ISBN 978-92-64-05412-7
OECD Patent Statistics Manual

Chapter 3

Patent Systems and Procedures

3.1. Introduction

To obtain a patent for an invention, the individual or institution which owns the invention (an enterprise, or a public or private institution such as a university or a government body) has to file an application at the patent office. An applicant who wants to have patent protection in multiple countries can file for a patent in each country separately, file a patent application at a regional office, or file a patent application at the international patent office and request entry into the national stage in each country in which patent protection is sought.

The application and the processing of patents follow strict administrative and legal rules and procedures, set out in international treaties and national statutes (law and regulation). These procedures and rules have a direct impact on the value and the meaning of patent data. It is necessary to take them into account when interpreting patent statistics. This is all the more important as these rules are not fully harmonised across countries and have changed over time, and minor variations in the procedure can have drastic effects on the resulting numbers.

This chapter presents a summary of patenting procedures at the most important patent offices and patenting routes: the European Patent Office (EPO), the Japan Patent Office (JPO), the United States Patent and Trademark Office (USPTO) and the Patent Cooperation Treaty (PCT). It starts with the standard rules common to all patent offices and it then examines national and regional variations. Finally, it looks at the procedures for international applications.

The procedure for granting patents, the requirements placed on the patentee and sometimes the extent of exclusive rights vary widely among countries according to national laws and international agreements. As will become apparent, all patent applications, whether international or regional, should ultimately have a national status, as they need to be validated by national patent offices. In consequence, national specificities, concerning both the patenting process and post-grant activity (*e.g.* maintenance, enforcement and invalidation procedures) determine how patents function in economic life. These aspects need to be taken into account when choosing particular patent data and computing and interpreting patent indicators.

3.2. The core patenting procedure

The procedure for obtaining a patent involves several steps which are similar in all countries:

- *First*, the entity seeking patent protection (usually a company, but also an individual, university or governmental body) must file a patent application at a patent office. In the application, the applicant must disclose the invention in sufficient detail for the average skilled person to be able to understand and make use of it. The most important part of the application is the section on claims, the list of aspects of the invention for which the applicant is claiming exclusive rights. The applicant must pay certain administrative fees, which vary widely across patent offices.[1]
- *Second*, the patent office appoints an examiner (or a group of examiners, with one leader) to take charge of the application. The examiner is assumed to be an expert in the particular technical field. Usually the examiner first performs a novelty search; this involves checking the prior art documents deemed relevant to the particular invention. These documents include the precedents in the scientific and technical literature relevant to the invention (or part of it) and constitute the prior art against which the novelty of the invention will be measured. In general, only documents that were published before the date of filing of the application (or day of filing of the priority application, if there is one) are to be considered in the search. The patent application document, along with the search report, is made public 18 months after the filing date (with an exception for certain applications to the USPTO).[2]
- *Third*, the examiner (usually but not necessarily the same as in step two) studies the patent application in order to decide whether the invention is "non-obvious" and involves an "inventive step" relative to the prior art identified in the earlier search. The applicant has the right to submit a written opinion (to discuss the examiner's findings and interpretation of the literature found), and to modify the scope of the claims defined in the application if necessary. The grant means that no reasons for refusal are found as all the criteria for patentability are met: patentable *subject matter*, *novelty, inventive step (non-obviousness to a person skilled in the art) and industrial applicability* (see Box 3.1).
- *Fourth*, when granted, a patent can be maintained for a maximum duration of 20 years from the filing date.[3] The patent holder is required to pay renewal fees to the patent office to maintain the patent (these are annual in most countries). The patent office will revoke patents that are not renewed. A patent can be challenged, usually by competitors who consider the patent invalid and should not have been granted because the patent office did not detect a significant weakness in the patent filing or did not correctly implement the statute. A patent can be challenged in the patent office itself in certain

Box 3.1. **Patentability criteria**

- **Subject matter:** To be patentable, an invention must concern certain fields of knowledge, which one may characterise approximately as being "technological". The law is more specific and varies somewhat across jurisdictions. Aesthetic creations, laws of nature and abstract ideas are excluded in all jurisdictions. Software is patentable in the United States, as are business methods. The practice in these two fields is more restrictive in Japan and even more in Europe (which excludes "software as such").
- **Novelty:** To be patentable, an invention must be novel in the absolute sense. That means it was not available to the public in any way before the filing date of the patent, and had not been described in any publication before that date. Novelty is a universal concept: an invention is deemed not to be new in one country if similar prior art is found in another country, in any language, at any period of time.
- **Non-obviousness/Inventive step:** Even if an invention is found to be novel in the strict sense, it may still not be patentable when the novelty is considered obvious to a person with ordinary skill in the art. The term *obvious* is a legal term of art and is used in different senses from country to country. In order to be patented, the inventive step and non-obviousness must reflect the same general patentability requirement that is part of most patent laws, according to which an invention should be sufficiently inventive, *i.e.* non-obvious. The expression "inventive step" is predominantly used in Germany, in the United Kingdom and under the European Patent Convention (EPC), while the expression "non-obviousness" is predominantly used in United States patent law. In the United States, it is argued that something is obvious if the differences between the subject matter 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 skills in the art to which said subject matter pertains. In Europe, patent application involves an inventive step if it solves a technical problem in a non-obvious way.
- **Industrial applicability:** This requirement mainly aims to distinguish between aesthetic and scientific inventions. The term "industry" is interpreted in a broad sense; it includes agriculture, for example. It excludes methods of treatment of the human or animal body by surgery or therapy and diagnostic methods practised on the human or animal body. The so-called perpetual motion machines also fail to meet this requirement. In the United States, this requirement is referred as "utility"; however, the interpretation and scope of this term is generally the same as that of industrial application. International patent treaties often use "utility" and "industrial applicability" synonymously.

jurisdictions (*e.g.* opposition at the EPO; re-examination at the USPTO (through boards of appeal); invalidation procedure trials at the JPO), and in courts. Courts have the last say in the enforcement of the patent statute.

Patents filed at a national (or regional) office provide protection only within that jurisdiction. For example, a patent granted by the USPTO will only provide patent rights within the United States. If the inventor (applicant) wishes to protect the same invention in Japan, then a separate patent application has to be filed at the JPO, either directly or via the PCT at the World Intellectual Property Organization (WIPO). Filing at WIPO does not prevent the applicant from filing at national offices.

The decision to apply for patent protection in a country (or countries) depends first on the applicant's business strategy. In most cases, a patent application is filed at the national patent office of the inventor (applicant) in order to protect the invention in the domestic market and followed by foreign filings. However, it is not mandatory to file the first application at the applicant's national patent office. An applicant can file a patent application initially at any patent office in the world. In the United States, however, a foreign filing licence may be required before filing in a foreign country.

The country in which the first application is filed is referred to as the *priority country* and the date of first application is commonly referred to as the *priority date*. Patent applications filed at a patent office by residents of that country are referred to as *domestic applications* (for statistical purposes) and applications by non-residents are referred to as *foreign applications*.

