

Additional information

Data description

Data sources

Intellectual property (IP) data are taken from the WIPO Statistics Database and based primarily on WIPO's annual IP statistics surveys (see below) and on data compiled by WIPO in processing international applications/registrations through the Patent Cooperation Treaty (PCT) and the Madrid and Hague Systems.

Data are available from WIPO's Statistics Data Center at www.wipo.int/ipstats.

Patent family and technology data are extracted from the WIPO Statistics Database and from the 2019 spring edition of the European Patent Office's PATSTAT database.

Gross domestic product and population data are from the World Bank's World Development Indicators database.

This report uses the World Bank's income classifications. Economies are classified according to 2018 gross national income per capita, calculated using the World Bank Atlas method. These classifications are low-income (USD 1,025 or less), lower middle-income (USD 1,026 to USD 3,995), upper middle-income (USD 3,996 to USD 12,375) and high-income (over USD 12,375).

This report uses United Nations (UN) definitions of regions and sub-regions, whereas the geographical terms used may differ slightly from those defined by the UN.

WIPO's annual IP statistics surveys

WIPO collects data from national/regional IP offices, other competent authorities and publishers' associations from around the world through annual surveys consisting of multiple questionnaires. These data are then entered into the WIPO Statistics Database. Where possible, data published on IP offices' websites or in their annual reports are used to supplement the questionnaire responses in cases where IP offices/countries do not provide statistics. Continuous efforts are being made to improve the quality and availability of IP statistics and to gather data from as many IP offices and countries as possible.

WIPO's long-established and regular IP survey covers patents, utility models, trademarks, industrial designs and plant varieties. It consists of 28 questionnaires, all of which are available in English, French and Spanish at www.wipo.int/ipstats/en/data_collection/questionnaire.

The geographical indications (GI) questionnaire seeks to collect data on GIs in force through a simple questionnaire. In 2017, for the first time, WIPO published statistics on GIs in force covering data for 54 jurisdictions. The 2018 edition of this report included GIs in force data covering 82 authorities. This 2019 edition reports data for 92 authorities – a considerable improvement upon the 54 responses that WIPO received only two years ago.

In 2017, in collaboration with the International Publishers Association (IPA), WIPO launched a new survey of the global publishing industry. This survey covers trade publishing and educational publishing only. Its scope is limited to published materials (i.e., books, monographs, etc.) that have been issued with an International Standard Book Number (ISBN), a Digital Object Identifier (DOI) or any other national/international book identifier (e.g., ASIN, etc.). Last year's edition reported data for the 28 associations/authorities that shared their 2017 data with the IPA and WIPO. This edition includes publishing industry data for the 49 associations/authorities who shared their 2018 data. Although the data coverage has improved this year, further efforts will be made over the coming years to enhance the quality and coverage of publishing industry data.

To validate the data collected through the global publishing survey, WIPO has started to collect data on legal deposit. Legal deposit is a statutory obligation at the national level requiring publishers to deposit a certain number of copies of their published documents at a repository, that is, a recognized place of legal deposit. WIPO conducted a pilot survey among national legal repositories. Over 40 countries participated in this survey. The data presented in this report does not cover all the countries that participated, but is available for 39. Two countries, namely Switzerland and the Netherlands, reported that they had no legal deposit system in place. In Nepal, there is a "voluntary" deposit system, with a majority of publications deposited at the Nepal National Library.

IP office survey coverage

IP offices are requested to report data by the origin (country or territory) of applications, grants or registrations. However, some offices are unable to provide a detailed breakdown. Instead, these offices report either an aggregate total or a simple breakdown by total resident and total non-resident counts. For this reason, the totals for each origin are underreported. However, the unknown origin shares of the 2018 totals are low – only 0.5% for patent applications, 1.1% for trademark application class counts and 0.4% for application design counts.

IP applications data coverage by IP type

IP type	Number of offices on which 2018 world totals are based	Number of offices for which 2018 data are available	Data coverage (%)
Patents	160	130	99.9
Utility models	75	72	100.0
Trademarks (a)	166	127	98.9
Industrial designs (b)	148	137	99.7
Plant varieties	70	58	99.1

(a) Refers to the number of trademark applications based on class count (that is, the number of classes specified in applications).

(b) Refers to the number of industrial design applications based on design count (that is, the number of designs contained in applications).

industrial designs, data include national and regional applications combined with designations received by relevant offices through the Hague System.

International comparability of indicators

Every effort has been made to compile IP statistics based on the same definitions and to facilitate international comparability. Although data are collected from offices using questionnaires from WIPO's harmonized annual IP survey, national laws and regulations for filing IP applications or for issuing IP rights, as well as statistical reporting practices, may vary between jurisdictions. Due to the continual updating of data and the revision of historical statistics, data in this report may differ from data in previous editions and from data available on WIPO's website.

Change in method of counting IP applications by CNIPA in 2017

Due to a change in the method by which the National Intellectual Property Administration of the People's Republic of China (CNIPA) calculates the number of patent, utility model and industrial design applications filed, data on the number of such applications filed in China in 2017 and 2018 are not comparable with data for previous years. Prior to 2017, these data included all applications received; from 2017 onwards, however, they include only those applications for which the office has received the necessary application fees. As a result, it is not meaningful to report growth rates in the number of patent, utility model and industrial design applications filed in China in 2017 compared to 2016. Moreover, since China represents such a large share of IP applications globally, it is not meaningful to report growth rates in the number of such applications filed worldwide in 2017 compared to 2016. For the reason of this break in the data series, figure A1 (page 24), figure A53 (page 56), figure C1 (page 135) and figure C2 (page 135) do not report 2017 growth.

