

IP5 Statistics Report 2022 Edition



five IP offices

European Patent Office /// Japan Patent Office ///
Korean Intellectual Property Office ///
National Intellectual Property Administration, PRC ///
United States Patent and Trademark Office

IP5 Statistics Report

2022 Edition



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European Patent Office,
Japan Patent Office,
Korean Intellectual Property Office,
China National Intellectual Property Administration,
United States Patent and Trademark Office

Edited by
USPTO, November 2023

IP5 Statistics Report 2022 Edition

Direct access to main chapters of the report:

[Executive Summary](#)

[Preface](#)

[Table of contents](#)

[Chapter 1: Introduction](#)

[Chapter 2: The IP5 Offices](#)

[Chapter 3: Worldwide patenting activity](#)

[Chapter 4: Patent activity at the IP5 Offices](#)

[Chapter 5: The IP5 Offices and the Patent Cooperation Treaty \(PCT\)](#)

[Chapter 6: Other work](#)

[Annex 1: Definitions of the IP5 Offices expenditures](#)

[Annex 2: Definitions of terms and statistics on procedures](#)

[Annex 3: Acronyms](#)



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Executive Summary

The IP5 Statistics Report (IP5 SR) is an annual compilation of patent statistics for the five largest intellectual property (IP) offices – the IP5 Offices – namely the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the China National Intellectual Property Administration (CNIPA) and the United States Patent and Trademark Office (USPTO).

Worldwide patenting activity until 2021¹:

- At the end of 2021, 16.4 million patents were in force in the world (+4.0 percent). 91 percent of these patents were in force in one of the IP5 Offices' jurisdictions.
- In 2021, 3.4 million patent applications were filed worldwide, either as direct national, direct regional or international phase Patent Cooperation Treaty (PCT) applications, of which 93 percent originated from the IP5 regions (IP5 Blocs).
- In 2021, 77 percent of the worldwide patent applications were filed as direct national applications. The proportion of applications filed via the PCT increased by 1 percentage point.

IP5 Offices patenting activities in 2022:

- In 2022, 2.9 million patent applications were filed at the IP5 Offices (+1.4 percent).
- Together the IP5 Offices granted more than 1.5 million patents in 2022 (+5 percent).
- In 2022, the main developments at the IP5 Offices were:
 - Annual IP5 high-level events: From June 6th through June 10th, the EPO hosted the meeting of the IP5 Heads of Office as a virtual meeting. The IP5 Heads recalled the essence of the IP5 vision, namely to create a more transparent, more predictable, and more accessible patent process, and drew attention to some of the major achievements of the past decade such as the Global Dossier, the Common Citation Document, and the IP5 Patent Prosecution Highway. They further noted that, despite working virtually for the previous two years, notable momentum in the activities of the IP5 Cooperation continued throughout the various projects and activities, such as the IP5 New Emerging Technologies and Artificial Intelligence (NET/AI) roadmap and the IP5 Patent Harmonization Expert Panel (PHEP). The EPO reported on the launch of a new global alerting service under the Global Dossier initiative. To celebrate 10 years of the IP5 Offices and IP5 Industry partnership, the IP5 Heads recommitted themselves to further promote regular exchanges with the IP5 Industry, as well as optimize communication between the IP5 Offices and the IP5 industry, to ensure that the partnership remains strong, efficient, and productive.
 - At the IP5 Offices in 2022, the applications increased by 3 percent at the EPO, by 2 percent at the CNIPA, and by less than 1 percent at the JPO, the KIPO, and the USPTO. The data showed annual growth of 1 percent for overall applications at the IP5 Offices (See Chapters 2 and 4 of this report).

¹ The most recent worldwide data available (see Chapter 3).

- EPO: The EPO saw a further increase in patent applications. Important steps were taken to become a truly modern and sustainable IP Office. An artificial intelligence (AI)-based reclassification tool was implemented; MyEPO Portfolio, a web-based online service offering a simplified approach to procedural submissions and a new Central Fee Payment platform were launched.
- JPO: The JPO has been aiming to achieve the “world’s fastest and utmost quality patent examinations”, and implementing various measures focused on “maintaining speed”, “granting high quality rights.” In 2022, the JPO received 289,530 patent applications, and the total pendency and the first action pendency were 14.9 and 10.1 months on average, respectively. Furthermore, in 2022, first action pendency from request for accelerated examination was 2.3 months on average.
- KIPO: The annual average first office action pendency period was 14.4 months for patents and utility models. KIPO received a preliminary total of 556,436 applications filing for patents, utility models, industrial designs, and trademarks in 2022. The number of PCT applications filed from Korea increased by 6.8 percent from 20,528 in 2021 to 21,916 in 2022. The Korean language is also the 4th most commonly used language as an official PCT publication language.
- CNIPA: In 2022, a total of 798 thousand invention patents were granted. The average pendency for the examination of high-value invention patent applications was reduced to 13.0 months, and the average pendency for the examination of invention patents was reduced to 16.5 months.
- USPTO: In 2022, the USPTO welcomed Kathi Vidal as the new Under Secretary of Commerce for Intellectual Property and agency director. As part of the USPTO’s efforts to incentivize innovation, Director Vidal announced a new Climate Change Mitigation Pilot Program, in which utility patent applications involving technologies that mitigate climate change will be accelerated until a First Action on the Merits (FAOM). The USPTO also launched new Patent Public Search tool that provides more convenient, remote, and robust full-text searching of all U.S. patents and published patent applications.

Preface

The IP5 Statistics Report (IP5 SR) is jointly produced by the “IP5 Offices,” which consist of the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the China National Intellectual Property Administration (CNIPA), and the United States Patent and Trademark Office (USPTO), along with the support of the International Bureau (IB) of the World Intellectual Property Organization (WIPO). It follows on from a provisional Key IP5 statistical indicators report published in springtime. The latest reports, along with other data exchanges and information about the IP5 Offices, can be found at www.fiveipoffices.org.

Political and economic conditions as well as technological factors influence the levels of patent filings which in turn contribute to economic growth. There is a worldwide tendency to harmonize patent laws with common international standards and to facilitate filing of applications across borders. Common vehicles to ease patent prosecution across different jurisdictions such as the PCT, validation agreements and the Patent Prosecution Highway (PPH) have had a positive impact on worldwide patent growth over recent years.

While applications are user driven, grants show the production capacity of the offices. The IP5 Offices hope that this report provides useful information to the readers. The IP5 Offices will continue to improve and refine the report to better serve user needs. Definitions related to the terminology used in the report are given in Annexes 1 and 2.

When reading this report, please bear in mind that the procedures and practices among the IP5 Offices differ in many aspects. Therefore, caution should be applied when analysing, interpreting and especially comparing the various statistics.

Materials from this report can be freely reproduced in other publications, but the IP5 Offices request that this should be accompanied by a reference to the title and the website location of this report. Please note the links to the statistics available at each Office:

www.fiveipoffices.org/resources/annualreports

For users wishing to explore the patent statistics in detail there is a set of statistical tables accompanying this report that show extended time series and graphs for most of the data available in this report and a glossary of patent related terms.

EPO, JPO, KIPO, CNIPA, and USPTO
With the cooperation of WIPO

Table of Contents

<u>Chapter 1: Introduction</u>	1
<u>Chapter 2: The IP5 Offices</u>	5
<u>Patents in force</u>	5
<u>IP5 Cross filings</u>	7
<u>European Patent Office</u>	9
<u>Japan Patent Office</u>	16
<u>Korean Intellectual Property Office</u>	21
<u>China National Intellectual Property Administration</u>	27
<u>United States Patent and Trademark Office</u>	31
<u>Chapter 3: Worldwide Patenting Activity</u>	36
<u>Patent filings</u>	39
<u>First filings</u>	41
<u>Patent applications</u>	42
<u>Demand for National patent rights</u>	44
<u>Granted patents</u>	46
<u>Inter-bloc activity</u>	48
<u>Patent families</u>	50
<u>Chapter 4: Patent activity at the IP5 Offices</u>	56
<u>Patent applications filed</u>	57
<u>Origin</u>	57
<u>Sectors and fields of technology</u>	59
<u>Granted patents</u>	61
<u>Origin</u>	61
<u>Sectors and fields of technology</u>	63
<u>Maintenance</u>	66
<u>Patent examination procedures</u>	68
<u>Procedure flow chart</u>	68
<u>Statistics on the procedures</u>	69
<u>Chapter 5: The IP5 Offices and the Patent Cooperation Treaty (PCT)</u>	73
<u>PCT as filing route</u>	74
<u>PCT grants</u>	77
<u>Patent families and PCT</u>	78
<u>PCT authorities</u>	80
<u>Chapter 6: Other work</u>	82
<u>Annex 1: Definitions for IP5 Offices expenditures</u>	84
<u>Annex 2: Definitions of terms and statistics on procedures</u>	90
<u>Annex 3: Acronyms</u>	101

Tables

<u>Table 2.1 EPO Production information</u>	11
<u>Table 2.2 JPO Production information</u>	19
<u>Table 2.3 KIPO Production information</u>	25
<u>Table 2.4 CNIPA Production information</u>	29
<u>Table 2.5 USPTO Production information</u>	34
<u>Table 3 Numbers of patent families</u>	50
<u>Table 4.1 Applications filed - origin</u>	57
<u>Table 4.2 Granted patents - origin</u>	62
<u>Table 4.3 Statistics on procedures</u>	70
<u>Table 6 Statistics on other work</u>	82

Graphs

<u>Fig. 2. 1 Patents in force</u>	5
<u>Fig. 2. 2 Patent in force - jurisdiction & Origin</u>	6
<u>Fig. 2. 3 IP5 cross filing by bloc of origin</u>	7
<u>Fig. 2. 4 IP5 Cross filings – Offices involved</u>	8
<u>Fig. 2. 5 IP5 Cross filings – most frequent offices combinations</u>	8
<u>Fig. 2. 6 EPC member, extension and validation states</u>	9
<u>Fig. 2. 7 EPO expenses</u>	15
<u>Fig. 2. 8 JPO expenditures</u>	20
<u>Fig. 2. 9 KIPO expenditures</u>	26
<u>Fig. 2.10 CNIPA expenditures</u>	30
<u>Fig. 2.11 USPTO expenditures</u>	35
<u>Fig. 3. 1 Worldwide patent filings - filing procedures</u>	39
<u>Fig. 3. 2 Worldwide patent filings - origin</u>	40
<u>Fig. 3. 3 Worldwide patent filings - percentage filed at home</u>	40
<u>Fig. 3. 4 Worldwide patent first filings - origin</u>	41
<u>Fig. 3. 5 Worldwide patent applications - filing procedures</u>	42
<u>Fig. 3. 6 Worldwide patent applications - origin</u>	43
<u>Fig. 3. 7 Worldwide patent applications - filing bloc</u>	43
<u>Fig. 3. 8 Worldwide demand for patent rights - procedures</u>	44
<u>Fig. 3. 9 Worldwide demand for patent rights - origin</u>	45
<u>Fig. 3.10 Worldwide demand for patent rights - filing bloc</u>	45
<u>Fig. 3.11 Worldwide granted patents- origin</u>	46
<u>Fig. 3.12 Worldwide granted patents - filing bloc</u>	46
<u>Fig. 3.13 National patent rights granted - filing bloc</u>	47
<u>Fig. 3.14 Interbloc activity – applications</u>	48
<u>Fig. 3.15 Interbloc activity - first filings filed abroad</u>	51
<u>Fig. 3.16 Patent families percentage of first filings with subsequent filings in other IP5 Blocs</u>	53
<u>Fig. 3.17 IP5 patent families - origin</u>	55
<u>Fig. 4. 1 Applications filed - domestic and foreign origin</u>	57
<u>Fig. 4. 2 Applications filed - origin distribution</u>	58
<u>Fig. 4. 3 Applications filed - sector of technology</u>	59
<u>Fig. 4. 4 Distribution of applications filed by field of technology</u>	60
<u>Fig. 4. 5 Granted patents - domestic and foreign origin</u>	61
<u>Fig. 4. 6 Granted patents - origin distribution</u>	62
<u>Fig. 4. 7 Granted patents - sector of technology</u>	63
<u>Fig. 4. 8 Distribution of granted patents by field of technology</u>	64
<u>Fig. 4. 9 Granted patents - patentees distribution</u>	65
<u>Fig. 4.10 Granted patents - maintenance from filing date</u>	67
<u>Fig. 4.11 Patent examination procedures</u>	68
<u>Fig. 4.12 Offices process to first and final actions</u>	72
<u>Fig. 5. 1 Proportions of applications filed via the PCT - origin</u>	74
<u>Fig. 5. 2 Proportions of PCT entering national/regional phase</u>	75
<u>Fig. 5. 3 Proportions of PCT applications in the grant procedure</u>	76
<u>Fig. 5. 4 Proportions of PCT among granted patents</u>	77
<u>Fig. 5. 5 Proportions of PCT - patent families</u>	78
<u>Fig. 5. 6 Proportions of PCT in IP5 patent families - origin</u>	79
<u>Fig. 5. 7 PCT activity - receiving offices</u>	80
<u>Fig. 5. 8 PCT activity - international searching authorities</u>	81
<u>Fig. 5. 9 PCT activity - international preliminary examining authorities</u>	81

Chapter 1

INTRODUCTION

IP refers to a variety of mechanisms that have been established for protecting “creations of the mind”², including:

- Patents for invention
- Utility models
- Trade secrets
- Industrial designs
- Trademarks
- Geographic indications

to protect industrial innovations, and

- Copyrights

for literary and artistic creations.