3.2.1. International harmonisation of patent laws

Various international treaties have been established over the years in order to streamline the application process and make patenting procedures more efficient for inventors (or applicants) who target multiple countries. These application and examination procedures are governed by rules and regulations of the national (or regional) patent office and international treaties (such as the Paris Convention and the PCT) where applicable.

A considerable amount of harmonisation of patent rules across countries took place during the 1990s, notably through the creation of the Trade-related Aspects of Intellectual Property Rights (TRIPS) Agreement at the World Trade Organization (WTO) (see Box 3.2). The TRIPS Agreement is an international treaty administered by the WTO which sets out minimum standards for most forms of intellectual property regulation within all member countries of the WTO. It was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994. It incorporates and builds upon the latest versions of the primary international intellectual property agreements administered by the World Intellectual Property Organization

Box 3.2. **Main provisions of the TRIPs Agreement**

The objectives of the TRIPS are defined in Article 7: "The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations." Unlike other international agreements on intellectual property, TRIPS introduced a dispute settlement mechanism, which can authorise trade sanctions against non-compliant states. Specifically, TRIPS deals with harmonisation of copyright and related rights, such as rights of performers, producers of sound recordings and broadcasting organisations; geographical indications, including appellations of origin; industrial designs; integrated circuit layout designs; patents, including the protection of new varieties of plants; trademarks; trade dress; and undisclosed or confidential information, including trade secrets and test data. Articles 3 and 4 set out the two main principles of treatment for WTO members:

- ***National treatment (Art. 3):*** Each Member shall accord to the nationals of other Members treatment no less favourable than that it accords to its own nationals with regard to the protection of intellectual property, subject to the exceptions already provided in, respectively, the Paris Convention (1967), the Berne Convention (1971), the Rome Convention or the Treaty on Intellectual Property in Respect of Integrated Circuits.
- ***Most Favoured Nation Treatment (art. 4):*** With regard to the protection of intellectual property, any advantage, favour, privilege or immunity granted by a Member to the nationals of any other country shall be accorded immediately and unconditionally to the nationals of all other Members.

(WIPO), the Paris Convention for the Protection of Industrial Property, and the Berne Convention for the Protection of Literary and Artistic Works, agreements that date back to the 1880s. It applies basic international trade principles to member states regarding intellectual property, including national treatment and most favoured nation treatment. Major changes introduced by TRIPS include: the statutory duration of patents should be at least 20 years after application; patents should cover all fields of technology (including drugs, previously excluded in a number of countries); patents should be published 18 months after priority. Further negotiations have taken place in the 2000s at WIPO and among developed countries in order to further harmonise patent statutes and procedures across countries, but such harmonisation has proven difficult to achieve.

3.2.2. The costs of filing patents and duration of procedures

Filing a patent is a costly matter for the applicant. The cost of patenting can be broken down into four main categories associated with the granting process and the maintenance of protection:

- **Administrative fees**: filing fees, search, examination, country designation, grant/publication fees and validation fees (in Europe).
- **Process costs**: costs associated with the drafting of the application and with the monitoring of the procedure (interaction with examiners and the patent office) on the applicant's side. These costs can be incurred in-house (corporate IP department) or externalised (private patent attorneys).
- **Translation costs** in the case of applications abroad. Such costs mainly arise once a patent is granted, and depends on the page length of the patent. The more countries covered, the higher the translation costs.
- **Maintenance costs** are renewal fees to keep the patent valid during a maximum period of 20 years, plus possible fees to be paid to the patent agents serving as intermediaries between the patent holder and the patent office.[4] Renewal fees vary significantly across countries.

There are also the costs of enforcement, *i.e.* of defending patent rights by identifying and fighting infringement (*e.g.* through lawsuits) or invalidation or opposition by other parties, etc. Calculating patent costs is a complex task, as several components are not easy to quantify and depend on the applicant's motivations for filing a patent. Several factors determine the total cost of a patent (*e.g.* the number of claims, the number of pages, the route, the quality of external services, the desired speed and the geographical scope for protection). Larger patents (*i.e.* with more claims and/or pages) and patents that are intended to be filed in a large number of EPC member states are more expensive in terms of both procedural and external costs. The cost is further linked to the duration of the procedure (especially when there is a great deal of written communication between the patent attorney and the patent office) as well as the desired speed of the granting process. In view of the high variability of costs across technical fields and countries, it is difficult to give meaningful average figures on the cost of filing patents. In addition, such costs should be related to the size of the market covered (*i.e.* the potential market for which exclusivity is sought for the invention).

A survey of patent applicants conducted in 2004 investigated the cost of patents (EPO/Roland Berger, 2005). The cost of obtaining a standard Euro-direct patent (direct filing to the EPO or extension of an earlier national patent application) in 2003 was estimated at EUR 30 530 (EPO and Roland Berger Market Research) while the (estimated) costs of a Euro-PCT (filing through PCT at the WIPO, designating the EPO) averaged around EUR 46 700.[5] The difference with

Euro-direct patent applications arises mainly from higher translation costs, due to a larger number of pages (description and claims), supplementary official fees related to the international phase, and validation in a larger number of countries (eight instead of six). A company from a European country (EPO member state) will pay on average EUR 24 100 to have a Euro-direct patent granted and validated; a US company will pay EUR 10 250 to receive a USPTO grant; a Japanese company will pay EUR 5 460 to acquire a JPO grant. The higher cost in Europe is basically due to translation costs at the processing and validation stages. Although they vary across patent offices, official fees play a minor role in the total difference: applicants' reported figures are EUR 3 470 at the EPO, EUR 2 050 at the USPTO and EUR 1 570 at the JPO.

The duration of the procedures is also highly variable across patent offices and has changed over time. From 2005 to 2006, the average pendency time for examination (time between filing and a grant) at the EPO increased by 8% to about 44 months. In the JPO, average pendency is stable at 31.8 months while at the USPTO the number of pending applications continues to increase. From 2005 to 2006, pendency at the USPTO rose slightly from 30.6 months to 31.3 months (*Trilateral Statistical Report*, 2006). The increase in pendency raises particular statistical issues. For instance the yearly statistics of applications and grants are increasingly disconnected; procedural statistics (rates of grant, of refusal, of withdrawal) are distorted over time and time trends are difficult to interpret.

All stages of the patenting procedure generate large amounts of information about the invention for which protection is sought. Information regarding the procedural stage of patent applications provides insight on the applicant's strategy but also generates statistical difficulties:

- First, no statistics are available until 18 months after the priority date, since the application is not published until then.[6] This creates an obstacle for analysts as it limits the legally possible timeliness of patent data.
- The search report includes valuable information, such as the references to prior art (patent and non-patent references), which can be viewed as the precedents to the invention covered by the patent.
- The list of countries in which the application is filed, or the international route it takes (PCT), is an indication of the applicant's market strategy (local, regional or worldwide). It is also indicative of the invention's value, as one would expect the expected revenue from the patented invention to exceed the prospective cost of patenting in the first place.
- The length of the patenting procedure (the time it takes for the patent office to reach a decision) is indicative both of the strategy of the applicant (who can seek a quick grant or aim to lengthen the procedure) and the efficiency of the patent office (ability to manage its workload). The fact that an application is granted or refused is indicative of its quality.