Estimating world totals

World totals for applications for, and grants/registrations of, patents, utility models, trademarks, industrial designs and plant varieties are WIPO estimates. Data are not available for all IP offices for every year. Missing data are estimated using methods such as linear extrapolation and averaging adjacent data points. The estimation method used depends on the year and office in question. When an office provides data which are not broken down by origin, WIPO estimates the resident and non-resident counts using the historical shares of that office. Data are available for most of the larger offices; only small shares of world totals are estimated. For example, the estimate of the total number of patent applications worldwide covers 160 offices; data are available for 130 of them, which together account for 99.9% of the estimated world total.

National and international data

Application and grant/registration data include data on both direct filings and filings made through WIPO-administered international systems (where applicable). For patents and utility models, data include direct filings at national patent offices, as well as PCT national phase entries. For trademarks, data include filings at national and regional offices and designations received by relevant offices through the Madrid System. For

IP systems at a glance

The patent system

A patent is a set of exclusive rights granted by law to applicants for an invention that meets the standards of novelty, non-obviousness and industrial applicability. It is valid for a limited period (generally 20 years), during which time the patent holder can commercially exploit the invention on an exclusive basis. In return, applicants are obliged to disclose their inventions to the public, so that others skilled in the art may replicate them. The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, thus enabling them to appropriate the returns from their innovative activity.

The procedures for acquiring patent rights are governed by the rules and regulations of national and regional patent offices. These offices are responsible for issuing patents and the rights are limited to the jurisdiction of the issuing authority. To obtain patent rights, applicants must file an application describing the invention with a national or regional office.

Applicants can also file an international application through the Patent Cooperation Treaty (PCT) System, an international treaty administered by WIPO that facilitates the acquisition of patent rights in multiple jurisdictions. The PCT System simplifies the process of multiple national patent filings by delaying the requirement to file a separate application in each jurisdiction in which protection is sought. However, the decision on whether to grant a patent remains the prerogative of national or regional patent offices and patent rights are limited to the jurisdiction of each patent-granting authority.

The PCT application process begins with the international phase, during which an international search and optional preliminary examination and supplementary international search are performed. It concludes with the national phase, during which national (or regional) patent offices decide on the patentability of an invention according to national law. Further information about the PCT System is available at www.wipo.int/pct.

The utility model system

Like a patent, a utility model (UM) confers a set of rights to an invention for a limited period, during which

the UM rights holder can commercially exploit their invention on an exclusive basis. The terms and conditions for granting a UM differ from those for granting a traditional patent. For example, UMs are issued for a shorter period (6–10 years) and at most offices protection is granted without substantive examination. As with patents, procedures for granting UM rights are governed by the rules and regulations of national intellectual property (IP) offices and rights are limited to the jurisdiction of the issuing authority.

Approximately 75 countries provide protection for UMs. In this report, the term “utility model” refers to UMs and other types of protection similar to UMs, such as innovation patents in Australia and short-term patents in Ireland.

Microorganisms under the Budapest Treaty

The Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure plays an important role in relation to biotechnological inventions. Disclosing an invention is a generally recognized requirement for receiving a patent. When an invention involves microorganisms, national laws in most countries require the applicant to deposit a sample at a designated International Depositary Authority (IDA).

To eliminate the need to deposit a microorganism in every country in which patent protection is sought, the Budapest Treaty provides that depositing a microorganism with any IDA will suffice for the purposes of patent procedures at the national patent offices of all contracting states and at regional patent offices that recognize the Treaty. An IDA is a scientific institution – typically a “culture collection” – capable of storing microorganisms. Currently, there are 47 IDAs around the world. Further information about the Budapest Treaty is available at www.wipo.int/treaties/en/registration/budapest.

The trademark system

A trademark is a distinctive sign that identifies certain goods or services as those produced or provided by a specific person or enterprise. Trademarks can be registered for both goods and services. In the latter case, the term “service mark” is sometimes used. For simplicity, this report uses “trademark” regardless of whether the registration concerns goods or services. The holder of a registered trademark has the exclusive right to use

the mark in relation to the goods or services for which it is registered and can block unauthorized use of the trademark, or a confusingly similar mark, to prevent consumers from being misled. Unlike patents, trademark registrations can be maintained indefinitely, provided that the trademark holder pays the required renewal fees.

The procedures for registering trademarks are governed by the rules and regulations of national and regional IP offices. Therefore, trademark rights are limited to the jurisdiction of the authority in which a trademark is registered. Trademark applicants can file an application with the relevant national or regional IP office or an international application through the Madrid System. However, when an applicant files internationally via the Madrid System, the decision to issue a trademark registration remains the prerogative of the national or regional IP office concerned and trademark rights remain limited to the jurisdiction of the authority issuing that registration.

Originally, two treaties administered by WIPO governed the Madrid System for the International Registration of Marks. These treaties are the Madrid Agreement Concerning the International Registration of Marks and the Protocol Relating to the Madrid Agreement, and are jointly referred to as the Madrid System. The Madrid Agreement was concluded in 1891 and the Madrid Protocol came into operation in 1996. With Algeria's accession to the Madrid Protocol in October 2015, the last remaining member to be a party only to the Madrid Agreement joined the Protocol, effectively making Madrid a one-treaty system. The Madrid System offers many advantages to both trademark holders and IP offices over the alternative method of obtaining international protection for marks called the Paris route or the "direct route". The Paris route involves filing separate applications in a number of countries or regions using rights established under the Paris Convention for the Protection of Industrial Property. In comparison, the Madrid System allows trademark holders to submit a single application in one language and pay a single set of fees in one currency.

The Madrid System also simplifies the subsequent management of the trademark, since it is possible to centrally request and record further changes or renew the registration through a single procedure. A registration recorded in the International Register yields the same effect as a registration made directly with each designated Contracting Party (Madrid member) if the competent authority of that jurisdiction has not issued a refusal within a specified time period. Further information about the Madrid System is available at www.wipo.int/madrid.