This report focuses on industrial property rights and almost exclusively on patents for inventions³. It is notable that the patenting activity for inventions is recognized throughout the world as a useful indicator of innovative activity.

In order to obtain protection for their innovations, applicants for patents for invention may use the following types of granting procedures, or combinations of them:

- National procedures
- Regional procedures (for example, those created by the African, Eurasian, European and Gulf regional organizations)
- The PCT procedure

Each country and region maintains its own patent procedures in order to encourage innovative activities and to optimize the regional benefits of innovation. Enhanced international cooperation led to the establishment of different regional and international granting procedures. However, the patent laws vary from country to country. Similarly, the scope of an individual patent application can also differ depending on the applicable jurisdiction. These factors limit the degree to which patenting activity in different countries and regions can be compared directly.

The patent systems at the IP5 Offices are all based on the first-to-file principle and follow the Paris Convention. To a large extent, this drives the usage of the patent systems worldwide. A first patent application is usually filed with the domestic national authority in charge of granting the right to protect the invention, followed within a one year priority period by subsequent applications to expand protection to other countries.

Separate references are made to "direct" applications filed under national and regional procedures and "PCT" international phase applications, in order to distinguish the two

² See also, World Intellectual Property Organization, “What is Intellectual Property?”

www.wipo.int/about-ip/en/ and World Intellectual Property Indicators, www.wipo.int/publications/

³ Patents for invention are called utility patents in the case of the USPTO which are different from utility model patents as explained in Chapter 6.

subsets of applications handled by the patent offices. While applications filed under national procedures are handled by national authorities, regional applications are subject to a centralized procedure and usually fall under national (post grant) regulations only after grant. PCT applications are handled at first by the appointed offices during the international phase. Up to about 30 months after the first filing, the PCT applications enter the national/regional phase to be treated as national or regional applications according to the regulations of each designated office.

In this report, patenting activities are presented for the following six geographical blocs:

- The European Patent Convention (EPC) contracting states (EPC states in this report) corresponding to the territory of the states party to the EPC at the end of reporting year;
- Japan (Japan in this report);
- Republic of Korea (R. Korea in this report);
- People's Republic of China (P.R. China in this report);
- United States of America (U.S. in this report);
- The rest of the world (Others in this report).

The first five of these blocs are called the "IP5 Blocs." Throughout the report, the blocs are referred to as blocs of origin on the basis of the residence of the applicant or as filing blocs on the basis of the place where the patents are sought.

The contents of each chapter in this report are briefly described below. With the exception of some items presented in Chapter 6, the statistics relate to patents for invention.

Please refer to [Annex 2](#) for explanations of the statistical and procedural terms that are used.

Together with this report, there is an annex including a glossary of patent-related terms and a statistical table file that includes extended time series and graphs of most of the data found in this report⁴.

Chapter 2 - The IP5 Offices

A summary of the recent developments in each of the IP5 Offices is presented in Chapter 2. The terminologies for the budget items that appear are provided in Annex 1.

Chapter 3 - Worldwide Patenting Activity

An assessment of worldwide patent activity is presented in Chapter 3. This covers not only patenting activity at the IP5 Offices, but in the rest of the world as well.

The numbers of applications filed are presented in separate sections that use different definitions for counting. This provides a description of worldwide bloc-wise patenting activity for filings, first filings, applications, demands for national patent rights, grants and national patent rights granted. Next, a description of inter-bloc activity is presented, firstly in terms of the flows of applications between the IP5 Blocs, and then in terms of patent families⁵.

⁴ www.fiveipoffices.org/statistics

⁵ For a further discussion of patent families, see Chapter 3 and the term definitions in Annex 2.

The statistics are mainly derived from the WIPO Statistics Database⁶, that includes data from each country and region.

Chapter 4 – Patent Activity at the IP5 Offices

The substantive activities of the IP5 Offices are presented in Chapter 4. This gives statistics on patent application filings and grants at the offices, as well as some comparative data on operations. The statistics are derived from IP5 Offices' internal databases.

Firstly, statistics are given for requests for patents with the IP5 Offices, including domestic and foreign filing breakdowns. Then, statistics are provided displaying the breakdown of applications by sectors and fields of technology according to the International Patent Classification (IPC)⁷.

Then, the numbers of grant actions by the IP5 Offices are provided, broken down by the blocs of origin of the grants. The distributions of the numbers of grants per applicant are also included.

To illustrate the similarities as well as the differences in the granting procedures at the IP5 Offices, characteristics and statistics of the five patent granting procedures are given in the last part of the chapter.

Chapter 5 – The IP5 Offices and the Patent Cooperation Treaty (PCT)

In Chapter 5, the influence of the PCT on patenting activities is displayed through worldwide activities broken down by geographical blocs and IP5 Offices, particularly in terms of proportions of patent filings that use the PCT, proportions of PCTs from the international phase that subsequently enter the national/regional phase, the share of PCTs among applications, the share of PCTs among grants and the proportions of PCT usage within patent families. As with Chapter 3, statistics are derived primarily from the WIPO Statistics Database, that includes data collected from each country and region. Statistics are also included to describe the PCT related activities of the IP5 Offices including activities as Receiving Office (RO), International Searching Authority (ISA) and International Preliminary Examining Authority (IPEA).

Chapter 6 – Other Work

This chapter is dedicated to some other patenting activities that are not common to all of the IP5 Offices, as well as to work related to other types of industrial property rights. This supplements the information that is provided in the rest of the report.

Annex 1 – Definitions for IP5 Offices' expenditures

⁶ The data refer to general patent data as of April, of the year following the reporting period, and to PCT international phase application data as of May of the year following the reporting period,
www.wipo.int/ipstats/en/index.html

⁷ www.wipo.int/classifications/ipc/en/

This explains some terms that appear in Chapter 2.

Annex 2 – Definitions of terms and statistics on procedures

This gives more detailed information on the statistics that appear in the report, particularly for Table 4.3 in Chapter 4.

Annex 3 – Acronyms

This writes acronyms in full and in each case refers to the page of first occurrence of the acronym.

Chapter 2

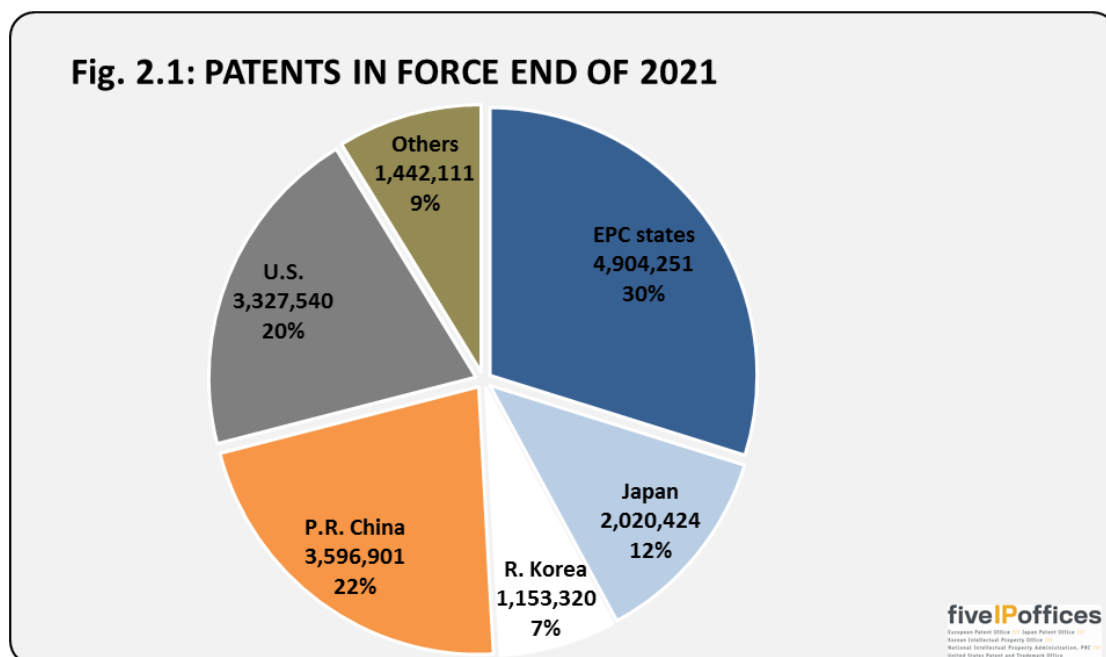
THE IP5 OFFICES

This chapter details developments at each of the IP5 offices⁸.

International trade and markets continue to be of great importance, such that innovators want their intellectual creations to be protected concurrently in multiple major markets.

PATENTS IN FORCE

Patents are used to protect inventions and their counts are recognized as a measure of innovative activity. Figure 2.1 shows the number of patents in force worldwide at the end of 2021. The data are based on worldwide patent information available from the WIPO Statistics Database⁹.

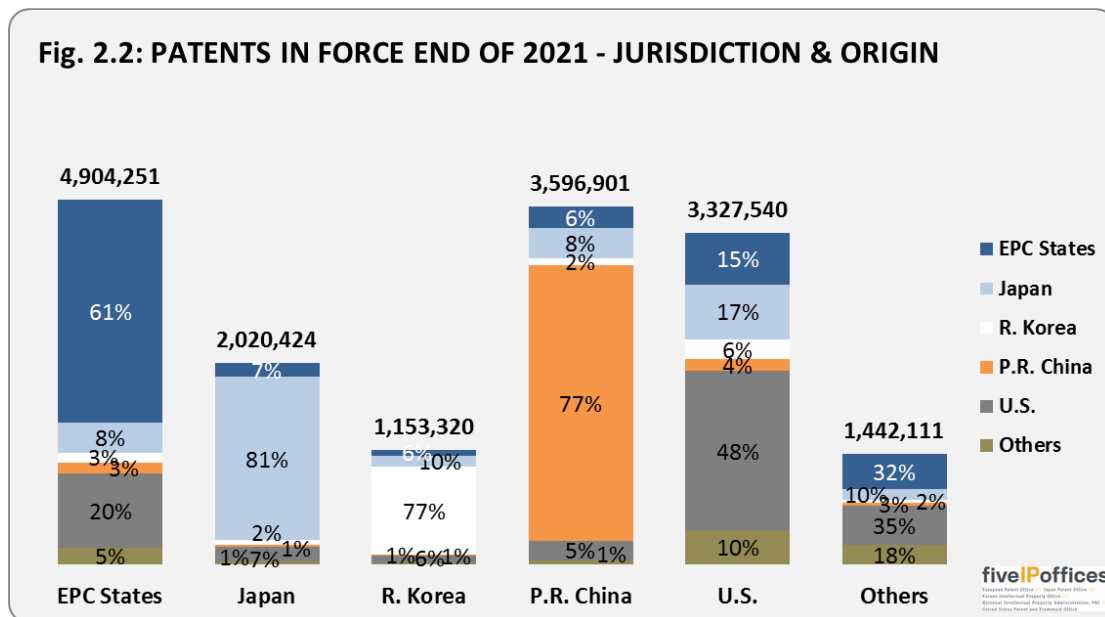


At the end of 2021, 91 percent of the 16.4 million patents that were in force were valid in one of the IP5 Offices jurisdictions. This demonstrates the prominent role that is played by the IP5 Offices.