3.3. National and regional procedures

All patent offices have their particular statute, and there are variations from the "core" presented above. Differences can be in "substantive patent law" (what is patentable or not, etc.) or in the procedures, although the distinction between the two is not always clear. The most specific procedures are to be found at the EPO, as it is not a national but a regional/international patent office. Table 3.1 summarises some of the major differences in the rules

Table 3.1. **Differences between the three main patent offices**

	EPO	JPO	USPTO
Patent grants are based on	First to file	First to file	First to invent
Patent duration	20 years	20 years	20 years
Application language	English, French or German[a]	Japanese[b]	English[c]
Area covered	EPC member and "extension" countries[d]	Japan	United States
Request for examination	Yes, within 6 months	Yes, within 3 years[e]	No
Publication of application	18 months from the priority date	18 months from the priority date	18 months from the priority date[f]
Are there some subject matters excluded from patentability or not considered to be inventions?	Yes[g]	Yes[h]	Yes[i]
Opposition system	Yes[j]	No	No[k]

a) An application can be submitted in any official language of any EPC member state. However, within three months of filing the application, but no more than 13 months after the earliest priority date, a translation of the application into one of the official EPO languages (English, French or German) is required.

b) It is possible to file a patent request in Japanese and the specification, claims, drawings and abstract in English. A Japanese translation of the English documents must be filed within 14 months of the initial filing date.

c) Possible to file in any language other than English provided that English translation is submitted within two months.

d) A European patent does not automatically provide protection in all EPC member countries (or the extension countries). The applicant has to validate the EPO patent separately, once it has been granted, at the respective national patent offices for the patent to be effective in those countries.

e) Request for examination period: three years for patents filed since October 2001 and seven years for those filed before October 2001.

f) An application that has not and will not be the subject of an application filed in foreign countries does not need to be published if an applicant so requests.

g) Subject matters not considered to be inventions are: discoveries, scientific theories and mathematical methods; aesthetic creations; schemes, rules and methods for performing mental acts, playing games or doing business, and programmes for computers; and presentations of information. Subject matter excluded from patentability: plant or animal; and methods for treatment of the human or animal body by surgery or therapy and diagnostic methods practiced on the human or animal body.

h) Subject matters not considered to be inventions are: discoveries; scientific theories and mathematical methods; mental activities; mere presentation of information; business methods; isolated parts of human beings; and diagnostic, therapeutic and surgical methods for the treatment of humans and animals.

i) Subject matters not considered to be inventions are: scientific theories and "abstract" mathematical methods; mental acts; presentation of information; and traditional knowledge.

j) Within nine months of the publication of the mention of the grant of the European patent, any person may give notice to the EPO of opposition to the European patent granted. Opposition can only be filed on the following grounds: the patent's subject matter is not patentable; the patent does not disclose the invention clearly and completely; or the patent's subject matter extends beyond the content of the application as filed.

k) Re-examination procedure; post-grant review of the validity of the claims of a patent in view of a prior art patent or printed publication believed to have a bearing on the patentability of any claim of the patent in question. The patent owner or any third party may request re-examination at any time after grant.

applied by the three major offices. Active negotiations at international level aim to remove such differences in the future.

The grant procedures are not identical across these patent offices. For instance, the examination at the EPO has two phases (search and substantive examination[7]) whereas in the national procedures before the JPO or the USPTO, the two phases are carried out together. After examination, the patent office informs the applicant of its decision (EPO: announcement of a grant; JPO: the decision to grant; USPTO: notice of allowance). If a patent cannot be granted in the form in which it was filed, the intention to reject the application is communicated (EPO: examination report; JPO: notification of reason for refusal; USPTO: office action of rejection). The applicant may then make amendments to the application, notably in the claims, after which examination is resumed. This procedural step lasts as long as the applicant continues to make appropriate amendments. Then, either the patent is granted or the application is finally rejected or withdrawn by the applicant. In all three patent offices, an applicant may withdraw or abandon the application at any time before the application is granted or finally rejected. The following section describes in more detail some of the differences between patent offices that need to be taken into account when computing patent statistics.

3.3.1. *USPTO*

In the United States, the Constitution empowers *Congress* to make laws to "promote the progress of science and useful arts…." The laws passed by Congress regarding the patent system were codified in *Title 35 of the United States Code* and created the *United States Patent and Trademark Office*.

The USPTO displays the following differences with the standard patent procedure and some characteristics unique to their patent system, such as:

- The United States grants a patent to the *first to invent* rather than the "first to file" (all other countries). This means that the first to file can see that right contested in front of the USPTO by another party claiming to have made the invention earlier although with no patent filing (a later patent filing).
- The United States has a so-called *grace period* for assessing novelty. Publications (*e.g.* academic journals) by the inventor during the grace period, which can range to up to one year before the filing, are not regarded when determining the novelty of the invention.
- The statutory duration of patents has been 20 years from application since 1995 (when the United States made the TRIPS part of its national laws), but it was 17 years after grant previously.[8] Renewal fees have to be paid 3.5, 7 and 11.5 years after grant (they are annual in most other countries).
- An application to the USPTO is automatically regarded as a request for examination (in most other countries, the applicant has a certain period

after reception of the search report before deciding whether to file an examination request or not; *e.g.* EP procedure). It means notably that applicants will have to proceed to examination even if they realise after the search that the novelty of their invention is not certain. However, a growing number of applications to the USPTO are taking the PCT route, for which this rule does not apply.

- Until recently, US patents were only published after grant. This has changed, and patent applications in the United States are now published 18 months after their filing date, unless they have been withdrawn or have been filed with a non-publication request (if the applicant declares that he will not file a related application in another country that quotes the priority of the USPTO first filing).
- When submitting a patent application, applicants (or inventors) are requested to supply a list of the state of the art. Contrary to the patenting procedure at the EPO, everyone involved in a US patent application has a "duty of candour", from the inventor to the patent attorney, to bring to the attention of the USPTO any prior art of which the inventor (or others involved in the filing of the patent application, such as the patent attorney) is aware or becomes aware and which might be relevant to patentability. This is a legal requirement and non-compliance by the patent applicant can lead to the subsequent revocation of the patent. This has led to an inflation of submitted prior art, to which the USPTO reacted in 2005 by encouraging applicants to limit the number of submitted references to 25. These institutional differences explain in part why the number of citations is notably higher in each USPTO patent than in patents from other offices (Table 3.1).
- Since 8 June 1995, the USPTO has offered inventors the option of filing a provisional application for patent which is designed to provide a lower-cost first patent filing in the United States. It is a patent application which does not mature into an issued patent unless the applicant takes further steps. A provisional application allows filing without a formal patent claim, or any information disclosure (prior art) statement. It provides the means to establish an early effective filing date in one or more continuing patent applications later claiming the priority date of an invention disclosed in earlier provisional applications by one or more of the same inventors.[9]
- Applicants have the possibility, after application, to make quite substantial amendments to their initial filing owing to the progress of their research or in reaction to examiners' requests. This procedural step is iterated as long as the applicant continues to make appropriate amendments; in consequence, the grant can be delayed. The continuation-in-part (CIP) type of application results from a second or subsequent application being filed, which includes new material protected, while the original application is pending.