The industrial design system

Industrial designs are applied to a wide variety of industrial products and handicrafts.¹ They refer to the ornamental or aesthetic aspects of a useful article, including compositions of lines or colors or three-dimensional forms that give a special appearance to a product or handicraft. The holder of a registered industrial design has exclusive rights over the design and can prevent unauthorized copying or imitation of the design by others.

The procedures for registering industrial designs are governed by national or regional laws. An industrial design can be protected if it is new or original and rights are limited to the jurisdiction of the issuing authority. Registrations can be obtained by filing an application with a relevant national or regional IP office or by filing an international application through the Hague System. Once a design is registered, the term of protection is generally five years and may be renewed for additional five-year periods up to a total of 15 years in most cases. In some countries, industrial designs are protected through the delivery of a design patent rather than design registration.

The Hague System comprises two international treaties – the Hague Act and the Geneva Act. The System makes it possible for an applicant to register industrial designs in multiple countries by filing a single application with the International Bureau of WIPO, thus simplifying the multinational registration process. Moreover, by allowing the filing of up to 100 different designs per application, the System offers considerable opportunities for efficiency gains. It also streamlines the subsequent management of industrial design registration, since it is possible to record changes or renew a registration through a single procedure. Further information about the Hague System is available at www.wipo.int/hague.

Plant variety protection

To obtain protection, a plant breeder must file an individual application with each authority entrusted with granting breeders' rights. A breeder's right is granted only when a variety is new, distinct, uniform and stable, and has a suitable denomination.

In the United States of America (U.S.), two legal frameworks protect new plant varieties: the Plant Patent Act (PPA) and the Plant Variety Protection Act (PVPA). Under the PPA, whoever invents or discovers and asexually reproduces any distinct and new variety of plant –

including cultivated sports, mutants, hybrids and newly found seedlings, other than a tuber-propagated plant (in practice, Irish potato and Jerusalem artichoke) or a plant found in an uncultivated state – may obtain a patent. Under the PVPA, the U.S. protects all sexually reproduced plant varieties and tuber-propagated plant varieties, excluding fungi and bacteria.

Protection of geographical indications

A geographical indication (GI) is a sign identifying a good as originating in a specific geographical area and possessing a given quality, reputation or other characteristic that is essentially attributable to that geographical origin. Thus, the main function of a GI is to indicate a connection between that quality, characteristic or reputation of the good and its territory of origin.

World-renowned examples of GIs include Café de Colombia (Colombia), Bordeaux (France), Kampot Pepper (Cambodia), Penja Pepper (Cameroon) and Scotch Whisky (U.K.).

GIs are mainly used for agricultural and food products, which typically tend to have a close natural link with their place of origin. There are, however, also many GIs for other kinds of products. The specific qualities of the product may derive from traditional manufacturing skills or from a combination of local know-how and natural resources. Examples of such GIs include Bohemia Crystal (Czech Republic), Solingen Cutlery (Germany), Isfahan Handmade Carpet (Islamic Republic of Iran), Swiss Watches (Switzerland) and Yangzhou Lacquerware (China).

Although GIs are commonly names of places, under many systems they may consist of non-geographical terms with a traditional geographical connotation; for example, Reblochon (France) and Argane (Morocco) serve as GIs, although neither are geographical names.

GIs can only be used by producers whose goods conform to the applicable requirements concerning the area of origin, processing method and typicity of the product. Production sites located outside the area of origin and goods that do not meet the applicable requirements are prevented from using the protected indication.

Appellations of origin

An appellation of origin is a special kind of geographical indication. It generally consists of a geographical name or a traditional denomination which serves to

designate a product as originating therein, where the quality or characteristics of the product are due exclusively or essentially to the geographical environment, including natural and human factors, and which have given the good its reputation. The most important difference between appellations of origin and other GIs is that the link with the place of origin should be stronger in the case of an appellation of origin; in other words, appellations of origin are a more restrictive sub-category of GIs.

Protection of GIs

At the national and regional levels, GIs are protected through a variety of legal means. These include *sui generis* systems – laws specifically designed to protect geographical indications,² often based on a registration procedure. *Sui generis* systems generally provide protection against any direct and indirect commercial use of the GI, as well as against its imitation. *Sui generis* systems for GI protection are used in many countries and also by two regional intergovernmental organizations: the African Intellectual Property Organization (OAPI) and the European Union (EU).

GIs are also protected on the basis of trademark law, commonly through the use of collective and certification marks. Because trademarks incorporating geographical terms are typically not recorded by IP offices as a separate category of trademarks, and because not all trademarks incorporating geographical terms can be considered to be GIs, it may be difficult to determine the exact number of registered GIs within those jurisdictions. It is also worth noting that GI protection via trademark and *sui generis* systems are not mutually exclusive but often coexist, under many legal frameworks, and are available to the benefit of GI holders.

Finally, GIs are typically also protected under unfair competition regulation, consumer protection laws and administrative and judicial decisions, as well as under specific laws or decrees recognizing individual GIs.

The effects of a GI right obtained in a particular jurisdiction are limited to the territory of that jurisdiction. Thus, where a right over a GI is obtained in one jurisdiction, it is protected there but not abroad. In order to obtain protection in a foreign jurisdiction, GI holders must, in principle, seek protection under the relevant national laws prevailing in the jurisdiction in question. However, international agreements can facilitate the acquisition of GI rights abroad. In particular, many bilateral and regional trade agreements have incorporated lists of GIs that are to be protected in the relevant parties to the agreement. The listed GIs may relate to existing or

subsequent registrations of GI rights, but protection may also emanate from the trade agreements themselves.

Another way of obtaining protection for GIs abroad is through two international registration systems administered by WIPO: the Lisbon System and the Madrid System.

