copyrightable expressions (not for ideas)
\$500/1000 filing fee, \$1000/2000 issue fee, maintenance fees at 3.5, 7.5 and 11.5 yrs.	no fees (can use Proprietary Information Exchange Agreement)	\$30 registration fee, but registration not necessary except for litigation

# Incorporating Defensive and Offensive Strategies

- **Larger companies/organizations tend to institute a defense strategy to minimize infringement risks.**
  - Freedom to market
  - Infringement avoidance
- **Smaller companies tend to institute an offensive strategy to maximize impact**
  - Block competitors from market space
  - Generate income.
- **An effective strategy incorporates both.**



# Defensive Strategy

## Freedom to Market/Use

- **Actively review new products early for patentable subject matter based on business strategy and product lines (as opposed to arbitrary technologies).**
- **Obtain patents to ensure the right to use the invention in countries of interest.**
- **Patent improvements and alternatives to deprive competitors of a potential blocking position.**
- **Build portfolios of related patents:**
  - **To deter aggressive behavior by competitors.**
  - **As trading stock to cross license or settle suits.**

## Infringement

- **Detection**
  - Review sales and marketing activities.
  - Review literature, papers and trade shows materials.
  - Conduct Competitive analysis.
- **Confirmation**
  - Teardown of a suspected device.
  - Admissions in literature, patents, statements, etc.
- **Enforcement**
  - Notification (e.g., “cease and desist” or “business interest” letter).
  - Negotiate license or assignment.
  - File infringement law suit in federal court.

# Offensive Strategy

## Considerations of Enforcement

- High cost (e.g., \$1M to get to trial), time consuming, and risk of counterclaims.
- Failure to follow through after notice to infringer may lead to laches.
- Burden is on patent owner to prove infringement (either literally or by equivalents (function, way, result) or by induced or contributory infringement).
- Favorable outcome to patent owner results in injunction and/or damages. Damages are trebled if willful infringement is found.
- High potential recovery (lost profits or royalty).
- 3<sup>rd</sup> party challenges in USPTO can invalidate/narrow patent.

***Enforce to achieve mission/business objectives***

# Licensing

## Reasons to license

- **Generate a new revenue stream; and added financial return on R&D expenditures.**
- **Increase competitors' cost burden.**
- **Provide a valuation tool/metric when seeking financing.**
- **Penetrate new markets/geography.**
- **Create relationships (e.g., joint ventures).**
- **Avoid litigation or to gains product clearance through *cross-licenses*.**
- **Obtain rights to complementary products.**
- **Access new resources (e.g., manufacturing, marketing, distribution, expertise).**

## Competitive

- Encourage Competition on the Owner's Terms
- Encourage Complementary Products to Build Market Share
- Delay but not Deny Market Entry
- Picket Fencing
- Patent Flooding
- Preserve Adjacent Markets
- Preserve After Markets

## Non Competitive

- Corporate Image: Patents are Strong Evidence of Innovation
- Promotion: "Patented" Implies a Unique Source
- Contract Reinforcement
- Emerging Market Penetration
- Non-Cash Consideration in Joint Ventures & Alliances
- Identifiable Asset in Divestitures
- Support Financial Objectives: e.g., Liquidity, Tax Planning

## FRA CLAUSE I.92 - DEAR 970.5227-3

**The Contractor (*FRA*) shall conduct technology transfer activities with a purpose of providing benefit from Federal research to U.S. industrial competitiveness.**

### Authority:

**Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a); Section 3132(b) of Pub. L. 101-189, Sections 3134 and 3160 of Pub. L. 103-160, and of Chapter 38 of the Patent Laws (35 U.S.C. 200 et seq.); Section 152 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2182); Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908); and Executive Order 12591 of April 10, 1987.**

## **FRA is authorized to conduct activities including:**

- **Identifying and protecting Intellectual Property made, created or acquired at or by the Laboratory;**
- **Negotiateing licensing agreements and assignments for Intellectual Property made, created or acquired at or by the Laboratory that the Contractor controls or owns; and**
- **Entering into . . . CRADAs, User Facilities, WFO, Science education, consulting, personnel exchanges.**

**FRA must report “Subject Inventions” to DOE.**

***Subject Invention* - any invention of the contractor conceived or first actually reduced to practice in the performance of work under the contract.**



**Material that must be reported include:**

- **Subject Invention Disclosures**
  - **Initially Provided by inventor(s) in written format (e.g., Invention Disclosure Form).**
  - **FRA provides written report to DOE w/in two months of invention disclosure.**
- **Election of title can be requested by FRA.**
- **Patent Application filings.**
- **Publication Approvals.**
- **Utilization (e.g., licenses).**