- If an issued patent is found to be defective, the patent owner can surrender the patent and re-file the original application to correct the defect. One such defect is that the issued patent fails to claim the full scope of the invention. Inventors can re-submit the patent application with broader and/or new claims and attempt to get the full coverage they are entitled to. They are not, however, allowed to add new features to their invention. A re-issue application which attempts to get broader coverage than the original issued patent must be filed within two years from the grant date of said original issued patent.

3.3.2. JPO

The patent statute of Japan has been reformed several times since the late 1980s, bringing it closer in line with other countries' statutes. Major specificities with implications for statistics are as follows:

- The JPO grants patents under the *first-to-file* system, *i.e.* the principle according to which when two parties apply for a patent for the same invention, the first party to file will be granted the patent.
- Japan has also a *grace period*. Up to six months before the filing, if the invention has been published or presented at an academic body designated by the Commissioner or if it has been displayed at an exhibition held by a government or a body designated by the Commissioner, it is not regarded as having lost novelty.
- The JPO publishes the content of an application in the Official Gazette after 18 months have elapsed from the date of priority.[10] However, a request for examination has to be filed within three years of the application date to start the substantive examination process. In 2001, the time limit for the request for examination was reduced from seven to three years (three years for patents filed since October 2001 and seven years for patents filed before October 2001). If the applicant fails to file the request for examination within the time limit, the application is regarded as withdrawn.
- The length of time during which applicants can decide whether or not to request examination may be one reason for the large number of applications to the JPO compared with other jurisdictions, as inventors could take over eight years to make a decision. The rule change also explains the surge in the number of examinations requested (and grants) after 2004 due to a sort of "calendar effect". This high number can also be explained by the *one claim rule* which prevailed in Japan until 1975. The current unity of application is the same as the *unity of invention* in other jurisdictions (as defined in the PCT). This essentially permits groups of linked inventions to form a single inventive concept to be examined in a single application. In spite of these reforms, applications to the JPO still have a significantly lower number of claims than in other patent offices. An inventor might need to file several

applications at the JPO as compared to only one at other offices in order to obtain the same level of protection. However, since applicants try to secure broad and strong rights for their technology, the number of claims per application has risen since the late 1980s.

- At the JPO, renewal fees are due as a lump-sum fee for the first three years and each year from the fourth year of the date of grant. The requirement for applicants to disclose information on prior art in applications was introduced as of 1 September 2002 and entered full force on 1 May 2006. Patent examiners conduct the prior art search. There is no limitation on the number of references to be included.
- Patents granted by the JPO can be appealed by third parties. Even after a patent is registered, any person may appeal for invalidation of the patent if it has a flaw. This system was introduced in 2003 when the post-grant opposition system was abolished and the invalidation trial system was revised (effective from 1 January 2004). Under the new invalidation trial procedure: *i)* the trial may be demanded at any time; *ii)* both parties are involved in an *inter partes* procedure during the trial; and *iii)* the plaintiff may appeal a verdict upholding the patent in question to the Tokyo High Court.

3.3.3. EPO

The Convention on the Grant of European Patents, widely known as the European Patent Convention (EPC) was signed in 1973 and entered into force in 1977. As a result of the EPC, the European Patent Office (EPO)[11] was created to grant European patents based on a centralised examination procedure. By filing a single European patent application in one of the three official languages (English, French and German), it is possible to obtain patent rights in all EPC countries.[12]

- Patents granted by the EPO have the same legal rights and are subject to the same conditions as national patents (granted by the national patent office) in each EPC country for which the patents have been granted. Once granted by the EPO, a European patent is therefore a "bundle" of national patents, which must be validated at the national patent office of the designated states for it to be effective in EPC member countries.[13] Within three months of the grant of a European patent, the applicant has to complete various formalities. For example, the national patent office of a designated state might require the applicant to provide a translation in one of its official languages and pay for the publication fees of the patent.
- A European patent application can originate from: *i)* direct filing to the EPO without a priority claim (*i.e.* first filing), *ii)* extension of an earlier national patent application (within 12 months of first filing), or *iii)* from an international application filed using the PCT procedure. The first two categories are known as "Euro-direct" while the third is known as "Euro-PCT". Figure 3.1 illustrates

these different patenting routes involving the EPO. Since the early 2000s, patent applications to the EPO from national offices have significantly decreased as a share of total applications filed at the EPO. Indeed, the majority of the EPO patent applications originate from the PCT (Euro-PCT). In 2006, the share of all PCT applications entering the national-regional phase was 62% at the EPO (it was 46% at the USPTO and 45% at the JPO) (*Trilateral Statistical Report*, 2006).[14] The pattern is similar in terms of the share of PCT in total patents granted by trilateral patent offices: in 2006, 52% of patents granted by EPO were PCT applications, compared to 11% at the UPSPTO and 5.1% at the JPO (*ibid*.).

- This complex legal setting is a source of statistical difficulty, notably when counting "national patents" and "national applications" in European countries. Strictly speaking, all applications to the EPO since 2004 are also national applications, as the applicant has the right, in case of a grant, to obtain a patent in the country concerned. This also applies if the applicant has no intention of seeking protection in that country, as happens in a majority of cases for small European countries. Hence, the notion of a "national patent application" is blurred. This is not specific to European countries, however, as a similar principle of automatic designation is now in place at the PCT (see Section 3.4.2). As a result, to compile exhaustive statistics on national applications in a given country, it is necessary to use national, EPO and PCT data together. In addition, Europe patents valid in any country include not only those examined and granted by the national patent office, but also those granted by the EPO and validated nationally.

Other specificities of the EPO procedure include:

- Contrary to the USPTO, the submission of references to the prior art when filing an application is optional. Examiners are responsible for constructing the list of references to prior art (provided in the search report) against which patentability is judged. The European search report should include as references the most important documents or the earliest publication of equally important documents. According to EPO philosophy, a good search report contains all relevant information within a minimum number of citations.
- Once the European search report has been published, the applicant has six months to file a request for examination and pay the corresponding fees; otherwise the application is deemed to be withdrawn.
- An opposition to patents granted by the EPO can be filed by third parties within a period of nine months following the grant. This is an interesting source of statistical data. As opposition is a costly process, it is likely that patents that are opposed are those that create more difficulty (potential economic costs) for competitors, hence have higher value. The fact that a patent is opposed can therefore be seen as an indicator of high value (Harhoff and Reitzig, 2002).