The Lisbon System

The Lisbon System was established in 1958 to facilitate the international protection of appellations of origin through a single registration procedure.³ Registration with the WIPO International Bureau ensures protection in all Lisbon contracting parties, without the need for renewal and for as long as the appellation of origin remains protected in its contracting party of origin. However, the decision as to whether to protect a newly registered appellation of origin at the national level remains the prerogative of each contracting party and each Lisbon member can refuse protection based on any ground within one year of being notified of a new appellation of origin by the WIPO International Bureau. The Lisbon System is flexible with regard to the means by which countries may provide protection for the registered appellation of origin (e.g., *sui generis* systems, trademark laws or specific ad hoc decrees, as well as judicial and administrative decisions).

Globally-renowned examples of appellations of origin protected under the Lisbon System include Tequila (Mexico), Chianti for wines (Italy), Habanos for cigars (Cuba) and handicrafts such as Chulucanas for ceramics (Peru), Herend for porcelain (Hungary) and Kraslice musical instruments (Czech Republic). The scope of the System extends to non-geographical traditional names, such as Reblochon (France) and Vinho Verde (Portugal).

In 2015, with the adoption of the Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications, which will enter into force after five ratifications or accessions, Lisbon contracting parties modernized the System to attract a wider membership, while preserving its principles and objectives. The Geneva Act formally extends the scope of the Lisbon System to the general category of GIs in addition to appellations of origin. The new Act also opens the Lisbon System to accession by intergovernmental organizations, such as the EU and OAPI.

Protection of GIs abroad through the Madrid System

GIs can also be protected in several countries as trademarks (most commonly collective and certification marks) through the Madrid System, an international registration system legally governed by the Madrid Agreement (1891) and the Madrid Protocol (1989) and

administered by WIPO.⁴ Famous examples of collective and certification marks registered under the Madrid System include Napa Valley for wine (U.S.) and Parmigiano Reggiano for cheese (Italy). As at June 2017, there were more than 1,200 collective and certification marks registered under the Madrid System. However, collective and certification marks protecting GIs are not separately recorded, so it is difficult to determine their exact number.

- 1 The products and handicrafts to which industrial designs are applied range from technical and medical instruments to watches, jewelry and other luxury items, and from housewares, electrical appliances, vehicles and construction materials to textile designs and leisure goods.
- 2 The terminology used at national and regional levels to refer to *sui generis* rights over GIs is not uniform. Different terms, such as appellations of origin, controlled appellations of origin, protected designations of origin, protected geographical indications, (qualified) indications of source or simply geographical indications are used in different legislations. Despite the different terminology, however, the common denominator remains the link between the specific quality, characteristics or reputation of the product and its territory of origin. For simplicity, the present text generally uses “geographical indication (GI)” regardless of the different national and regional terminology.
- 3 The Lisbon System is administered by WIPO and comprises the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration (1958), as revised at Stockholm in 1967 and amended in 1979, and the Geneva Act of the Lisbon Agreement on Appellations of Origin and Geographical Indications (2015), which has not yet entered into force.
- 4 For more information about the Madrid System, please see the *Madrid Yearly Review 2019*.

Glossary

This glossary provides definitions of key technical terms and concepts. Many of these terms are defined generically (for example, “application”) but apply to several or all of the various forms of intellectual property (IP) covered in this report.

Applicant

An individual or other legal entity that files an application for a patent, utility model, trademark or industrial design. There may be more than one applicant in an application. For the statistics in this publication, the name of the first named applicant is used to determine the origin of the application.

Application

The procedure for requesting IP rights at an office, which then examines the application and decides whether to grant protection. Also refers to a set of documents submitted to an office by the applicant.

Application abroad

For statistical purposes, an application filed by a resident of a given state or jurisdiction with the IP office of another state or jurisdiction. For example, an application filed by an applicant domiciled in France with the Japan Patent Office (JPO) is considered an application abroad from the perspective of France. This differs from a “non-resident application,” which describes an application filed by a resident of a foreign state or jurisdiction from the perspective of the office receiving the application: the example above would be a non-resident application from the JPO’s point of view.

Application date

The date on which the IP office receives an application that meets the minimum requirements. Also referred to as the filing date.

Budapest Treaty

Disclosure of an invention is a requirement for granting a patent. Normally, an invention is disclosed by means of a written description. Where an invention involves a microorganism or the use of a microorganism, disclosure is not always possible in writing but can sometimes only be effected by depositing a sample of the microorganism with a specialized institution. To eliminate the need to deposit a microorganism in each country in which patent protection is sought, the Budapest Treaty provides that the deposit of a microorganism with any International Depositary Authority (IDA) suffices for the purposes of patent procedure at the national patent offices of all contracting states and at any regional patent office that recognizes the Treaty.

Certification trademark

Certification marks are usually given for compliance with defined standards but are not confined to any membership. They may be used by anyone who can certify that the products involved meet certain established standards. In many countries, the main difference between collective marks and certification marks is that collective marks may only be used by a specific group of enterprises, for example, members of an association, while certification marks may be used by anybody who complies with the standards defined by the owner of the certification mark.

Class

May refer to the classes defined in either the Locarno Classification or the Nice Classification. Classes indicate the categories of goods and services (where applicable) for which industrial design or trademark protection is requested. See “Locarno Classification” and “Nice Classification.”

Class count

The number of classes specified in a trademark application or registration. In the international trademark system and at certain national and regional offices, an applicant can file a trademark application that specifies one or more of the 45 goods and services classes of the Nice Classification. Offices use a single or multi-class filing system. For example, the offices of Japan, the Republic of Korea and the United States of America (U.S.), as well as many European IP offices, have multi-class filing systems. The offices of Brazil, Mexico and South Africa follow a single-class filing system, requiring a separate application for each class in which an applicant seeks trademark protection. To capture the differences in application and registration numbers across offices, it is useful to compare their respective application and registration class counts.