⁸ The statistical tables file found in the web version of this report includes extended time series for some of the data included in this chapter. www.fiveipoffices.org/statistics/statisticsreports

⁹ www.wipo.int/ipstats/en/index.html Data for patents in force for 2021 are missing for some countries in the WIPO data. Where available, the most recent previous year's data were substituted for missing 2021 data. Data for 2022 are not yet available from WIPO.

Figure 2.2 shows the residence of the holders of the patents in force at the end of 2021 in the regions of the IP5 Offices.



At the end of 2021, out of the 16.4 million patents in force, 30 percent were valid in the EPC states, 22 percent in P.R. China, 20 percent in the U.S., 12 percent in Japan, and 7 percent in R. Korea.

In 2021, while 81 percent of the patents valid in Japan originated in Japan¹⁰, 48 percent of the U.S. patents had a U.S. origin. For EPC States, the corresponding shares was 61 percent, and 77 percent for both R. Korea and P.R. China.

¹⁰ Patent origin is based on the patent's first-named inventor or applicant.

IP5 CROSS FILINGS

As shown below, more and more first filings from the IP5 Offices result in subsequent patent applications to at least one other IP5 Office, accounting for over 500,000 applications including the resulting duplicates for the same inventions. To address the issue of the potentially resulting backlogs, the IP5 Offices are working together to try to reduce the amount of duplication of similar work that takes place between offices for such patent applications.

Figure 2.3 shows the development of the number of cross filings between the IP5 Offices filed over the period 2016 to 2020 according to the bloc of the corresponding first filing.

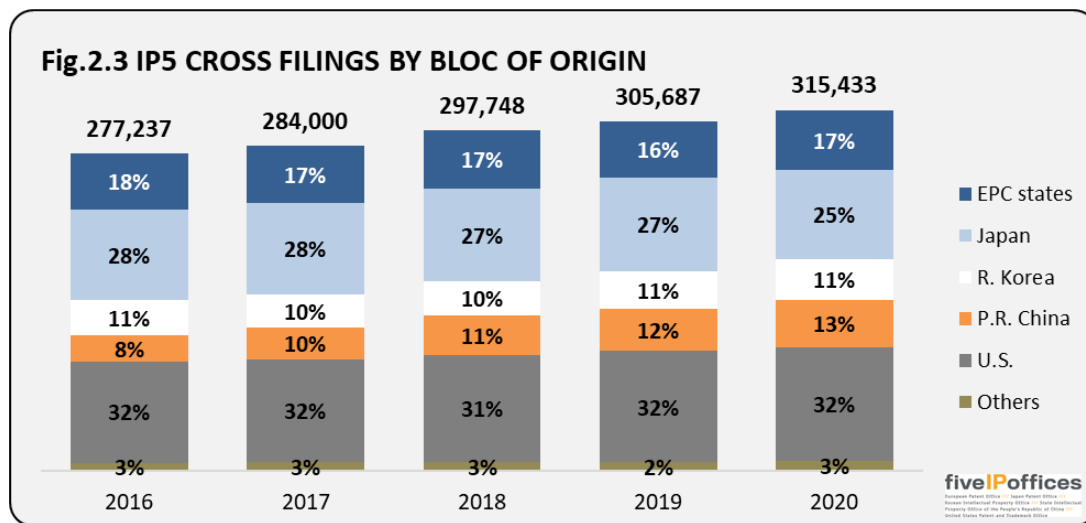
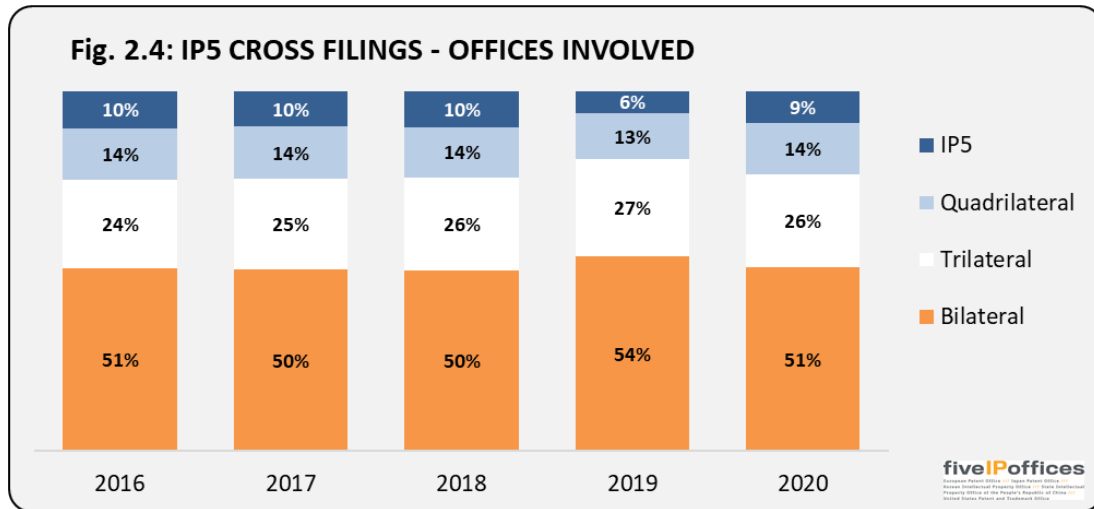


Figure 2.3 is based on published applications data allowing to track subsequent applications in other jurisdictions. As a consequence, data beyond 2020 are not yet complete.

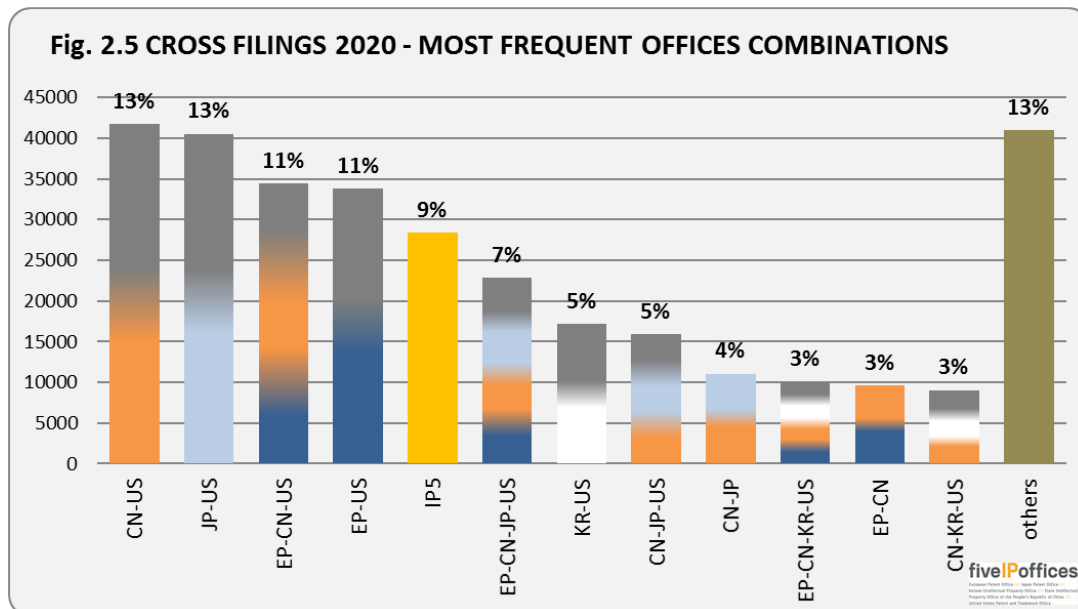
The number of cross filings among the IP5 Offices increased by 3 percent in 2020 (1 percent in 2019). Cross filings originating from P.R. China, R. Korea, the EPC States, and the U.S. increased 11 percent, 9 percent, 7 percent, and 3 percent, respectively, in 2020. At the same time, cross filings originating from Japan decreased by 6 percent.

Cross filings may be applications filed at 2 (*Bilateral*), 3 (*Trilateral*), 4 (*Quadrilateral*) or all 5 IP5 Offices (*IP5*). Fig 2.4 below shows the distribution of the cross filings according to the number of IP5 Offices involved.



In 2020, the share of IP5 and quadrilateral cross filings increased, while those of trilateral and bilateral decreased.

Figure 2.5 shows the distribution of the cross filings among the most frequent combinations. In 2020, 12 of the 26 combinations accounted for 87 percent of all cross filings. The leading four combinations, P.R. China-US (CN-US 13 percent), Japan-US (JP-US 13 percent), EPC States-P.R. China-US (EP-CN-US 11 percent), and EPO-U.S. (EP-US 11 percent), accounted for 48 percent of all cross filings in 2020 (49 percent in 2019).



EUROPEAN PATENT OFFICE

The EPO's mission is to deliver high-quality patents and efficient services that foster innovation, competitiveness and economic growth. Its main task is to grant European patents according to the EPC. Under the PCT, the EPO also acts as an RO, as well as a searching and examining authority. A further task is to perform, on behalf of the patent offices of several member states (in 2022: Albania, Austria, Belgium, Croatia, Cyprus, France, Greece, Italy, Latvia, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, San Marino and the United Kingdom), state-of-the-art searches for the purpose of national procedures. The EPO also plays a major role in the patent information area, by developing analytics tools and hosting the world's largest databases of patent literature.