3.4. International patent applications

3.4.1. *The priority principle*

The earliest international treaty on the protection of invention dates from 1883 (the Paris Convention for the Protection of Industrial Property), with 169 signatory countries as of January 2005. The Paris Convention established the system of *priority rights*, under which applicants have up to 12 months from first filing their patent application (usually in their own country) in which to make subsequent applications in other signatory countries and claim the priority date of the first application. Prior to the Paris Convention, foreign applications could be refused on the ground that the invention was no longer novel as it had been disclosed in an earlier (priority) application.[15]

The priority rights rule has important implications for the calculation of patent statistics, because in most countries there will be a time lag of 12 months between domestic and foreign application dates corresponding to a given invention. This is to say, that for a domestic application the "priority date" is equivalent to the "application date" and for foreign applications there is a 12-month lag between the "priority date" and the "application date". If the application date is used to reflect the time of the invention, it will introduce a bias in the timing of domestic and foreign inventions. The priority date will reflect the proper time period of the discovery of both domestic and foreign inventions. For this reason, when compiling patent statistics to reflect inventive activities, it is recommended to use the priority as the reference date.

3.4.2. *The Patent Cooperation Treaty*

The Patent Cooperation Treaty was signed in 1970 and entered into force in 1978. It is managed by the World Intellectual Property Organization (WIPO). As of 31 July 2006 there were 133 contracting states to the PCT. The PCT does not deliver patents. Instead, the PCT procedure provides the possibility to seek patent rights in a large number of countries by filing a single international application (PCT application) with a single patent office (receiving office) and then enter the national stage in the desired countries at a later date.[16] All applications (international or regional) must ultimately have a national status, i.*e*. they need to be validated (granted) in the national patent offices where patent protection is desired.

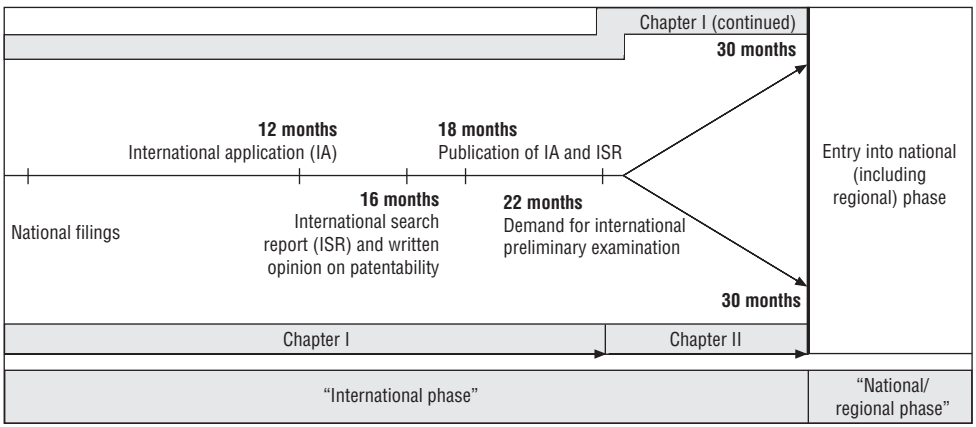
In functional terms, the PCT procedure gives the applicant the possibility to delay the national or regional procedures and thereby postpone the respective fees and translation costs up to 30 months after the priority filing. The applicant can therefore benefit from more information (regarding the prospective value of the patent) before incurring the high cost of filing applications in a large number of national offices. In that sense, a PCT application can be considered an option for future applications to patent offices around the world.

The PCT application starts with filing of an international application either at the national (or regional) patent office or with WIPO. This has to be done in the 12-month period following the priority filing, but it can be done immediately as a priority filing (Figure 3.1). The applicant must be a national or resident of one of the PCT signatory states. A PCT application automatically includes all PCT signatory states as *designating* states (designating states are countries in which the applicant wishes to protect an invention).[17]

After receipt at the WIPO, the application is transmitted to one of the appointed International Search Authorities (ISA), which are patent offices appointed by WIPO (including, for example, the EPO, JPO and USPTO). The ISA prepares an *international search report* (ISR), which is published at the same time as the application. It is built in the same way as the search reports for the national procedures. The ISR lists references to published patent documents and technical journal articles that might affect the patentability of the invention. The ISR is normally provided by the ISA to the applicant nine months after the filing of the application in the event of a first filing and 16 months after the priority date in the event of a subsequent filing (*i.e.* claiming the priority of a first filing). In addition to the ISR, since January 2004, a detailed written opinion on the patentability of the claimed invention is produced (the WOISA, written opinion of the ISA). The WOISA is a non-binding opinion on whether the invention appears to meet the patentability criteria in light of the search report results. The international application and the ISR are published after a period of 18 months from the priority date (written opinions are not published).

After receiving the ISR and the WOISA, the applicant can also request an international preliminary examination (IPE), which will generate an *international preliminary report on patentability* (IPRP). IPRP is a second evaluation of the potential

Figure 3.1. **Timeline for PCT procedures**



OECD PATENT STATISTICS MANUAL – ISBN 978-92-64-05412-7 – © OECD 2009

patentability of the invention. The request for an IPE must be filed within 22 months of the priority date (or three months after the issuance of the ISR, whichever is later). If the applicant does not request an international preliminary examination, the WOISA will be converted into an IPRP.[18] Finally, at 30 months from the priority date, the international phase ends and the international application enters the national or regional phase (*i.e.* the countries in which the applicant actually wants to apply for a patent).[19] As mentioned, all international or regional applications must ultimately have a national status.

In the case of the PCT it should be noted that after the transfer to the national or regional phase, it takes approximately six more months before this step is published at the regional/national office. In the case of Euro-PCT the information on the effective transfer to the EPO is available 36 months after priority (first filing). The late availability of this information strongly influences the computation of patent statistics and the timeliness of patent indicators at national patent offices.[20] In the next chapter, the issue of timeliness is discussed and various methods for "nowcasting" patent applications are briefly presented.

Notes

1. In general, there is a waiting period between the request for examination and the first office action, such as first notice of refusal or decision to grant. At the JPO, the average waiting period was 25.8 months in 2005, 23.8 months at the EPO, and 23.4 months at the USPTO (Trilateral Statistical Report, 2006).
2. No search report is made available in USPTO pre-grant publications or in JPO patent applications.
3. Many jurisdictions provide extended terms for drugs in order to compensate for the administrative delays in granting approval to market.
4. Fees are due each year at the national patent offices of the EPC member countries or after three, seven and eleven years at the USPTO. Fees generally increase progressively over time. Once a patent is granted by the EPO, it must be validated in each desired national patent office of the EPC member countries. At the JPO, renewal fees are due as a lump-sum fee for the first three years and then annually from the fourth year of the date of grant.
5. This amount comprises the fees for the EPO grant procedure, the costs of representation by a patent attorney before the EPO, the translation and validation costs, and the renewal fees for maintenance of the patent.
6. Patent offices publish aggregate counts of recent applications for the purpose of monitoring their own activity, but these data are not accessible to outside users and cannot be exploited for analytical purposes.
7. First, a search is done in order to establish the state of the art with respect to the invention. The applicant receives a search report accompanied by an initial opinion on patentability. In a second phase, the inventive step and industrial applicability are considered in the substantive examination.

8. Patents which were applied for prior to 8 June 1995, and which were or will be in force after 8 June 1995, have a patent term of 17 years from the date of patent grant or 20 years from the date of filing of the earliest related patent application, whichever is longer.