Collective trademark

Collective marks are usually defined as signs which distinguish the geographical origin, material, mode of manufacture or other common characteristics of goods or services of different enterprises using the collective mark. The owner may be either an association of which those enterprises are members or any other entity, including a public institution or a cooperative.

Community Plant Variety Office (CPVO) of the European Union (EU)

An EU agency that manages a system of plant variety rights covering all EU member states.

Design count

The number of designs contained in an industrial design application or registration. Under the Hague System for the International Registration of Industrial Designs,

it is possible for an applicant to obtain protection for up to 100 industrial designs for products belonging to one and the same class by filing a single application. Some national or regional IP offices allow applications to contain more than one design for the same product or within the same class, while others allow only one design per application. In order to capture the differences in application and registration numbers across offices, it is useful to compare their respective application and registration design counts.

Designation

The request, in an international application or registration, by which the applicant/international registration holder specifies the jurisdiction(s) in which they seek to protect their industrial designs (Hague System) or trademarks (Madrid System).

Direct filing

See "National route."

Equivalent application

Applications at regional offices are equivalent to multiple applications, one in each of the states that is a member of those offices. To calculate the number of equivalent applications for the Benelux Office for Intellectual Property (BOIP), the Eurasian Patent Organization (EAPO), the African Intellectual Property Organization (OAPI), the Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC Patent Office) and the European Union Intellectual Property Office (EUIPO), each application is multiplied by the corresponding number of member states. For European Patent Office (EPO) and African Regional Intellectual Property Organization (ARIPO) data, each application is counted as one application abroad if the applicant does not reside in a member state or as one resident application and one application abroad if the applicant resides in a member state. The equivalent application concept is used for reporting data by origin.

Equivalent grant (registration)

Grants (registrations) at regional offices are equivalent to multiple grants (registrations), one in each of the states that is a member of those offices. To calculate the number of equivalent grants (registrations) for BOIP, EAPO, the EUIPO, the GCC Patent Office or OAPI, each grant (registration) is multiplied by the corresponding number of member states. For EPO and ARIPO data, each grant is counted as one grant abroad if the applicant does not reside in a member state or as one resident grant and one grant abroad if the applicant resides in a member state. The equivalent grant (registration) concept is used for reporting data by origin.

European Patent Office (EPO)

The EPO is the regional patent office created under

the European Patent Convention (EPC), in charge of granting European patents for EPC member states. Under Patent Cooperation Treaty (PCT) procedures, the EPO acts as a receiving office, an International Searching Authority and an International Preliminary Examining Authority.

European Union Intellectual Property Office (EUIPO)

The EUIPO is the office responsible for managing the EU trademark and the registered community design. The validity of these two intellectual property rights extends across the jurisdictions of the EU's 28 member states.

Filing

See "Application."

Foreign-oriented patent families

A special subset of patent families that comprises foreign-oriented patent families: this includes only patent families that have at least one filing office which differs from the office of the applicant's country of origin. Some foreign-oriented patent families include only one filing office, because applicants may choose to file directly with a foreign office. For example, if a Canadian applicant files a patent application directly with the United States Patent and Trademark Office (USPTO) without previously filing with the patent office of Canada, that application and applications filed subsequently with the USPTO will form a foreign-oriented patent family.

Geographical indication

A geographical indication (GI) is a sign identifying a good as originating in a specific geographical area and possessing a given quality, reputation or other characteristic that is essentially attributable to that geographical origin. Thus, the main function of a GI is to indicate a connection between that quality, characteristic or reputation of the good and its territory of origin.

Grant

A set of exclusive rights legally accorded to the applicant when a patent or utility model is granted or issued.

Gross domestic product (GDP)

The total unduplicated output of economic goods and services produced within a country as measured in monetary terms.

Hague international application

An application for the international registration of an industrial design filed under the WIPO-administered Hague System.

Hague international registration

An international registration issued via the Hague

System, which facilitates the acquisition of industrial design rights in multiple jurisdictions. An application for international registration of an industrial design leads to its recording in the International Register and the publication of the registration in the *International Designs Bulletin*. If the registration is not refused by the IP office of a designated Hague member, the international registration will have the same effect as a registration made in that jurisdiction.

Hague member (Contracting Party)

A state or intergovernmental organization that is a member of the Hague System. Includes any state or intergovernmental organization which is party to the Geneva Act of 1999 and/or the Hague Act of 1960. Entitlement to file an international application under the Hague Agreement is limited to natural persons or legal entities having a real and effective industrial or commercial establishment, or a domicile, in at least one of the Contracting Parties to the Agreement, or being a national of one of those Contracting Parties or of a member state of an intergovernmental organization that is a Contracting Party. In addition – but only under the 1999 Act – an international application may be filed on the basis of habitual residence in the jurisdiction of a Contracting Party.

Hague route

An alternative to the Paris route (i.e., the direct national or regional route), the Hague route enables an application for international registration of industrial designs to be filed using the Hague System.

Hague System

The abbreviated form of the Hague System for the International Registration of Industrial Designs. This System comprises two international treaties: the Hague Act of 1960 and the Geneva Act of 1999. The Hague System makes it possible for an applicant to register up to 100 industrial designs in multiple jurisdictions by filing a single application with the International Bureau of WIPO. It simplifies multinational registration by reducing the requirement to file separate applications with each IP office. The System also simplifies the subsequent management of the industrial design, since it is possible to record changes or renew a registration through a single procedural step.

Industrial design

Industrial designs are applied to a wide variety of industrial products and handicrafts. They refer to the ornamental or aesthetic aspects of a useful article, including compositions of lines or colors or any three-dimensional forms that give a special appearance to a product or handicraft. The holder of a registered industrial design has exclusive rights against unauthor-

ized copying or imitation of the design by third parties. Industrial design registrations are valid for a limited period. The term of protection is usually 15 years in most jurisdictions. However, differences in legislation exist, notably in China (which provides for a 10-year term from the application date).