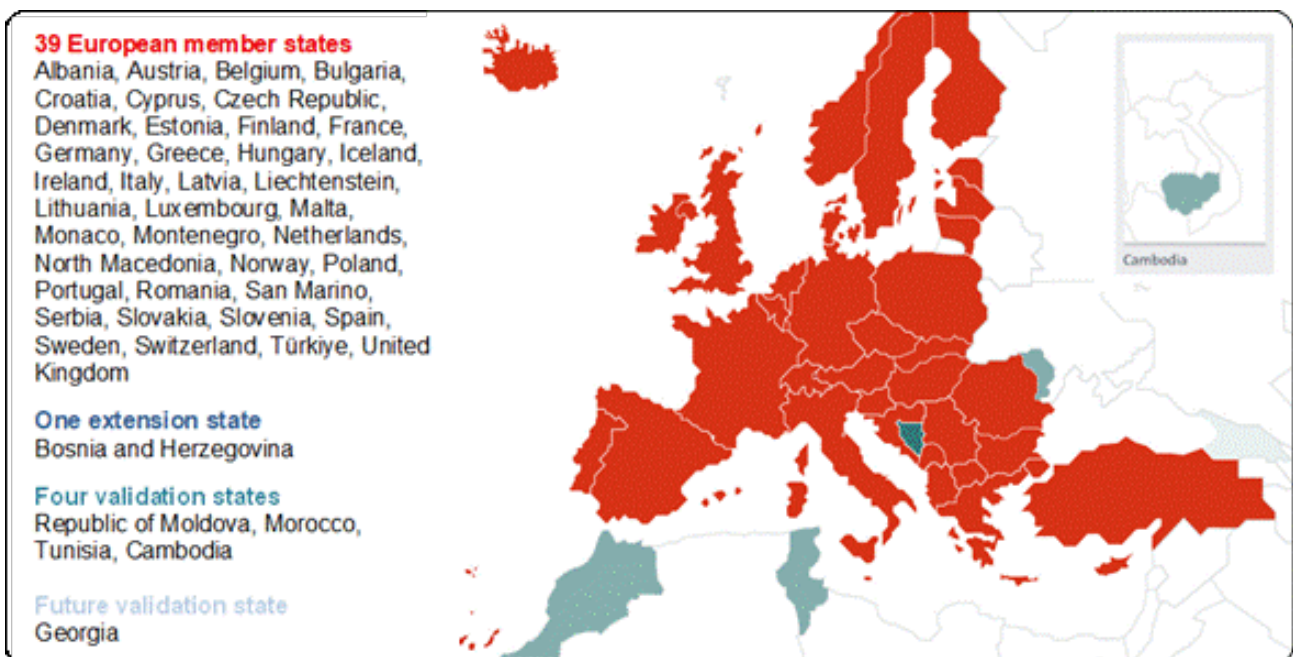
Member states

The EPO is the central patent granting authority for Europe, providing patent protection in up to 44 countries based on a single patent application and a centralised grant procedure (see Figure 2.6).

At the end of 2022, the 39 members of the EPO¹¹ were:

Albania	Austria	Belgium	Bulgaria	Croatia
Cyprus	Czech Republic	Denmark	Estonia	Finland
France	Germany	Greece	Hungary	Iceland
Ireland	Italy	Latvia	Liechtenstein	Lithuania
Luxembourg	Malta	North Macedonia	Monaco	Montenegro
Netherlands	Norway	Poland	Portugal	Romania
San Marino	Serbia	Slovakia	Slovenia	Spain
Sweden	Switzerland	Türkiye	United Kingdom	

Fig.2.6: EPC MEMBER, EXTENSION AND VALIDATION STATES



¹¹ Montenegro acceded to the European Patent Convention as 39th member state on October 1, 2022.

The national patent offices of all the above states also grant patents. After it has been granted by the EPO, a European patent becomes a bundle of national patents to be validated in the states that were designated at grant. The 44 countries for which European patents provide protection represent a population of over 700 million people.

Highlights of 2022

(A comprehensive review is available with the EPO [Annual Review 2022](#))

Demand for patents grew markedly further in 2022. The EPO received about 193,460 European patent applications last year, which was 2.5 percent above the 2021 figure.

In 2022, the EPO took several important steps towards becoming a truly modern and sustainable IP office. Rebuilding after the pandemic, the Office embraced new ways of working, pursued its major Information Technology (IT) transformation, and renewed its focus on patent quality. It also ramped up its environmental, organisational, financial and societal impact initiatives to maximise its positive impact on society.

Improvements in timeliness seen in recent years were consolidated in 2022. Search timeliness remained strong in 2022 even in the face of an increasing workload, resulting in more search reports issued compared to previous years. Mean search timeliness was 4.9 months and 89.3 percent of the searches were timely delivered. Dedicated actions were taken to improve timeliness for international PCT first filings. The mean time for issuing the intention to grant was 24.3 months from the valid examination request, while 79 percent of intentions to grant were issued within 36 months. The overall time to grant for first filings was 44.2 months on average, from filing to the intention to grant.

The EPO continued its digital transformation, releasing state-of-the-art tools and platforms and decommissioning obsolete solutions. A milestone was reached with the digitalisation of our backend patent granting process (PGP) through the implementation of the new digital file repository, allowing the decommissioning of the legacy digital archive tool. We also started to integrate digital exchanges with WIPO in our PGP process and ensured that our IT systems would be ready for the start of the Unitary Patent. Looking to improve our interactions with users, after a seven-month pilot phase involving over 180 external participants, we launched MyEPO Portfolio, a web-based online service offering a simplified approach to procedural submissions. Online services were further improved by introducing a new Central Fee Payment platform.

In 2022 the EPO implemented an AI-based reclassification tool. Following a field-specific learning phase based on a training set of intellectually classified documents it allows accurate automatic reclassification of families of documents. This tool was used to support the intellectual reclassification of 74,546 families.

The EPO's gross reported Greenhouse Gas (GHG) emissions show good progress towards our goal to achieve carbon neutrality by 2030 goal. The year 2022 closed with a historical low level of emissions below 4,000 t CO₂e, achieving an overall reduction of 14 percent compared to 2021. Building on previous years achievement, paper consumption was further reduced by 30 percent down to 17 million sheets. The EPO pro-actively promotes sustainable mobility. In 2022, the EPO expanded equipment to support staff sustainable mobility with additional e-bike charging stations and Electric vehicles (EV) chargers.

Unitary Patent

After several years, the Unitary Patent package implementation works have been underway and in 2022 reached the final stage. On January 18, 2022, Austria deposited its ratification instrument of the Protocol on Provisional Application of the Agreement on a Unified Patent Court (UPC), triggering the start of the provisional application phase and the final implementation phase of the Unitary Patent package. On November 17, 2022 a high-level curtain raiser conference on the Unitary Patent system took place in Brussels. The conference was attended by more than 1,000 participants. For more details, readers are referred to the area of the EPO website dedicated to [Unitary Patent & Unified Patent Court](#).¹²

EPO Production information

Activities associated with searches, examinations, oppositions, appeals and classifications are all performed by EPO staff. The EPO does not outsource any of its core activities. The decision to grant or refuse a patent is taken by a division of three examiners. In Table 2.1, production figures for filings, applications, searches, examinations, oppositions and appeals in the European procedure are given for the years 2021 and 2022.

Table 2.1: EPO PRODUCTION INFORMATION

EPO PRODUCTION FIGURES	2021	2022	Change	%Change
Patent applications (Euro-direct & Euro-PCT regional phase)	188,809	193,460	+ 4,651	+ 2.5%
Searches carried out				
European (including PCT supplementary)	121,471	132,384	+ 10,913	+ 9.0%
PCT international	82,666	86,036	+ 3,370	+ 4.1%
On behalf of national offices	27,945	29,128	+ 1,183	+ 4.2%
Total production search	232,082	247,548	+ 15,466	+ 6.7%
Examination-Opposition (final actions)				
European	121,537	106,277	- 15,310	- 12.6%
PCT Chapter II	5,186	5,359	+ 273	+ 3.3%
Oppositions	4,647	3,775	- 872	- 18.8%
Total final actions examination-opposition	131,370	115,361	6,009	- 12.2%
European granted patents	108,799	81,754	- 27,045	- 24.9%

Patent knowledge

An indispensable tool for IP professionals, the European Patent Register is the most complete and up-to-date source of publicly available procedural information on European patent applications as they pass through each stage of the granting process. In 2022, the Register saw several improvements, including downloadable sequence

¹² The package entered into force on June 1, 2023

listings and adaptations to reflect Montenegro's accession. In terms of post-grant information, Hungary has been integrated in the Federated Register service, which now covers 34 national offices. San Marino became the 38th state to connect its own national register via deep linking. In preparation for the launch of the Unitary Patent, a new Unitary Patent Register has been developed along with the technical implementations of all necessary data and associated tools and services.

The EPO's [Patent Index 2022](#) provides a comprehensive overview of the figures representing recent activity in the global patent system and insights into emerging technology trends. Users wishing to explore the statistics behind the Patent Index, customise their own graphs and download selected data, can do so by visiting the EPO's online [Statistics & Trends Centre](#).

Through the PATLIB 2.0 project, the EPO intends to promote the development of the patent information (PATLIB) centers, encouraging them to expand their knowledge and capabilities, particularly in technology transfer. By supporting the PATLIB centers in their endeavours, the Office provides a growing platform to enhance the effectiveness of the patent system and champions its commitment to enhancing the economic and societal value of patents.

With its Espacenet database, the EPO hosts the largest collection of patent literature in the world, which it makes available not only to examiners but also to inventors, researchers, and the general public. As part of its mission, the Office is fully committed to helping users and society benefit from the EPO's patent information products and services. An important element of this commitment is to facilitate targeted access to curated data of high social relevance. With this in mind, the Office introduced a new "Clean energy" platform into Espacenet, with datasets spanning three technology fields and more than 50 related search concepts. Similarly, the previously launched "Fighting coronavirus" platform was expanded to cover four technology fields and some 350 search concepts; it now also includes video interviews with leading scientists in vaccine research, diagnostics, and therapeutics.

The modernisation of the European Patent Academy marked important milestones, with the second online European Qualifying Examination (EQE) and the inaugural European Patent Administration Certification (EPAC) examination, which attracted 510 candidates from 33 countries. In 2022, the Academy set up 2,230 hours of training in patent granting, technology transfer and patent litigation, with a remarkable participation of 23,556 individuals. The eLearning center saw 17,359 additional regular user accounts, further expanding access to valuable training resources

International and European Cooperation

In a competitive environment, the strength of the European patent system is key to ensuring the region remains a globally attractive market with a robust IP rights system. Close co-operation between the EPO and its members is beneficial not only for maintaining a strong European market, but crucially provides a high-quality and accessible patent system for users. The EPO is growing, a sign of a thriving network and an endorsement of the quality of the European patent system and its long-term sustainability. In 2022 the EPO was delighted to welcome Montenegro as the 39th member state of the EPC. This means that as of October 1, 2022, European patent applications have included the designation of the new contracting state Montenegro. The EPO has now also taken over the functions of a PCT RO and acts as a PCT International Search and Examination Authority on behalf of Montenegro. In December 2022, the Administrative Council decided to extend an invitation to the Republic of

Moldova to accede to the EPC. It is expected that, in due course, Moldova will become a contracting state to the EPC.

For the EPO to maintain its position as a key player in IP, it must continuously – and sustainably – reinforce its global impact and the reach of its network. By the end of 2022, the Office operated a total of 85 international co-operation agreements, including four validation agreements and 12 reinforced partnership (RP) agreements. In addition to the 44 countries in which EPO patents can be validated, there are an additional 42 countries where, through an RP or PPH agreement, corresponding EPO search and examination results are re-used in the national or regional phase. The geographical coverage, which measures the total population reached by EPO products, grew to 2.12 billion, a 5 percent increase compared to the previous year (2.022 billion). This is almost a quarter of the world's population.

During 2022, Peru, Belgium, Monaco, Italy, and Luxembourg adopted the Cooperative Patent Classification (CPC) as their internal classification system, bringing the total to 37 offices. A new EPO-CNIPA CPC MoU and work plan were signed, and the Polish patent office started exchanging CPC data with the EPO. Having signed an agreement with the EPO the previous year, OMPIC began to put the classification system in place to its full extent. Moreover, intense discussions between EPO experts and their USPTO counterparts have led to harmonisation of classification practice between the EPO and USPTO in 258 CPC subclasses, which represents 40 percent of the entire CPC classification scheme. In addition, the EPO was actively involved in revision of both the CPC and IPC schemes in conjunction with our partners in the IP5 and IPC: 195 CPC revision projects were published and four releases of the CPC scheme took place in 2022. Our participation in IP5 and IPC revision activities resulted in 52 IPC revision and maintenance projects being adopted for the 2023 edition of the IPC scheme (IPC2023.01).

Economic studies

To demonstrate the value of patent information and the importance of IP rights, the EPO's Chief Economist Unit published four studies in 2022 exploring the economic impact of patents and the role of women inventors.