9. Because no examination of the patentability of the application in view of the prior art is performed, the USPTO fee for filing a provisional patent application is significantly lower than the fee for filing a standard non-provisional patent application.

10. Since 2000, applicants at the JPO can request early publication of the patent application within 1.5 years of the date of filing in order to deter imitation by third parties. Starting from the date of publication, applicants can claim compensation for infringement.

11. The EPO is not an institution of the European Union. At present there is no single EU-wide patent, although there has been concurrent discussion towards the creation of a "Community patent" within the European Union since the 1970s. In its Communication to the European Parliament and the Council (3 April 2007 COM, 165 Final) "Enhancing the Patent System in Europe", the Commission "is of the opinion that the creation of a single Community patent continues to be a key objective for Europe". In view of the difficulties in reaching an agreement on the community patent, other legal agreements have been proposed outside the European Union legal framework to reduce the cost of translation (of patents when granted) and litigation, namely the London Agreement and the European Patent Litigation Agreement (EPLA).

12. As of 2007, 32 countries are party to the treaty. In addition, the EPO has an "extension agreement" with five countries, which makes it possible to extend European patents to those countries upon request at the time of European patent application.

13. If the amount paid for designations is at least equivalent to seven times one designation fee, then all the contracting states are automatically considered designated, but the applicant can still remove any of them.

14. As a result, higher proportions of PCT applications passing to phase II are registered at the EPO. This is due to the supranational dimension of the EPO, which provides an opportunity to proceed with a unique procedure for several countries.

15. Furthermore, an applicant is entitled to claim priority even if the information in the subsequent application is not exactly the same as the earlier application, or if there are several "priority" applications combined into a single foreign application. As a result, when considering priority claims, one can expect different numbers of applications to have been filed in various countries.

16. This manual uses the terms "PCT application" and "international application" interchangeably.

17. Until January 2004, the applicant had to designate on the application form a specific list of countries in which protection might later be sought. This obligation was then removed (but applicants can list countries in which they do not intend to seek protection, although that will not change the application fees).

18. The IPRP provides the applicant with additional information on the patentability of inventions; therefore, applicants are in a better position to decide whether it is worthwhile to proceed to the national/regional phase.

19. However, any national law may fix time limits which expire later than 30 months. For instance, it is possible to enter the European regional phase at 31 months from the priority date. National and regional phases can also be started earlier on the express request of the applicant [Art. 20(3) or 40(2)].

20. In the case of continuations (*e.g.* CIP in United States) the lag between priorities (first filing and filing in other countries) can be longer (in general all priorities refer to one year after the first priority); which will then affect the timeliness of publication of patents at other jurisdictions.

References

European Patent Office, Japan Patent Office and United States Patent and Trademark Office, *Trilateral Statistical Report*, 2006 edition.

Harhoff, D. and M. Reitzig (2002), "Determinants of Opposition Against EPO Patent Grants: The Case of Biotechnology and Pharmaceuticals", *CEPR Discussion Papers*, No. 3645.

Acronyms

AFA	Activity of Foreign Affiliates Database
ARIPO	African Regional Intellectual Property Organization
BEA	Bureau of Economic Analysis (United States)
CAFC	Court of Appeals of the Federal Circuit (United States)
CIP	Continuation-in-Part
CIPO	Canadian Intellectual Property Office
DPMA	Deutsches Patent- und Markenamt (Germany)
ECLA	European Classification System
EPC	European Patent Convention
EPLA	European Patent Litigation Agreement
EPO	European Patent Office
EU	European Union
FhG-ISI	Fraunhofer Institute for Systems and Innovation Research
GATT	General Agreement on Trade and Tariffs
ICT	Information and communication technologies
IIP	Institute of Intellectual Property (Japan)
INID	Internationally agreed numbers for the identification of bibliographic data
INPI	Institut National de la Propriété Intellectuelle (France)
IPC	International Patent Classification
IPRP	International preliminary report on patentability
ISA	International search authorities
ISIC	International Standard Industrial Classification
ISR	International search report
NACE	Classification of Economic Activities in the European Community
NAICS	North American Industry Classification System
NBER	National Bureau of Economic Research (United States)
NISTEP	National Institute of Science and Technology Policy (Japan)
NSF	National Science Foundation (United States)
NUTS	Nomenclature of territorial units for statistics (*Nomenclature des unités territoriales statistiques*)
OECD	Organisation for Economic Co-operation and Development
OST	Observatoire des Sciences et des Techniques (France)

PATSTAT	Worldwide Statistical Patent Database (EPO)
PCT	Patent Co-operation Treaty
SIC	Standard Industrial Classification
SIPO	State Intellectual Property Office of the People's Republic of China
SMEs	Small and medium-sized enterprises
STAN	Structural Analysis Database
TL	Territorial level
TRIPS	Trade-related intellectual property rights
USPC	United States Patent Classification System
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization
WOISA	Written opinion of the international search authorities
WTO	World Trade Organization

ISBN 978-92-64-05412-7
OECD Patent Statistics Manual

Glossary

Appeal: A procedure by which the applicant or patent holder can request reversal of a decision taken by the patent office.

- *USPTO:* An applicant for a patent dissatisfied with the primary examiner's decision in the second rejection of his or her claims may appeal to the Board of Patent Appeals and Interferences (BPAI) for review of the examiner's rejection. The Board is a body of the USPTO which reviews adverse decisions of examiners in patent applications and determines priority and patentability of invention in interferences. Decisions of the Board can be further appealed to the *Court of Appeals for the Federal Circuit* (CAFC) or to a district court.
- *EPO:* Decisions of the first instances of the EPO can be *appealed* before the Boards of Appeal of the EPO, in a *judicial* procedure (proper to an administrative court), as opposed to an *administrative* procedure. These boards act as the final instances in the *granting* and *opposition* procedures before the EPO. In addition to the Boards of Appeal, the European Patent Office has an Enlarged Board of Appeal. This instance takes decisions only when the *case law* of the Boards of Appeal becomes inconsistent or when an important point of law arises.
- *JPO:* An applicant who receives a rejection can appeal. The panels consist of three or five trial examiners in the Appeals Department of the JPO. Decisions of the panels can be further appealed to the Intellectual Property High Court, a special branch within the Tokyo High Court.

Applicant: The holder of the legal rights and obligations on a patent application. It is most often a company, a university or an individual.

Application date: The date on which the patent office received the completed patent application. A unique number is assigned to a patent application when it is filed.

Assignee: In the United States, the person(s) or corporate body to whom all or limited rights under a patent are legally transferred by the inventor (equivalent to "applicant" in this context).

Citations: References to the prior art in patent documents. Citations may be made by the examiner or the applicant. They comprise a list of references which are believed to be relevant prior art and which may have contributed to defining the scope of the claims of the application. References can be made to

other patents, to technical journals, textbooks, handbooks and other sources. *USPTO:* Applicants before the USPTO are required to disclose prior art known to them that is material to patentability; *EPO:* No such obligation for the applicant; *JPO:* The requirement for disclosure of information on prior art documents was introduced as of 1 September 2002 and entered into full force on 1 May 2006.