In force

Refers to IP rights that are currently valid or, in the case of trademarks, active. To remain in force, IP protection must be maintained.

Intellectual property (IP)

Refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images and designs used in commerce. IP is divided into two categories: industrial property – which includes patents, utility models, trademarks, industrial designs and geographical indications of source – and copyright, which includes literary and artistic works (such as novels, poems, plays, films), musical works, artistic works (such as drawings, paintings, photographs and sculptures) and architectural designs. Rights related to copyright include those of performing artists in their performances, those of producers of sound recordings in their recordings and those of broadcasters in their radio and television programs.

International Depositary Authority (IDA)

A scientific institution – typically a culture collection – capable of storing microorganisms that has acquired the status of an International Depositary Authority under the Budapest Treaty and provides for the receipt, acceptance and storage of microorganisms and the furnishing of samples thereof. Currently, 47 such authorities exist around the world.

International Patent Classification (IPC)

An internationally recognized patent classification system, the IPC has a hierarchical structure of language-independent symbols and is divided into sections, classes, sub-classes and groups. IPC symbols are assigned according to the technical features in patent applications. A patent application that relates to multiple technical features can be assigned several IPC symbols.

International Union for the Protection of New Varieties of Plants (UPOV)

An intergovernmental organization established by the International Convention for the Protection of New Varieties of Plants (the UPOV Convention), which was adopted on December 2, 1961. UPOV provides and promotes an effective system of plant variety protection aim at encouraging the development of new varieties of plants for the benefit of society.

Invention

A new solution to a technical problem. To qualify for patent protection, the invention must be novel, involve an inventive step and be industrially applicable, as judged by a person skilled in the art.

Lisbon System

The Lisbon System was established in 1958 to facilitate the international protection of appellations of origin through a single registration procedure. Registration with the WIPO International Bureau ensures protection in all Lisbon contracting parties, without need for renewal and for as long as the appellation of origin remains protected in its contracting party of origin. However, the decision on whether to protect a newly registered appellation of origin at the national level remains the prerogative of each contracting party, and each Lisbon member can refuse protection based on any ground within one year of being notified of a new appellation of origin by the WIPO International Bureau. The Lisbon System is flexible with regard to the means by which countries may provide protection for the registered appellation of origin (e.g., *sui generis* systems, trademark laws or specific ad hoc decrees, as well as judicial and administrative decisions).

Locarno Classification

The abbreviated form of the International Classification for Industrial Designs under the Locarno Agreement, used for registering industrial designs. The Locarno Classification consists of 32 classes and their respective subclasses with explanatory notes plus an alphabetical list of the goods in which industrial designs are incorporated and an indication of the classes and subclasses into which they fall.

Madrid international application

An application for international registration under the Madrid System, which is a request for protection of a trademark in one or more Madrid members' jurisdictions. An international application must be based on a basic mark, that is, prior application or registration of a mark in a Madrid member jurisdiction.

Madrid international registration

An application for international registration of a mark leads to its recording in the International Register and the publication of the international registration in the *WIPO Gazette of International Marks*. If the international registration is not refused protection by a designated Madrid member, it will have the same effect as a national or regional trademark registration made under the law applicable in that Madrid member's jurisdiction.

Madrid member (Contracting Party)

A state or intergovernmental organization – for example,

the African Intellectual Property Organization (OAPI) or the European Union (EU) – that is party to the Madrid Agreement and/or the Madrid Protocol.

Madrid route

The Madrid route (the Madrid System) is an alternative to the direct national or regional route (also called the Paris route).

Madrid System

An abbreviation describing two procedural treaties for the international registration of trademarks, namely, the Madrid Agreement Concerning the International Registration of Marks and the Protocol Relating to the Madrid Agreement. Following the decision by the Madrid Union Assembly in October 2016, the Protocol is the sole governing treaty of the Madrid System. The Madrid System is administered by the International Bureau of WIPO.

Maintenance

An act by the applicant to keep an IP grant/registration valid (in force), primarily by paying the required fee to the IP office of the state or jurisdiction providing protection. That fee is also known as a "maintenance fee." A trademark can be maintained indefinitely by paying renewal fees; however, patents, utility models and industrial designs can be maintained for only a limited number of years.

Microorganism deposit

The transmittal of a microorganism to an International Depositary Authority (IDA), which receives and accepts it, the storage of such a microorganism by the IDA, or both transmittal and storage.

National phase under the PCT

The phase that follows the international phase of the PCT procedure and that consists of the entry and processing of the international application in the individual countries or regions in which the applicant seeks protection for an invention.

National route

Applications for IP protection filed directly with the national office of, or acting for, the relevant state or jurisdiction (see also "Hague route," "Madrid route" and "PCT route"). The national route is also called the "direct route" or "Paris route."

Nice Classification

The abbreviated form of the International Classification of Goods and Services for the Purposes of Registering Marks, an international classification established under the Nice Agreement. The Nice Classification consists of 45 classes, which are divided into 34 classes for goods and 11 for services. (See "Class.")

Non-resident

For statistical purposes, a “non-resident” application refers to an application filed with the IP office of, or acting for, a state or jurisdiction in which the first named applicant in the application is not domiciled. For example, an application filed with the Japan Patent Office (JPO) by an applicant residing in France is considered to be a non-resident application from the perspective of the JPO. Non-resident applications are sometimes referred to as foreign applications. A non-resident grant or registration is an IP right issued on the basis of a non-resident application.