The EPO's joint study with the European Investment Bank (EIB), which was published in April 2022, investigates innovation and investment activity by European small and medium-sized enterprises (SMEs) in new technologies linked to the Fourth Industrial Revolution (4IR). The study finds that while the EU lags behind the US in 4IR-related deep tech activity, there are variations among EU countries, with finance availability and technical skills shortage being the main obstacles of SMEs for bringing new technology to market.

In June 2022, the EPO published the outcomes of the impact assessment of the potential introduction of a grace period. The study, based on an extensive survey of EPO applicants, complemented by user consultations and existing literature, provides fact-based evidence on the trade-off between the flexibility gains it may generate for applicants and the legal uncertainty experienced by third parties as a result of its use. The results shed light on the European patent system's functioning, aiding policy discussions on the international patent system's benefits for applicants and society.

In collaboration with the European Union Intellectual Property Office (EUIPO), another EPO study identifies which industries make above-average use of IP rights in the EU and examines the economic impact of such IPR-intensive industries. This fourth edition, which was published in October 2022, covers various IP rights (patents,

trademarks, designs, copyright, geographical indications and plant varieties) and their utilization across industries, quantifying their contributions to key macroeconomic variables such as GDP, employment, wages, and trade, providing valuable evidence for policymakers.

The fourth study analyses women's involvement in patenting at the EPO from 1978 to 2019, focusing on different countries, time periods, technology fields, and patent applicant profiles. Utilizing inventor data and gender attribution based on names, the analysis shows that the share of women inventors in various patenting activities is still low, but on a positive trend.

All of these studies can be consulted online on the [EPO website](#).

EPO budget

The EPO is a self-financed organisation with a yearly budget of about EUR 2.7B for 2022.

Revenues are mainly generated from patent and procedural fees comprising

- fees for patent-granting, opposition and appeal procedures
- fees for searches and preliminary examinations on international applications
- national renewal fees for granted European patents¹³
- fees for searches for national offices and third parties

The EPO foresees biannual inflation-based fee adjustment.

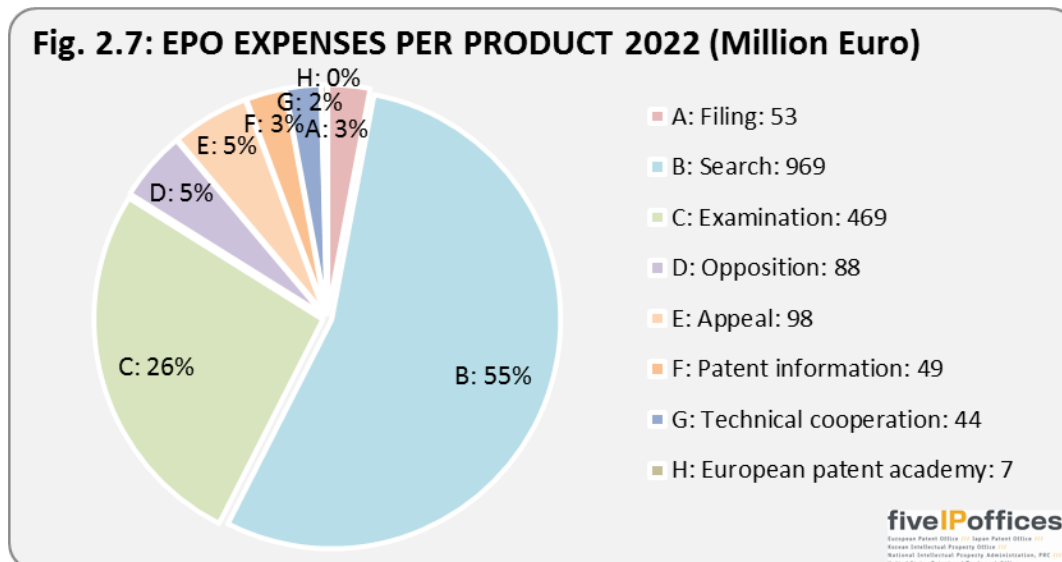
The EPO is financing all operational and capital expenditures without subsidies from its member states. A large part of the budget is foreseen for direct staff expenditures (salaries, allowances, etc.), the running cost of the EPO's own social security schemes, IT and building cost as well as for cooperation with member states. Any budget surplus is transferred to the one of the EPO's investment entities to support long-term sustainability.

The [EPO's budget](#) is available in full on our website.

Figure 2.7 shows EPO expenses¹⁴, based on the International Finance Reporting Standards (IFRS) per product in 2022.

¹³ After a European patent has been granted, renewal fees for subsequent years during its term are payable to the designated Contracting States. Each Contracting State pays to the EPO, for each European patent maintained in that state, a proportion of its national renewal fee fixed by the Administrative Council (50 percent since 1984).

¹⁴ The EPO uses the word "expenses" in accordance with the IFRS reporting approach.



A description of the items in Figure 2.7 can be found in [Annex 1](#).

EPO Staff

At the end of 2022, the EPO's staff totaled 6,298 employees (+1 percent) from 34 different European countries¹⁵, 35 percent of the employees and 27 percent of the managers were women. Total staff includes 3,981 examiners working in search, examination, and opposition and 189 Boards of Appeal members.

In 2022, 229 staff were recruited of which 77 examiners.

After their recruitment, all new examiners complete a three-year training program and are tutored by more experienced colleagues. All staff at the EPO work in its three official languages: English, German, and French.

More information

Further information can be found on the EPO's Homepage. www.epo.org

¹⁵ For more details, see the [2022 EPO social report](#)

JAPAN PATENT OFFICE

Highlights of 2022

1) Examination Performance

The JPO has been aiming to achieve the “world’s fastest and utmost quality patent examinations”. To this end, the JPO has been implementing various measures focused on “maintaining speed”, “granting high quality rights”, and “cooperating and collaborating with foreign IP offices”.

With the acceleration of the IP creation cycle, comprised of IP creation, the establishment of rights, and utilization of rights, there is a growing need to shorten total pendency, and the JPO has been engaging in initiatives to speed up examinations. In 2022, First Action Pendency¹⁶ and Total Pendency for Patent Examinations¹⁷ were 10.1 months and 14.9 months on average.

2) Accelerated Examination System

Under certain conditions, the JPO offers an accelerated examination system/super-accelerated examination system that, upon the request of an applicant, expedites the commencement of an examination. The accelerated examination system for patent applications may be applied for applications that are also filed in one or more other countries and applications by small and medium-sized enterprises, etc. In 2022, first action pendency from request for accelerated examination was 2.3 months on average.

The JPO is running pilot programs for a super-accelerated examination system for applications of higher importance including the applications for inventions that have already been put into practice and are filed in one or more other countries.

First action is issued within one month from the request, in principle (within two months, in principle, in the case of designated office (DO) applications).

In 2022, there were 1,241 requests, and first action pendency from request for super-accelerated examination was 0.6 months on average (1.4 months for DO applications).

3) Revision of Examination Guidelines and Handbook

The JPO introduced the restriction of Multi-Multi Claims on April 1, 2022 for the purpose of promoting international harmonization as well as reducing the workload of examination and the burden of monitoring by third parties. Accordingly, in March 2022, the “Examination Guidelines for Patent and Utility Model”¹⁸ was revised to mention the Multi-Multi Claim restriction, and necessary amendments were made to the relevant sections of the “Examination Handbook for Patent and Utility Model” sections of the “Examination Handbook for Patent and Utility Model”¹⁹. In addition, the JPO provides

¹⁶ The first action pendency is the period from the date of examination request until the JPO sends the first notice of examination results to the applicant, etc. (for the most part, either a notice of patent grant or a notice of reasons for refusal).

¹⁷ The total pendency (also called the “standard pendency”) is the period from the date of examination request to withdrawal or abandonment or until a final disposition (excluding cases where the JPO requests an applicant to respond to the second notice of reasons for refusal due to the amendments submitted by the applicant, and where the applicant performs procedures they are allowed to use, such as requests to the JPO for extension of the period of response and for an accelerated examination).

¹⁸ https://www.jpo.go.jp/e/system/laws/rule/guideline/patent/tukujitu_kijun/index.html

¹⁹ https://www.jpo.go.jp/e/system/laws/rule/guideline/patent/handbook_shinsa/index.html

a Multi-Multi Claim detection tool on its website²⁰ to enable applicants and patent agents to more appropriately comply with the restriction of Multi-Multi Claims.

4) Green Transformation Technologies Inventory (GXTI)

Many countries, including Japan, have set ambitious goals to achieve carbon neutrality by 2050 in order to address the issue of climate change. To achieve this goal, it is essential to promote innovation related to climate change technologies, as well as to accelerate green transformation (GX). The patent system can help promote GX by incentivizing inventors and companies with effective patent protection, and by providing access to patent information on matters including trends in climate change technologies.

In an effort to support the understanding of trends in patent applications for GX-related technologies and also foster green innovation, the JPO published the GXTI²¹ in June 2022, which classifies technologies that are expected to have an effect on greenhouse gas reduction. The GXTI provides the patent search formulae prepared by the JPO's patent examiners, which consist of IPC or a combination of IPCs and keywords, for the purpose of analyzing global patent trends that correspond to individual technological categories.

Patent information analysis using the GXTI enables the following:

- Companies can illustrate the strengths and weaknesses of their GX-related technologies, and formulate their research and development R&D strategy accordingly
- Companies can objectively explain to investors the superiority of their R&D capabilities with respect to GX-related technologies
- Governments can foster GX initiatives on an evidence-driven basis

The GXTI is utilized as a common measure for patent information analysis in the fields of GX-related technologies. In addition, the JPO conducted a survey in 2022 using the GXTI to analyze patent filing trends based on individual GXTI categories. The final report was published in May 2023, and is available on the JPO's website in both Japanese²² and English²³.

5) Law Amendments on Patent Act

a. Revision of Service by Publication to Adapt to the Impacts of COVID-19, etc.

To enable service by publication in cases where international mail acceptance is suspended due to COVID-19 or other international circumstances and items cannot be sent by registered air mail, etc. to the country concerned for a prolonged period, the requirements of service by publication should be revised and service by publication should be possible by publishing on the Internet.

b. Development of Regulations for Online Submission of the Priority Certificate

Regarding the procedure for submitting priority certificates, which requires the submission of the original in writing, the law should be revised to improve user convenience by allowing a copy of the priority certificate to be submitted and enabling its submission online

²⁰ <https://www.jpo.go.jp/e/system/patent/shinsa/multimulticlaims.html>

²¹ <https://www.jpo.go.jp/e/resources/statistics/gxti.html>

²² https://www.jpo.go.jp/resources/statistics/gxti/tokkyo-joho-bunseki_houkokusho-youyaku.pdf

²³ https://www.jpo.go.jp/e/resources/statistics/gxti/report-results_patent-analysis.pdf

c. Introduction of Restricted Access to the Award System

Among the award-related documents, access should be restricted to documents for which the party concerned, etc. have given notice that trade secrets are contained therein.

6) Dissemination of information on JPO's measures to overseas users

The JPO disseminates information to overseas users regarding matters such as the JPO's measures that are available to overseas users and latest statistics. Through such dissemination of information, the JPO supports overseas users in filing applications with the JPO and smoothly obtaining rights in Japan, and it promotes their understanding of the JPO's activities.

- In 2022, “The JPO Quick Reads”²⁴ was published 50 times, through which the JPO disseminated information focusing on measures available to foreign users, such as the JPO's attachés in various countries, the JPO's international cooperation that contributes to global registration of rights, and reports on international meetings.
- The JPO enhanced the content provided on “The JPO Key Features”.²⁵ It contains information on a range of measures related to patent, design, trademark, and trial and appeal.
- The JPO enhanced the content of materials that introduce the JPO's measures to overseas users and published the materials on its website.²⁶
- The JPO website published successful cases of foreign companies which are conducting business by acquiring patent rights in Japan.²⁷
- In 2022, the JPO exchanged opinions with 31 foreign companies, aimed at deepening their understanding of Japan's IP rights systems and examination practices and grasping what foreign companies demand of the JPO. It established a website for companies to apply for opinion exchanges with the JPO.²⁸ In addition, the JPO began offering information from its official LinkedIn account²⁹ in January 2023.
- The JPO offered information using its official English-language Twitter account to reach a broad range of overseas users.³⁰
- The JPO provided updates of its measures to overseas users at international symposiums and seminars.