Claim(s): Definition of the scope of the invention and the aspects of the invention for which legal protection is sought.

Continuation(s) *(USPTO)***:** Second or subsequent applications for the same invention claimed in a prior non-provisional application and filed before the first application is abandoned or patented. Continuations must claim the same invention as the original application to gain the benefit of the parent filing date. At the time of filing the claims are often the same but the claims may change during prosecution so that they are not exactly the same but not patentably distinct. There are three types of continuing applications: division, continuation and continuation-in-part.

Designated countries: In international and regional patent systems, countries in which patent applicants wish to protect their invention if/when the patent is granted. International application filing automatically includes the designation for all PCT contracting countries that are bound by the PCT on the international filing date (since 2004). A similar rule will apply to the EPO from April 2009, as European patent applications designate all contracting states as in the PCT procedure.

Direct European route (application): A patent application filed under Article 75 EPC (also known as an "Euro-Direct application"). With the direct European route, the entire European patent grant procedure is governed by the EPC alone while with the Euro-PCT route, the first phase of the grant procedure (the international phase), is subject to the PCT.

Division: If the patent office decides that an application covers too broad an area to be considered as a single patent, the application is split into one or more divisional applications, which may or may not be pursued by the applicant. A division can also be requested at the initiative of the applicant.

Equivalent: A patent that protects the same invention and shares the same priority application as a patent from a different issuing authority.

Euro-PCT route: A way to obtain a European patent by designating the EPO in a PCT application (Article 11 PCT). The first phase of the grant procedure (the international phase) is subject to the PCT, while the regional phase before the EPO as designated or elected office is governed primarily by the EPC.

- **Euro-PCT application** – international phase (or Euro-PCT application or PCT international): A PCT application designating the EPO [Article 150(3) EPC]. With

the Euro-PCT route, the first phase of the grant procedure (international phase) is subject to the PCT, while the regional phase before the EPO as designated or elected office is governed primarily by the EPC.

- **Euro-PCT application – regional phase (or PCT regional):** PCT application entering the European (or regional) phase once the applicant has fulfilled the conditions under Article 22 or 39 PCT, Article 158 and Rule 107 EPC.

Euro-PCT search (or PCT Chapter I): Search carried out by the EPO acting as International Searching Authority for a Euro-PCT application in the international phase (Article 16 PCT).

European patent: A European patent can be obtained for all EPC countries by filing a single application at the EPO in one of the three official languages (English, French or German). European patents granted by the EPO have the same legal rights and are subject to the same conditions as national patents (granted by the national patent office). It is important to note that a granted European patent is a "bundle" of national patents, which must be validated at the national patent office in order to be effective in member countries. The validation process may include submission of a translation of the specification, payment of fees and other formalities of the national patent office (once a European patent is granted, competence is transferred to the national patent offices).

European Patent Convention (EPC): The Convention on the Grant of European Patents was signed in Munich in 1973 and entered into force in 1977. It is a multilateral treaty instituting the European Patent Organisation and providing an autonomous legal system according to which European patents are granted. The EPC provides a legal framework for the granting of European patents, via a single, harmonised procedure before the European Patent Office. It enables the patent applicant, by means of a single procedure, to obtain a patent in some or all of the contracting states. As of January 2008 there are 34 EPC member countries. In addition, extension agreements exist with five countries, offering the possibility to extend European patents to those countries upon request. EPC member countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom. EPC extension countries are Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, and Serbia.

European Patent Office (EPO): The European Patent Office (a regional patent office) was created by the EPC to grant European patents, based on a centralised examination procedure. By filing a single European patent application in one of the three official languages (English, French or German), it is possible to

obtain patent rights in all EPC member and extension countries. The EPO is not an institution of the European Union.

Family: a set of patents (or applications) filed in several countries to protect the same invention. They are related to each other by one or several common priority numbers. There are different definitions of patent families (*e.g.* triadic patent families, extended families including continuations, etc.). Depending on the use sought, a different family concept can be chosen, *e.g.* equivalents, triadic family or trilateral family.

First to file: A patent system in which the first inventor to file a patent application for a specific invention is entitled to the patent. This law is increasingly becoming the standard for countries adhering to the Trade-related Aspects of Intellectual Property (TRIPs) guidelines. In the EPO and the JPO, patents are awarded on a first-to-file basis, whereas in the USPTO the patent is awarded on the first to invent basis.

First to invent *(USPTO)***:** A system in which a patent is awarded to the first person who made the invention, even if another person filed for a patent before the person who invented first.

Grant: A patent application does not automatically give the applicant a temporary right against infringement. A patent has to be granted for it to be effective and enforceable against infringement.

Grant date: The date when the patent office issues a patent to the applicant.

Infringement: Unauthorised making, using, offering for sale or selling any patented invention in the country in which the patent is enforceable or importing that invention into said country during the term of the patent.

Intellectual property rights (IPR): The exclusive legal rights associated with creative work, commercial symbols or inventions. There are four main types of intellectual property: patents, trademarks, design and copyrights.

International patent application: See "PCT application". A patent application filed under the Patent Cooperation Treaty (PCT) is commonly referred to as an "international patent application". However, international patent (PCT) applications do not result in the issuance of "international patents" (*i.e.* at present, there is no global patent system that issues and enforces international patents). The decision of whether to grant or reject a patent filed under PCT rests with the national or regional (*e.g.* EPO) patent offices.

International Patent Classification (IPC): The IPC is based on an international multilateral treaty administered by WIPO. The IPC is an internationally recognised patent classification system, which provides a common classification for patents according to technology groups. The IPC is a hierarchical system in which the whole area of technology is divided into eight sections broken down into classes, subclasses and groups. IPC is periodically revised in order to

improve the system and to take account of technical development. The eighth edition of the IPC entered into force on 1 January 2006.

International Searching Authority (ISA): An office with competence to carry out the international search for a PCT application. It may be either a national office (Australia, Austria, Canada, China, Finland, Japan, Korea, the Russian Federation, Spain, Sweden, the United States) or an intergovernmental organisation (EPO), (Article 16 PCT, Article 154 EPC).

Inventive step: At the EPO and JPO, an invention is considered to include an inventive step if it is not obvious to a person skilled in the art. Inventive step is one of the criteria (along notably with novelty and industrial applicability) that need to be fulfilled in order to obtain a patent. See also "non-obviousness"*(USPTO)*.

Inventor country: Country of residence of the inventor.

Japan Patent Office (JPO): The JPO administers the examination and granting of patent rights in Japan. The JPO is an agency of the Ministry of Economy, Trade and Industry (METI).

Lapse: The date when a patent is no longer valid in a country or system owing to failure to pay renewal (maintenance) fees. Often the patent can be reinstated within a limited period.

Licence: The means by which the owner of a patent gives permission to another party to carry out an action which, without such permission, would infringe the patent. A licence can thus allow another party to legitimately manufacture, use or sell an invention protected by a patent. In return, the patent owner will usually receive royalty payments. A licence, which can be exclusive or non-exclusive, does not transfer the ownership of the invention to the licensee.