# FRA Patent Rights

- Except for “exceptional circumstance subject inventions,” the contractor may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203.
- With respect to any subject invention in which the Contractor retains title, the Federal government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

## **“Exceptional circumstance subject inventions”:**

- **uranium enrichment technology;**
- **storage and disposal of civilian high-level nuclear waste and spent fuel technology;**
- **national security technologies classified or sensitive under Section 148 of the Atomic Energy Act (42 U.S.C. 2168); and**
- **inventions made under any agreement, contract or subcontract related to**
  - **(A) DOE Steel Initiative and Metals Initiative;**
  - **(B) U.S. Advanced Battery Consortium; and**
  - **(C) any funding agreement which is funded in part by the Electric Power Research Institute (EPRI) or the Gas Research Institute (GRI).**

# Reversion of URA Patent Rights to DOE

**URA will convey to the DOE, upon written request, title to any subject invention:**

- **it fails to disclose (60 days from invention disclosure) or elect title to the subject invention within 2 year of disclosure or 60 days prior to statutory bar, or URA elects not to retain title.**
- **In those countries in which the Contractor fails to file a patent application.**
- **In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.**
- **If the Contractor requests that DOE acquire title or rights from the Contractor in a subject invention to which the Contractor had initially retained title or rights .**

# Processing a FRA Invention

- **Record inventions in an Inventor's notebook.**
- **Complete Invention Disclosure and/or Record of Invention and provide it to FRA IP/Tech Transfer.**

**Title**

**Inventor Identification (Joint Inventors, Name Order, contribution by Each),**

**Summary of Invention**

**Salient Features**

**Identify Commercial/Government Uses**

**Identify Statutory Bars (e.g., if, when, how invention was publicized)**

**Identify known and relevant "prior art"**

**Invention Dates: Conception and Reduction to Practice -- Actual, Constructive**

**Identify Private Testing, Use, Witnesses, Experimental Use**

# EVALUATION OF INVENTION DISCLOSURE

- **Initial evaluation by FRA IP/Tech Transfer.**
- **Reported to DOE.**
- **Reviewed by FRA/DOE for:**
  - **Novelty, Usefulness, Practicality.**
  - **Potential commercial Interest.**
  - **Defensive Value.**
  - **Determination of Rights.**
- **Elections of title/Pass/Publication.**

# Competitive Patent Monitoring and Research

- PCT and foreign publications, and now published U.S. patent applications, provide an insight to the future and trends of technology.
- Publications can be monitored using keywords, assignee names, technology, inventor names, etc.
- Some fee-based services offer “automatic” patent watches, e.g., Lexis, Delphion, Derwent, etc.

**FREE:** <http://www.uspto.gov>

# Competitive Patent Monitoring

## Using the results

- Enables evaluation gaps.
- Enables filing of new or continuation applications to fill gaps.
- Continuation patent applications can be filed to cover technologies discovered in the patent applications of others.
- Enables filing of technical opposition patents when appropriate (e.g., may not be appropriate if licensing is viable option).

***\*\* Personnel must ensure that potentially damaging written records are not unnecessarily generated as a result of conducting patent research.***

***(E.g., do not create records that conclude “we infringe.”)***



## **Organizations should take reasonable measures to protect proprietary information:**

- Establish written trade secret policy.**
- Require employees, contractors, suppliers, and others to sign confidentiality agreements.**
- Ensure confidential information is returned.**
- Avoid licensing source code or providing access to source code.**
- Avoid placing source code in escrow.**
- Establish adequate confidentiality provisions in all agreements.**
- Secure confidential information in locked area.**

# Structuring IP Policies and an IP Portfolio

## Essentials:

- **Encourage/Solicit invention disclosures.**
- **Foster an environment that encourages invention disclosure (e.g., allocate time for engineers to prepare disclosures and research the competition).**
- **A larger selection of disclosures can result in a more effective and valuable portfolio.**
- **Timely file patent applications.**
- **Set goals to patent most important areas.**
- **Adopt formal trade secrets policy and employ reasonable measures to protect trade secrets.**
- **Secure ownership of IP (e.g., required assignments by contractors and suppliers).**

***Integrate IP strategy into the organizational culture***

## What can I do?

- **Self Audit: Assess your prior and current contributions and activities.**
- **Obtain a copy of an Invention Disclosure Form. Familiarize yourself with it.**
- **Keep a inventors notebook.**
- **Set personal invention disclosure goals.**
- **Employ personal measures of protecting proprietary (e.g, trade secret) information from premature public disclosure.**
- **Support URA' s IP and T2 programs.**

***Develop a personal IP strategy***

**Thank You!**

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