²⁴ www.jpo.go.jp/e/news/quickreads/index.html

²⁵ www.jpo.go.jp/e/news/keyfeatures/index.html

²⁶ www.jpo.go.jp/e/resources/report/sonota-info/presentation-material.html

²⁷ www.jpo.go.jp/e/news/kokusai/successful-cases/index.html

²⁸ www.jpo.go.jp/e/support/general/opinion-exchange.html

²⁹ jp.linkedin.com/company/japan-patent-office

³⁰ twitter.com/JPO_JPN/

JPO Production information

Table 2.2 shows production figures for applications, examinations, grants, appeals or trials and PCT activities in the Japanese procedure in 2021 and 2022.

Table 2.2: JPO PRODUCTION INFORMATION

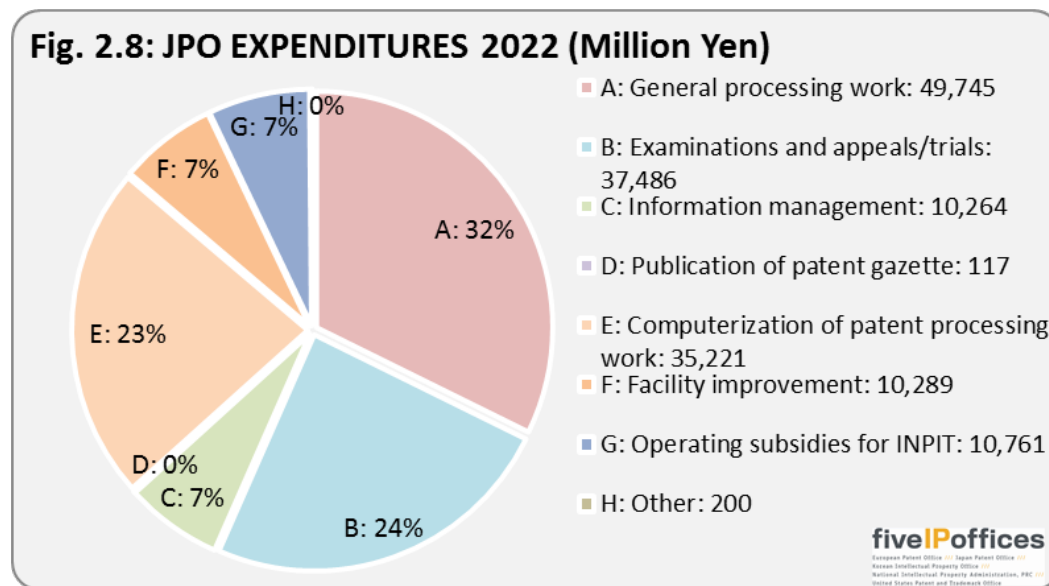
JPO PRODUCTION FIGURES	2021	2022	Change	%Change
Applications filed (by Origin of Application)				
Domestic	222,452	218,813	- 3,639	- 1.6%
Foreign	66,748	70,717	+ 3969	+ 5.9%
Total	289,200	289,530	+ 330	+ 0.1%
Applications filed (by Type of Application)				
Divisional ³¹	29,319	33,528	+ 4,209	+ 14.4%
Converted ³²	66	47	- 19	- 28.8%
Regular	259,815	255,955	- 3,860	+ 1.5%
Total	289,200	289,530	+ 330	+ 0.1%
Examination				
Requests	238,557	233,780	- 4,777	- 2.0%
First Actions	232,070	242,626	+ 10,556	+ 4.5%
Final Actions	231,272	247,378	+ 16,106	+ 7.0%
Grants				
Domestic	141,853	155,117	+ 13,264	+ 9.4%
Foreign	42,519	46,303	+ 3,784	+ 8.9%
Total	184,372	201,420	+ 17,048	+ 9.3%
Appeals/Trials				
Demand for Appeal against refusal	16,894	19,647	+ 2,753	+ 16.3 %
Demand for Trial for invalidation	106	97	- 9	- 8.5%
PCT Activities				
International searches	48,502	49,154	+ 659	+ 1.3%
International preliminary examinations	1,541	1,401	- 140	- 9.1%

³¹ Divisional application(s) is/are one or more new patent application(s) which is/are filed by dividing a part of the patent application that includes two or more inventions under certain conditions.

³² Converted applications include patent applications which are converted from an application for utility model registration or design registration (under Article 46 of Patent Act), and patent applications filed based on a registration of utility model (under Article 46bis).

JPO budget

Figure 2.8 shows JPO expenditures by category in 2022.



A description of the items in Figure 2.8 can be found in [Annex 1](#).

JPO Staff Composition

As of the end of fiscal year (FY) 2022, the total number of staff at the JPO was 2,794.

Examiners	
Patent / Utility model	1,662
Design	50
Trademark	175
Appeal examiners	380
General staff	527
Total	2,794

More information

Further information can be found on the JPO's Homepage:

www.jpo.go.jp/e/

KOREAN INTELLECTUAL PROPERTY OFFICE

Overview

As the Korean governmental agency primarily responsible for overseeing IP rights (IPRs), the KIPO strives to conduct its IP administration in accordance with the national paradigm of creative economy, which seeks to foster innovation and new engines of economic growth to drive Korea's future prosperity.

Domestically, KIPO has put as great an emphasis as possible on further developing its examination services, as well as promoting economic sustainability through a virtuous cycle of IP creation, utilization, and protection. On the international front, KIPO strengthened our cooperative ties with foreign IP offices and other international organizations.

Premium Examination Services

KIPO continually aims to provide high-quality, customer-oriented, and fast examination services by raising the quality of IP administration, improving examination systems, and reducing first office action pendency. In 2022, the average first office action pendency was 14.4 months for patents and utility models, 13.9 months for trademarks, and 4.8 months for industrial designs

IPR Applications

In 2022, we received a preliminary total of 556,436 applications for patents, utility models, industrial designs, and trademarks. Out of that number, 90,207 applications were filed by non-residents.

PCT Applications

The number of PCT applications from the Korea has continually grown every year. We have the 4th largest amount of PCT applications by country of origin. There were 21,916 PCT applications in total for 2022 which is a 6.8 percent increase from 20,528 applications in 2021. The Korean language is also the 4th most commonly used language as an official PCT publication language.

Improving the IP System

1. Expansion of AI in Examination and Trial Services

The number of IP applications continues to rise as society becomes increasingly aware of the importance of IP rights (e.g., patent rights, trademark rights, design rights, etc). In order to meet user demand without affecting quality and accuracy, KIPO expanded the utilization of AI, a core technology of digital transformation, in its examination and trial services.

As a part of the Korea government's proactive administration project, KIPO jointly developed an AI-based Patent Search System for patent examinations and trials with Kakao Corporation, and officially launched for utilization in March 2022.

Rather than requiring examiners to individually search for keywords, the AI-based Patent Search System automatically identifies words and sentences from documents to search similar prior art and make recommendations. Accuracy of search results is also enhanced by using information specific to the patent document, such as key sentences and CPC codes. The assistance of AI technology will help shorten the time

spent searching through prior art documents and enhance the quality of examination services. After its launch in 2022, the search system was further improved through examiner feedback and user statistics analysis to ensure the best performance.

2. Accelerated Examination for Semiconductor Patent Applications

In a global market with the intensifying technological competition, accelerated examination is a decisive mechanism to achieve international competitiveness. To secure this competitiveness in the semiconductor field, KIPO has included patent applications for semiconductors, for which R&D and production have been carried out domestically, in the list of cases eligible for accelerated examination for a 1-year duration starting from November 1, 2022.

Specifically, the accelerated procedure is available to applications directly related to semiconductor technology and have assigned the CPC code for semiconductor technology as its main classification. The application must also meet at least one of the following conditions: 1) be an application filed by an enterprise that is domestically producing or preparing to produce semiconductor-related products, devices, etc.; 2) be an application regarding the outcome of a national R&D project of semiconductor technology; or 3) be an application filed by a university or graduate school specializing in semiconductors under the Act on Special Measures for Reinforcement and Protection of National High-tech Strategic Industry Competitiveness.

When enterprises, R&D institutions, academic institutions, etc. rely on the accelerated examinations under the new action, a semiconductor application can be processed in about 2.5 months on average which is 10 months earlier than general examination's pendency of 12.7 months (as of 2021).

Promoting the Creation and Use of IP

1. Support for IP-based R&D Strategies

IP-based R&D (IP-R&D) refers to the utilization of patent analysis in the early stages of R&D. In other words, global patent information is analyzed to identify the best direction for the R&D projects for better overcoming patent barriers and for quickly obtaining promising patents where there exists gaps of patented technology. KIPO provides customized IP-R&D strategies to SME & medium-sized enterprises, universities, and public research institutions to develop strategic technologies and secure original and core patents.

In 2022, a total of 615 IP-R&D projects for small and medium-sized companies and 98 tasks were supported to streamline R&D for universities and public research institutes. KIPO also expanded support to R&D in important technology fields for leading global technology and overcoming the COVID-19 crisis, such as semiconductors, vaccines, materials, parts, and equipment.

Furthermore, KIPO established a new selective option that allows SMEs that lack of IP capabilities to select one module of support of either conflict prevention, excellent patent creation, or R&D direction at a low cost.

The patent technologies from such projects supported with IP-R&D strategies have resulted in higher industrial utilization value than patents generated by general R&D tasks. Over five years (2017-2021), indicators of patent quality (e.g., high-quality patents, international patents, etc.) have shown an increase up to 2.5 times, the rate

of patent transfer by 1.2 times, and royalties per technology transfer contracts by 3.7 times.

With proven results, KIPO has been working to expand IP-R&D into important technology fields through legislative systems. As a result, IP-R&D (strategic analysis of IPRs) has become a mandatory requirement reflected in the “National Advanced Strategic Industry Act (Semiconductor Special Act)” in 2022 and is planned to be reflected in the “National Strategic Technology Promotion Special Act” in 2023.

2. Vitalization of the Linkage between Patent Big Data Analysis and R&D

The value of IP information and its strategic utilization, such as utilizing patent big data in R&D activities is becoming more important as the competition for technological dominance and resource protectionism increases. In November 2022, KIPO hosted a meeting with personnel from R&D institutions to discuss and establish plans for promoting R&D investment efficiency through analysis of patent big data.

Participants shared about the current situation of patent big data analysis in key industrial and technological areas with R&D-specialized institutions, such as the Korea Institute of Science & Technology Evaluation and Planning (KISTEP) and Korea Evaluation Institute of Industrial Technology (KEIT), and considered ways to link government and private R&D policies and patent big data analysis as well as to encourage inter-institutional cooperation.

Topics for analysis are chosen from areas crucial to industrial policies (e.g., national strategic technologies, etc.) or areas that can be linked to R&D implementation plans according to government departments. And quantitative patent indicators are used to analyze national/enterprise patent trends and apply various big data analysis methods to identify emerging future technologies.

In 2022, patent big data analysis activities identified a total of 173 emerging technologies by focusing on four areas of strategic industries (digital healthcare, aerospace, digital security, synthetic biology), three areas of new industries (metaverse, advanced robots, smart manufacturing), and two areas with ongoing issues (nuclear power generation, smart agriculture). The analysis results were disseminated to the public through the “2022 Patent Big Data-based Emerging Technology Conference” to help establish R&D strategies and be used in government R&D as well.