National application: A patent application that is filed at a national patent office according to a national procedure.

Novelty: An invention cannot be patented if certain disclosures of the invention have been made.

Non-obviousness *(USPTO)***:** Something is obvious if the differences between the subject matter 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 with ordinary skills in the art to which said subject matter pertains. See also "inventive step"*(EPO, JPO)*.

Opposition: This is a procedure usually before the issuing patent office, initiated by third parties to invalidate a patent:

- *EPO:* Opposition to the grant of a European patent can be filed within nine months of the mention of the grant in the European Patent Bulletin.

- *JPO:* Opposition to a grant could be filed within six months of the issue of the grant before the reform of appeals for invalidation was introduced in January 2004.

Paris Convention: The Paris Convention for the Protection of Industrial Property was established in 1883 and is generally referred to the Paris Convention. It established the system of priority rights, under which applicants have up to 12 months from first filing their patent application (usually in their own country) in which to make further subsequent applications in each signatory country and claim the original priority date. There are 172 countries party to the treaty (March 2008).

Patent: A patent is an intellectual property right issued by authorised bodies which gives its owner the legal right to prevent others from using, manufacturing, selling, importing, etc., in the country or countries concerned, for up to 20 years from the filing date. Patents are granted to firms, individuals or other entities as long as the invention satisfies the conditions for patentability: novelty, non-obviousness and industrial applicability. A patent is known as a utility patent in the United States.

Patent Cooperation Treaty (PCT): As of March 2008, there were 138 countries party to the treaty, which was signed in 1970 and entered into force in 1978, enabling a patent applicant, by means of a single procedure, to obtain a patent in some or all of the contracting states. The PCT provides the possibility to seek patent rights in a large number of countries by filing a single international application (PCT application) with a single patent office (receiving office). PCT applications do not result in the issuance of "international patents". The decision on whether to grant or reject patent rights rests with national or regional patent offices. The PCT procedure consists of two main phases: *i*) an "international phase"; and *ii*) a PCT "national/regional phase". PCT applications are administered by the World Intellectual Property Organization (WIPO).

PCT international search: A search carried out by a designated office (international searching authority) for PCT applications.

Pending application: An application has been made at the patent office, but no decision has been taken on whether to grant or reject the patent application

Prior art: Previously used or published technology that may be referred to in a patent application or examination report. In a broad sense, this is technology that is relevant to an invention and was publicly available (*e.g.* described in a publication or offered for sale) at the time an invention was made, In a narrow sense, it is any technology that would invalidate a patent or limit its scope. The process of prosecuting a patent or interpreting its claims largely consists of identifying relevant prior art and distinguishing the claimed invention from that prior art. The objective of the search process is to identify patent and non-

patent documents constituting the relevant prior art in order to determine whether the invention is novel and includes an inventive step.

Priority country: Country where the patent is first filed worldwide before being extended to other countries. See "Paris Convention".

Priority date: The priority date is the first date of filing of a patent application, anywhere in the world (usually in the applicant's domestic patent office), to protect an invention. The priority date is used to determine the novelty of the invention, which implies that it is an important concept in patent procedures. Among procedural data, priority date can be considered as the closest date to the date of invention. In the United States the date of conception comes into play during interferences.

Priority rights: see "Paris Convention".

Processing time: Duration of a process in the patent procedure (*e.g.* search, examination, grant, and possible opposition and appeal).

Publication: In most countries, a patent application is published 18 months after the priority date:

- *EPO:* All patent applications are published in this manner, whether the patents have been granted or not.
- *JPO:* Patent applications that are no longer pending in the JPO, *e.g.* granted, withdrawn, waived or rejected, are not published. While official patent gazettes are only published in Japanese, the abstracts and bibliographic data of most of the unexamined patent applications are translated into English, and are published as the Patent Abstracts of Japan (PAJ).
- *USPTO:* Prior to a change in rules under the American Inventors Protection Act of 1999, USPTO patent applications were held in confidence until a patent was granted. Patent applications filed at the USPTO on or after 29 November 2000 are required to be published 18 months after the priority date. However, there are certain exceptions for the publication of pending patents. For example, an applicant can ask (upon filing) for the patent not to be published by certifying that the invention disclosed in the application has not and will not be the subject of an application filed in another country. Also, if the patent is no longer pending or subject to a secrecy order, then the application will not be published.

Renewal fees: Once a patent is granted, annual renewal fees are payable to patent offices to keep the patent in force. In the USPTO they are referred to as "maintenance fees". In most offices, renewal fees are due every year. USPTO-granted (utility) patents are subjected to maintenance fees which are due three-and-a-half years, seven-and-a-half years, and eleven-and-a-half years from the date of the original patent grant.

Request for examination: Patent applications filed at the EPO and JPO do not automatically enter the examination process. The applicant has to submit a request for examination within six months of the transmission of the search report at the EPO, and within three years of filing at the JPO. Patent applications filed at the USPTO are automatically examined by a patent examiner without the need for a separate request by the applicant.

Revocation: A patent is revoked if after it has been granted by the patent office, it is deemed invalid by a higher authority (appeal body within the patent office or a court).

Search report: The search report is a list of citations of all published prior art documents which are relevant to the patent application. The search process, conducted by a patent examiner, seeks to identify patent and non-patent documents constituting the relevant prior art to be taken into account in determining whether the invention is novel and includes an inventive step.

Triadic patent families: The triadic patent families are defined at the OECD as a set of patents taken at the European Patent Office (EPO) and the Japan Patent Office (JPO) and granted by the US Patent and Trademark Office (USPTO) which share one or more priorities. Triadic patent families are consolidated to eliminate double counting of patents filed at different offices (*i.e.* regrouping all the interrelated priorities in EPO, JPO and USPTO patent documents).

Trilateral patent families: A trilateral patent family is part of a filtered subset of patent families for which there is evidence of patenting activity in all trilateral blocs. It is then similar to a triadic family, except that it would also include applications filed in any EPC state that do not go to the EPO (in addition to going to the JPO and USPTO). Trilateral patent families are usually counted in terms of individual priorities, without consolidation.

United States Patent and Trademark Office (USPTO): The USPTO administers the examination and granting of patent rights in the United States. It falls under the jurisdiction of the US Department of Commerce.

Utility model: This type of patent, also known as a "petty patent", is available in some countries. It usually involves less stringent patentability requirements than a traditional patent, it is cheaper to obtain and it is valid for a shorter time period.

Withdrawal: Under the European Patent Convention, the applicant can withdraw an application at any stage of the procedure either by informing the office or by abstaining from one or more of the following: pay fees in due time, file a request for examination within the given time period, or reply in due time to any communication within the examination procedure.

World Intellectual Property Organization (WIPO): An intergovernmental organisation responsible for the administration of various multilateral treaties dealing with the legal and administrative aspects of intellectual property. In the patent area, the WIPO is notably in charge of administering the Paris Convention, the Patent Cooperation Treaty (PCT) and the International Patent Classification system (IPC).

Table of Contents

List of Boxes

List of Tables

List of Figures