Origin (country or region)

For statistical purposes, the origin of an application means the country or territory of residence of the first named applicant in the application. In some cases (notably in the U.S.), the country of origin is determined by the residence of the assignee rather than that of the applicant.

Paris Convention

The Paris Convention for the Protection of Industrial Property, signed on March 20, 1883, is one of the most important treaties, as it establishes general principles applicable to all IP rights. It establishes the “right of priority” enabling an IP applicant, when filing an application in countries other than the original country of filing, to claim priority of an earlier application filed up to 12 months previously for patents and utility models, and up to six months previously for trademarks and industrial designs.

Paris route

An alternative to the Hague, Madrid or PCT routes, the Paris route (also called the “direct route” or “national route”) enables individual IP applications to be filed directly with an IP office of a country/territory that is a signatory to the Paris Convention.

Patent

A set of exclusive rights granted by law to applicants for inventions that are new, non-obvious and commercially applicable. A patent is valid for a limited period of time (generally 20 years), during which patent holders can commercially exploit their inventions on an exclusive basis. In return, applicants are obliged to disclose their inventions to the public in a manner that enables others skilled in the art to replicate the invention. The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, thus enabling them to appropriate the returns from their innovative activity.

Patent Cooperation Treaty (PCT)

An international treaty administered by WIPO, the PCT allows applicants to seek patent protection for an inven-

tion simultaneously in a large number of countries (PCT contracting states) by filing a single PCT international application. The granting of patents, which remains under the control of national or regional patent offices, is carried out in what is called the “national phase under the PCT.”

Patent family

Applicants often file patent applications in multiple jurisdictions, so some inventions are recorded more than once. To take this into account, WIPO has indicators related to patent families, defined as patent applications interlinked by one or more of: priority claim, Patent Cooperation Treaty national phase entry, continuation, continuation-in-part, internal priority and addition or division. WIPO’s patent family definition includes only those associated with patent applications for inventions and excludes patent families associated with utility model applications.

PCT application

A patent application filed through the WIPO-administered PCT, also known as an international application.

PCT-patent prosecution highway (PCT-PPH) pilots

A number of bilateral agreements signed between patent offices that enable applicants to request an accelerated examination procedure, because of positive patentability findings made by the international searching and/or international preliminary examining authority, in the written opinion of an international searching authority, the written opinion of an international preliminary examining authority or the international preliminary report on patentability.

PCT route

The procedure outlined in the PCT, as opposed to the Paris route.

PCT System

The PCT, an international treaty administered by WIPO, facilitates the acquisition of patent rights in a large number of jurisdictions. The PCT System simplifies the process of multiple national patent filings by reducing the requirement to file a separate application in each jurisdiction. However, the decision on whether to grant patent rights remains in the hands of national and regional patent offices, and patent rights remain limited to the jurisdiction of the patent-granting authority. The PCT application process starts with the international phase, during which an international search and, possibly, a preliminary examination are performed, and concludes with the national phase, during which a national or regional patent office decides on the patentability of an invention according to national law.

Pending patent application

In general, this refers to a patent application filed with a patent office for which no patent has yet been either granted or refused, and for which the application has not been withdrawn. In jurisdictions where a request for examination is required to start the examination process, a pending application may refer to an application for which a request for examination has been received or one for which no patent has been granted or refused, and for which the application has not been withdrawn.

Plant Patent Act (PPA) of the U.S.

Under the law commonly known as the “Plant Patent Act,” whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state, may obtain a patent therefor.

Plant variety

According to the UPOV Convention, plant variety means a plant grouping within a single botanical taxon of the lowest known rank which, irrespective of whether the conditions for the granting of a breeder's right are fully met, can be defined by the expression of the characteristics resulting from a given genotype or combination of genotypes, distinguished from any other plant grouping by the expression of at least one of the said characteristics and considered as a unit with regard to its suitability for being propagated unchanged.

Plant variety grant

Under the UPOV Convention, the breeder's right is granted (title of protection is issued) only when the variety is new, distinct, uniform, stable and has a suitable denomination.

Plant Variety Protection Act (PVPA) of the U.S.

Under the PVPA, the U.S. protects all sexually reproduced plant varieties and tuber-propagated plant varieties, excluding fungi and bacteria.

Prior art

All information disclosed to the public about an invention, in any form, before a given date. Information on prior art can assist in determining whether the claimed invention is new and involves an inventive step (i.e., is non-obvious) for the purposes of international searches and international preliminary examination.

Priority date

The filing date of the application on the basis of which priority is claimed. (See “Paris Convention.”)

Publication date

The date on which an IP application is disclosed to

the public. On that date, the subject matter of the application becomes prior art.

Regional application/grant (registration)

An application filed with or granted (registered) by an IP office having regional jurisdiction over more than one country. There are currently seven regional offices: the African Intellectual Property Organization (OAPI), the African Regional Intellectual Property Organization (ARIPO), the Benelux Office for Intellectual Property (BOIP), the Eurasian Patent Organization (EAPO), the European Patent Office (EPO), the European Union Intellectual Property Office (EUIPO) and the Patent Office of the Cooperation Council for the Arab States of the Gulf (GCC Patent Office).

Registered Community Design

A registration issued by the EUIPO based on a single application filed directly with the office by an applicant seeking protection within the EU as a whole.

Registration

An exclusive set of rights legally accorded to the applicant when an industrial design or trademark is registered or issued. See “Industrial design” or “Trademark.” Registrations are issued to applicants to make use of and exploit their industrial designs or trademarks for a limited period of time and can, in some cases (particularly in the case of trademarks), be renewed indefinitely.

Renewal

The process by which the protection of an IP right is maintained (kept in force). This usually consists of paying renewal fees to an IP office at regular intervals. If renewal fees are not paid, the registration may lapse. See also “Maintenance.”