Enhancing Global IP Cooperation

1. KIPO-WIPO-KIPA Joint Development of IP Panorama 2.0

In collaboration with WIPO Academy and the Korea Invention Promotion Association (KIPA), KIPO released “IP Panorama 2.0” a modern e-learning course on the basis of IP in 2022. The online course is an updated and restructured version of the original “IP Panorama” released in 2007 that teaches IP strategies such as acquisition, utilization, protection, and marketing from a business perspective and addresses main issues in the field of IP rights.

Joint development was carried out in 2019 and completed in 2022 to resolve issues such as legislative changes, outdated learning cases, and software upgrades. The new version supports a mobile learning user interface and applies a microlearning method

which allows users to learn 1-2 concepts in around 15 minutes. It also features the latest video techniques to teach new IP-related laws, cases, and other topics.

A promotional booth was set up to showcase the launch of IP Panorama 2.0 on July 15, 2022 during the 63rd WIPO General Assembly in Geneva. With more than 350 visitors including heads of IP offices and official representatives from various countries, many showed interest in having their countries collaborate to utilize the program. KIPO plans to develop multiple versions of IP Panorama 2.0 with different languages, such as Spanish and French, in cooperation with WIPO.

2. Hosting of the Korea-ASEAN Heads of IP Offices Meeting

The Association of Southeast Asian Nations (ASEAN) is a region with growing economic potential and an important trade partner of the Korea. For mutual benefit of KIPO and the ASEAN countries, continuous efforts have been made to support the establishment and advancement of the IP system. Since its commencement in 2018, the Korea-ASEAN Heads of IP Offices Meetings have grown into a high-level cooperation platform of great importance.

In November 2022, KIPO invited its ASEAN counterparts to Seoul for the 5th Heads of IP Office Meeting to continue dialogue on ongoing efforts among the countries. The meeting was especially meaningful as the first in-person meeting held in three years.

With a renewed sense of responsibility, delegations from the 11 countries agreed to join together to build an IP-based innovative ecosystem after in-depth discussions under the main theme of “IP and innovation towards a sustainable future.” Further discussions on specific and detailed activities were carried out through bilateral talks with each ASEAN member states on existing and upcoming cooperation projects while focusing on different aspects of examination, education, legal systems or digitization depending each country’s conditions and circumstances.

In particular, during this gathering, KIPO was able to sign Memorandums of Understanding (MoUs) for reinforced and comprehensive cooperation with the Philippines and Brunei, respectively. And as of 2022, there are a total of 26 MoUs signed between KIPO and ASEAN nations regarding a wide range of subjects that cover patent examination, training, information sharing, IT, and IP protection.

KIPO Production information

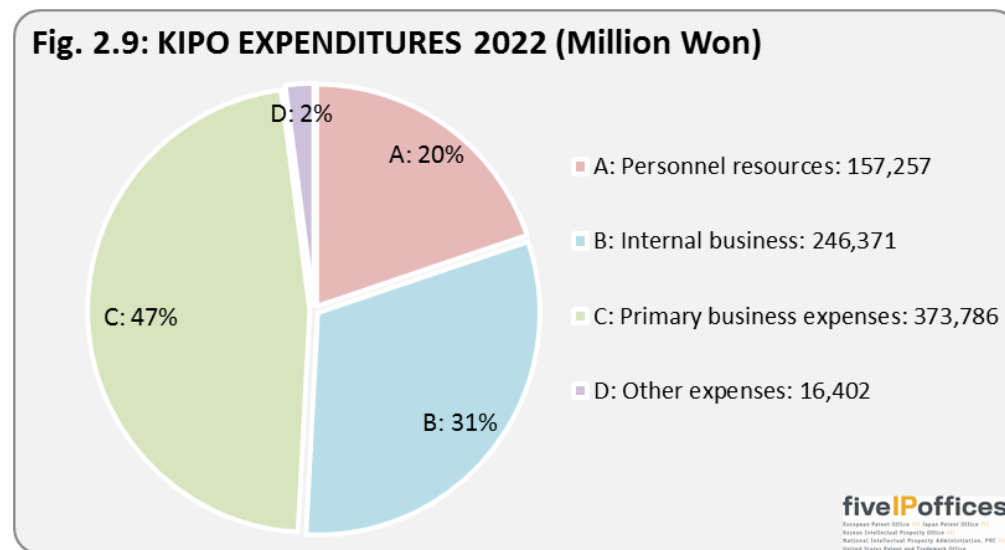
Table 2.3 shows production figures for applications, examinations, grants, appeals or trials and PCT activities for 2021 and 2022.

Table 2.3: KIPO PRODUCTION INFORMATION

KIPO PRODUCTION FIGURES	2021	2022	Change	%Change
Applications filed (by Origin of Application)				
Domestic	186,245	183,748	- 2,497	- 1.3%
Foreign	51,753	53,885	+ 2,132	+ 4.1%
Total	237,998	237,633	- 365	- 0.2%
Applications filed (by Types of Application)				
Divisional Applications	15,233	15,956	+ 723	+ 4.7%
Converted Applications	25	27	+ 2	+ 8.0%
Others	222,740	221,650	- 1,090	- 0.5%
Total	237,998	237,633	- 365	- 0.2%
Examination				
Requests	233,055	202,508	- 30,547	- 13.1%
First Actions	181,976	172,793	- 9,183	- 5.0%
Final Actions	184,710	172,492	- 12,218	- 6.6%
Grants				
Domestic	110,351	99,202	- 11,149	- 10.1%
Foreign	35,531	35,978	+ 447	+ 1.3%
Total	145,882	135,180	- 10,702	- 7.3%
Appeals/Trials				
Demand for Appeal against refusal	2,196	1,589	- 607	- 27.6%
Demand for Trial for invalidation	408	374	- 34	- 8.3%
PCT Activities				
International searches	28,350	29,928	+ 1,578	+ 5.6%
International preliminary examinations	124	96	- 28	- 22.6%

KIPO budget

Figure 2.9 shows KIPO expenditures by category in 2022



A description of the items in Figure 2.9 can be found in [Annex 1](#).

KIPO Staff Composition

At the end of 2022, the KIPO had a total staff 1,896. The breakdown is as follows.

Examiners	
Patents and Utility Model	978
Designs and Trademarks	214
Appeal examiners	107
Other staff	597
Total	1,896

More information

Further information can be found on KIPO's Homepage:

www.kipo.go.kr/en/MainApp

China National Intellectual Property Administration

In 2022, CNIPA made further progress in implementing the Outline for Boosting China's Competitiveness in the Area of Intellectual Property (2021-2035) and the National Plan for Protection and Utilization of Intellectual Property During the 14th Five-Year Plan Period, endeavored to promote high-quality development of IP, and effectively escorted innovation-driven development and high-level opening up. R&D investment in P.R. China kept a double-digit increase, and ever more funds were channeled to fundamental science research, fostering optimal conditions for original innovation capabilities to grow. P.R. China rose to 11th place as ranked in the Global Innovation Index 2022, with steady progress for ten consecutive years.

Statistical Overview of 2022

1) Patent Applications in 2022

In 2022, a total of 1.619 million invention patent applications were filed in P.R. China, a year-on-year increase of 2.1 percent. Among them, 1.465 million were domestic applications, accounting for 90.4 percent of the total, a year-on-year increase of 2.6 percent; 154,663 were foreign applications filed in P.R. China, accounting for 9.6 percent of the total, a year-on-year decrease of 2.0 percent. Among the domestic invention patent applications, 71.2 percent were filed by enterprises, 4.4 percentage points higher than the previous year.

In 2022, 2.951 million utility model patent applications and 794,718 industrial design patent applications were filed in P.R. China, registering an increase of 3.5 percent and a decrease of 1.4 percent respectively.

2) Patents Granted in 2022

In 2022, 798,347 invention patents were granted, a year-on-year increase of 14.7 percent. Among them, 695,591 were granted to domestic applications, accounting for 87.1 percent of the total, a year-on-year increase of 18.7 percent; 102,756 were granted to foreign applications filed in P.R. China, accounting for 12.9 percent of the total, a year-on-year decrease of 6.6 percent. Among the granted domestic invention patents, 682,618 were service inventions, accounting for 98.1 percent, a year-on-year increase of 20.8 percent; 12,973 were nonservice inventions, accounting for 1.9 percent, a year-on-year decrease of 37.7 percent.

In 2022, 2.80 million utility model patents were granted, a year-on-year decrease of 10.1 percent; 720,907 design patents were granted, a year-on-year decrease of 8.2 percent.

3) Valid invention patents in 2022

As of the end of 2022, the total number of invention patents granted and maintained valid in P.R. China reached 4.212 million, a year-on-year increase of 17.1 percent. Among them, 3.351 million were domestic invention patents, accounting for 79.6 percent of the total, an increase of 20.8 percent; 860,735 were foreign invention patents in P.R. China, accounting for 20.4 percent of the total, a year-on-year increase of 4.5 percent.

As of the end of 2022, the number of high-value invention patents per 10,000 population in P.R. China (not including Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan Province of China) reached 9.4.

4) Examination Period

The average pendency for the examination of invention patents was reduced to 16.5 months, the pendency for the examination of high-value inventions was reduced to 13 months. A novel intelligent patent examination system was set up, more than 99 percent of both the patent and trademark applications were filed electronically, and the certificates were issued in electronic format. The user satisfaction rating on patent examination quality in 2022 remained at 85.7, keeping in the satisfactory range for 13 consecutive years.

5) Hague Design

The Hague Agreement Concerning the International Registration of Industrial Designs came into effect in P.R. China on May 5, 2022. In 2022, 1,286 applications for international registration of designs were filed by Chinese applicants under the Hague Agreement and 607 applications for international registration of designs entered P.R. China after the publication of the international registration.

CNIPA production information

Table 2.4 shows production figures of patent applications, examination, grants, re-examination and invalidation, and PCT activities in the years 2021 and 2022. The data in table 2.4 concentrate only on patents for invention.

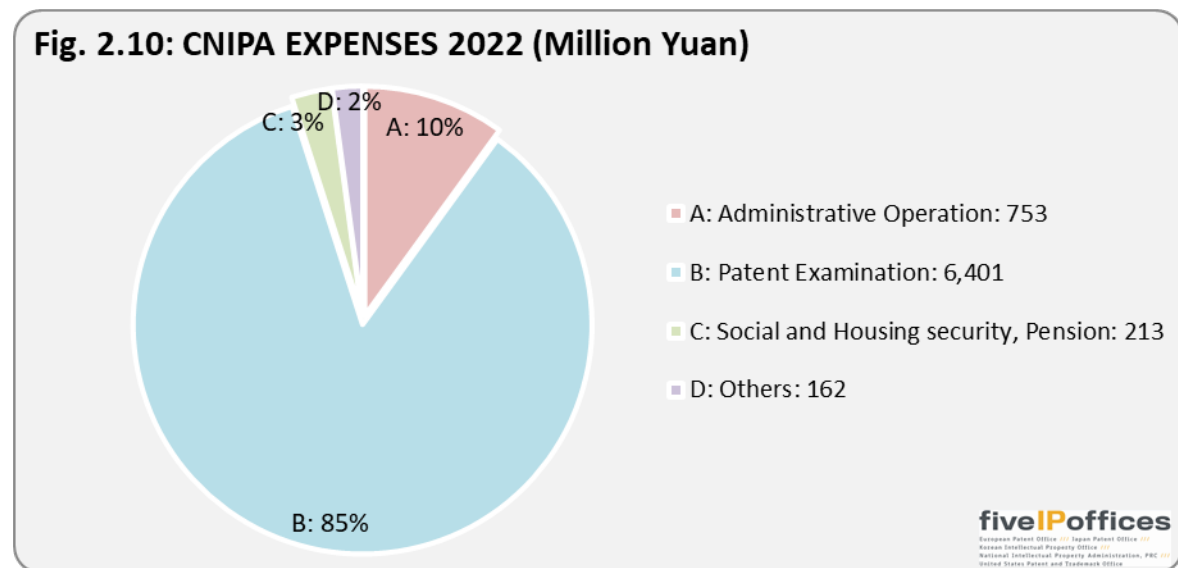
Table 2.4: CNIPA PRODUCTION INFORMATION

CNIPA PRODUCTION FIGURES	2021	2022	Change	% Change
Applications filed				
Domestic	1,427,845	1,464,605	+ 36,760	+ 2.6%
Foreign	157,818	154,663	- 3,155	- 2.0%
Total	1,585,663	1,619,268	+ 33,605	+ 2.1%
Examination				
First actions	1,202,319	1,311,273	+ 108,954	+ 9.1%
Final actions	1,233,440	1,475,405	+ 241,965	+ 19.6%
Grants				
Domestic	585,910	695,591	+ 109,681	+ 18.7%
Foreign	110,036	102,756	- 7,280	- 6.6%
Total	695,946	798,347	+ 102,401	+ 14.7%
Re-examination and invalidation				
Re-examination requests	73,601	96,713	+ 23,112	+ 31.4%
Invalidation request	1,713	1,431	- 282	- 16.5%
PCT activities				
International searches	78,220	77,669	- 531	- 0.7%
International preliminary examinations	444	394	- 50	- 11.3%

n.a. : not available

CNIPA Budget

Fig 2.10 shows CNIPA expenditures by category in 2022.³³



A description of the items in Figure 2.10 can be found in [Annex 1](#).