Resident

For statistical purposes, a resident application refers to an application filed with the IP office of, or acting for, the state or jurisdiction in which the first named applicant in the application has residence. For example, an application filed with the JPO by a resident of Japan is considered a resident application from the perspective of the JPO. Resident applications are sometimes referred to as “domestic applications.” A resident grant/registration is an IP right issued on the basis of a resident application.

Trademark

A sign used to distinguish the goods or services of one undertaking from those of others. A trademark may consist of words and combinations of words (for instance, names or slogans), logos, figures and images, letters, numbers, sounds, or, in rare instances, smells or moving images, or a combination thereof. The pro-

cedures for registering trademarks are governed by the legislation and procedures of national and regional IP offices and WIPO. Trademark rights are limited to the jurisdiction of the IP office that registers the trademark. Trademarks can be registered by filing an application at the relevant national or regional office(s), or by filing an international application through the Madrid System.

Utility model

A special form of patent right granted by a state or jurisdiction to an inventor or the inventor's assignee for a fixed period of time. The terms and conditions for granting a utility model are slightly different from those for normal patents (including a shorter term of protection and less stringent patentability requirements). The term can also describe what are known in certain countries as "petty patents," "short-term patents" or "innovation patents."

World Intellectual Property Organization (WIPO)

A United Nations specialized agency dedicated to the promotion of innovation and creativity for the economic, social and cultural development of all countries through a balanced and effective international IP system. WIPO was established in 1967 with a mandate to promote the protection of IP throughout the world through cooperation between states and in collaboration with other international organizations.

Abbreviations

ARIPO	African Regional Intellectual Property Organization
BOIP	Benelux Office for Intellectual Property
CNIPA	National Intellectual Property Administration of the People's Republic of China
CPVO	Community Plant Variety Office of the European Union
EAPO	Eurasian Patent Organization
EPO	European Patent Office
EU	European Union
EUIPO	European Union Intellectual Property Office
GCC Patent Office	Patent Office of the Cooperation Council for the Arab States of the Gulf
GDP	gross domestic product
GI	geographical indication
IDA	International Depositary Authority
IP	intellectual property
IPA	International Publishers Association
IPC	International Patent Classification
JPO	Japan Patent Office
KIPO	Korean Intellectual Property Office
NPA	national publishers' association
OAPI	African Intellectual Property Organization
PCT	Patent Cooperation Treaty
PPA	Plant Patent Act of the United States of America
PVPA	Plant Variety Protection Act of the United States of America
R&D	research and development
U.K.	United Kingdom
UM	utility model
UN	United Nations
UPOV	International Union for the Protection of New Varieties of Plants
U.S.	United States of America
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization

Annexes

Annex A. Definitions for selected energy-related technology fields

Energy-related technologies	International patent classification (IPC) symbols
Solar energy technology	E04D 1/30, E04D 13/18, F24J 2/00, F24J 2/02, F24J 2/04, F24J 2/05, F24J 2/06, F24J 2/07, F24J 2/08, F24J 2/10, F24J 2/12, F24J 2/13, F24J 2/14, F24J 2/15, F24J 2/16, F24J 2/18, F24J 2/23, F24J 2/24, F24J 2/36, F24J 2/38, F24J 2/42, F24J 2/46, F03G 6/06, G02B 5/10, H01L 31/052, H01L 31/04, H01L 31/042, H01L 31/18, G02F 1/136, G05F 1/67, H01L 25/00, H01L 31/00, H01L 31/048, H01L 33/00, H02J 7/35, H02N 6/00
Fuel cell technology	H01M 4/00, H01M 4/86, H01M 4/88, H01M 4/90, H01M 8/00, H01M 8/02, H01M 8/04, H01M 8/06, H01M 8/08, H01M 8/10, H01M 8/12, H01M 8/14, H01M 8/16, H01M 8/18, H01M 8/20, H01M 8/22, H01M 8/24
Wind energy	F03D 1/00, F03D 3/00, F03D 5/00, F03D 7/00, F03D 9/00, F03D 11/00, B60L 8/00
Geothermal energy	F24J 3/08, F03G 4/00, F03G 7/00

Note: For definitions of IPC symbols, see www.wipo.int/classifications/ipc. The correspondence between IPC symbols and technology fields is not always clear-cut, therefore it is difficult to capture all patents in a specific technology field. Nonetheless, the IPC-based definitions of the four technologies presented above are likely to capture the vast majority of related patents.

Source: WIPO.

Annex B. Composition of industry sectors by Nice goods and services classes

Industry sector	Abbreviation (where applicable)	Nice classes
Agricultural products and services	Agriculture	29, 30, 31, 32, 33, 43
Management, communications, real estate and financial services	Business services	35, 36
Chemicals	..	1, 2, 4
Textiles – clothing and accessories	Clothing and accessories	14, 18, 22, 23, 24, 25, 26, 27, 34
Construction, infrastructure	Construction	6, 17, 19, 37, 40
Pharmaceuticals, health, cosmetics	Health	3, 5, 10, 44
Household equipment	..	8, 11, 20, 21
Leisure, education, training	Leisure & Education	13, 15, 16, 28, 41
Scientific research, information and communication technology	Research & Technology	9, 38, 42, 45
Transportation and logistics	Transportation	7, 12, 39

Source: Edital®.

Annex C. Industry sectors by Locarno classes

Sector	Locarno classes
Advertising	20, 32
Agricultural products and food preparation	1, 27, 31
Construction	23, 25, 29
Electricity and lighting	13, 26
Furniture and household goods	6, 7, 30
Health, pharma and cosmetics	24, 28
ICT and audiovisual	14, 16, 18
Leisure and education	17, 19, 21, 22
Packaging	9
Textiles and accessories	2, 3, 5, 11
Tools and machines	4, 8, 10, 15
Transport	12

Source: Organisation for Economic Co-operation and Development (OECD).