The CNIPA Organization Composition

By the end of 2022, the CNIPA has eight functional departments, including the General Office, Department of Treaty and Law, Strategic Planning Department, Intellectual Property Protection Department, Intellectual Property Utilization Promotion Department, Public Service Department, International Cooperation Department (Office of Hong Kong, Macao and Taiwan Affairs) and Personnel Department.

More information

Further information can be found on the CNIPA's Homepage:
english.cnipa.gov.cn/

³³ Percentages in this report may not add to 100 due to rounding.

UNITED STATES PATENT AND TRADEMARK OFFICE

The USPTO's ultimate goal is to drive innovation, entrepreneurship, and creativity for the benefit of all Americans and people around the world. The latest USPTO Strategic Plan was in draft form in 2022. It defines the USPTO's mission to drive U.S. innovation, inclusive capitalism, and global competitiveness for the benefit of all Americans. The Plan does this by unleashing America's potential for long-term economic growth, supply chain resiliency, human prosperity, and national security.

The USPTO is working to, first, accelerate the creativity that drives U.S. innovation in all its forms and, second, bolster the adoption of that innovation in key and emerging technologies while bringing more Americans into the innovation ecosystem. Guided by this mission and vision, the USPTO 2022–2026 Strategic Plan offers five goals the Agency aims to achieve.

Goal 1: Drive inclusive U.S. innovation and global competitiveness

Goal 2: Promote the efficient delivery of reliable IP rights

Goal 3: Promote the protection of IP against new and persistent threats

Goal 4: Bring innovation to positive impact

Goal 5: Generate impactful employee and customer experiences by maximizing agency operations

The USPTO fulfills the mandate of article I, section 8, clause 8 of the Constitution, which grants the Legislative Branch the power to “promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”; and supports effective administration of the Commerce Clause of the Constitution (article I, section 8, clause 3), whose purpose is “[t]o regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.”

The USPTO IP system incentivizes and protects the deep investment of time, money, resources, and collaboration needed to solve problems, deliver solutions, and enrich the lives of many Americans. The Agency provides valued products and services to its customers in exchange for fees that are appropriated to fund its operations. The powers and duties of the USPTO are vested in the Under Secretary of Commerce for Intellectual Property and Director of the USPTO, who consults with the Patent Public Advisory Committee and the Trademark Public Advisory Committee. The USPTO operates with two core business units, Patents and Trademarks.

Agency News

In FY 2022 utility patent filings were slightly less than the prior year falling 0.5 percent to 592,714; the number of pending applications rose 6.1 percent; and the number of grants grew by 1.2 percent. The USPTO met its target of 80 percent of total Patent Term Adjustment (PTA) compliance for mailed actions (i.e., office actions the agency mailed to applicants). An office action is an official letter from the patent examiner to the patent applicant during the patent examination process. The USPTO did not meet the PTA compliance target for remaining inventory (i.e., cases awaiting action from the USPTO); the PTA compliance result was 85 percent, 2 percent below the target. The underperformance was due to the increase in applications awaiting a first office action.

In June 2022, the USPTO started the Climate Change Mitigation Pilot Program where qualifying applications involving greenhouse gas reduction technologies are advanced out of turn for examination (granted special status) until an FAOM—typically the first substantive examination—is complete. There is no additional fee nor is the application

required to meet other requirements of the accelerated examination program. This program supports the USPTO's efforts to secure an equitable economic future, reduce greenhouse gas emissions, and mitigate the effects of climate change.

Throughout 2022, the USPTO implemented several leading-edge measures to streamline the patent examination process and help examiners more easily access prior art, including incorporating AI into the Patents End-to-End (PE2E) search tool to help examiners identify relevant documents, provide suggestions for additional areas to search, and automatically capture feedback data from examiners to help the AI systems "learn" over time. One component is the Similarity Search, which launched in September 2022, and will aid patent examiners to issue robust and reliable patents, while improving the timeliness of examinations. This tool represents a significant advancement in leveraging the power of AI to conduct patent searches. The Similarity Search capability enables patent examiners to search patent applications and provides new flexibilities to emphasize application text and patent classifications. The AI is powered by world-class models that calculate similarity based on patent document text, classifications, document citations, and human ratings and feedback. This new capability searches across U.S. patents back to 1836, all U.S. pre-grant publications, and foreign image and text foreign patent documents that are already available in the PE2E search tool. The Similarity Search capability is updated regularly with newly published documents.

In June 2022, the USPTO hosted the first of many panel discussions with AI and Emerging Technologies (ET) communities forming the AI/ET Partnership. At the inaugural meeting patent policy issues such as subject matter eligibility, disclosure requirements of AI inventions, and the implications of AI's increasing role in the inventive process in some fields were discussed. Also explored was the effectiveness of current patent laws and USPTO guidelines that incentivize innovation and investment, and ways in which the patent system could evolve to encourage and protect AI and ET inventions. Future meetings will continue on these lines and will highlight the USPTO's AI and ET-related initiatives, explore various IP policy issues impacted by AI and ET, provide a forum to hear from the innovation community, and promote greater awareness, openness, and inclusivity on current and future AI and ET efforts.

In FY 2022, trademark applications, while lower than the surge in 2021, were still roughly seven percent higher than FY 2020. As a result of high inventories and relatively finite examination capacity, the USPTO did not meet its two pendency targets for trademark applications. First action pendency was 8.3 months, 0.8 months higher than the top range of the target, or 7.5 months. The total pendency average was 13.8 months, 0.3 months higher than the target of 13.5 months. The USPTO met and exceeded all trademark quality targets.

Over the course of 2022 the USPTO launched both a Patent Trial and Appeal Board (PTAB) and Trademark Trial and Appeal Board (TTAB) Pro Bono clearinghouse program. Under the PTAB program, the PTAB Bar Association has solicited volunteer patent practitioners with ex parte appeal experience before the Board to provide free legal services to qualified participants. Inventors apply for assistance through the PTAB Bar Association. To be eligible for pro bono assistance, independent inventors must demonstrate that they: (1) are domiciled in the United States; (2) have a gross household income less than three times the federal poverty guidelines; (3) established Micro Entity Status in the application subject to appeal; (4) applied within one month from the date of the office action in which claims have been twice or finally rejected; and (5) viewed the required training about the PTAB Pro Bono Program and the ex parte appeal process. Pro bono representation is subject to the availability of volunteer

practitioners. Earlier in the year the TTAB pro bono program was formed to facilitate free legal assistance to certain individuals and small businesses involved in proceedings before the TTAB. These pro bono programs build off the success of the USPTO's Patent Pro Bono Program, which has matched more than 3,400 under-resourced inventors and small businesses with volunteer patent practitioners who have helped file over 1,800 patent applications, donating more than 84,000 hours.

International Cooperation and Work Sharing

The USPTO maintained its efforts to train audiences on best practices in IP protection and enforcement. In FY 2022, the USPTO conducted 222 training programs through its Global Intellectual Property Academy, including programs coproduced with the USPTO's regional offices, serving over 18,600 individuals. Approximately 62 percent were patent, trademark, and copyright officials; prosecutors; police; customs officials; and policy makers from the United States and 162 other countries, including intergovernmental organizations. The other attendees were representatives of U.S. small and medium-sized enterprises, IP practitioners, and IP owners and users.

The USPTO kept up its work toward global IP harmonization and established cooperative agreements designed to improve IP systems and enhance the enforcement of rights with the IP offices of Japan, the European Union, Saudi Arabia, Malaysia, France, and Peru as well as the National Research Development Corporation of India and the WIPO. The USPTO continued collaborations with the International Group of Seven IP offices on expanding innovation and entrepreneurship and respect for the same.

The USPTO continued to provide training to foreign government agencies and capacity building to a variety of audiences to promote protection and enforcement of American innovators' and creators' IP in the United States and abroad. Progress continues toward cooperative agreements with the IP offices in the economies of Laos, Moldova, Egypt, Tunisia, Qatar, Nepal, Morocco, Malaysia, and Indonesia to improve IP systems and the enforcement of IP rights.

In July 2022, the USPTO joined ten other IP offices and became a technology partner to the global green-technology platform WIPO GREEN. This partnership provides an online platform for technology exchange, connecting providers and seekers of environmentally friendly technologies, and organizes events that highlight the availability of green technologies. The USPTO's contributions to WIPO GREEN include its own initiatives that are designed to address the challenge of climate change, including the USPTO Climate Change Mitigation Pilot Program, which accelerates the examination of patent applications involving innovations to reduce greenhouse gas emissions.

USPTO production information

Table 2.5 includes production figures for application filings, PCT searches and examination, first actions, grants, applications in appeal and interference, and patent cases in litigation for the years 2021 and 2022.

Table 2.5: USPTO PRODUCTION INFORMATION

USPTO PRODUCTION FIGURES	2021	2022	Change	% Change
Applications filed				
Utility (patents for invention) ³⁴	591,473	594,340	+ 2,867	+ 0.5%
Domestic	281,996	273,585	- 8,411	- 3.0%
Foreign	309,477	320,755	+ 11,278	+ 3.6%
Plant	992	888	- 104	- 10.5%
Reissue	1,132	1,242	+ 110	+ 9.7%
Total utility, plant & reissue	593,597	596,470	+ 2,873	+ 0.5%
Design	56,711	52,923	- 3,788	- 6.7%
Provisional	152,909	146,737	- 6,172	- 4.0%
Total	803,217	796,130	- 7,087	- 0.9%
Request for continued examination (RCE) ³⁵	140,183	133,837	- 6,346	- 4.5%
PCT Chapter I searches	24,055	19,215	- 4,840	- 20.1%
PCT Chapter II examinations	944	689	- 255	- 27.0%
First actions (utility, plant, reissue)	540,135	493,599	- 46,536	- 8.6%
Grants (total)	327,775	323,418	- 4,357	- 1.3%
U.S. residents	149,700	141,938	- 7,762	- 5.2%
Foreign	178,075	181,480	+ 3,405	+ 1.9%
Japan	46,472	45,656	- 816	- 1.8%
EPC states	50,603	49,862	- 741	- 1.5%
R. Korea	20,764	22,031	+ 1,267	+ 6.1%
P.R. China	23,745	27,100	+ 3,355	+ 14.1%
Others	36,491	36,831	+ 340	+ 0.9%
Applications in appeal and interference proceedings (includes utility, plant, and reissue)				
Ex-parte cases received	5,270	4,682	- 588	- 11.2%
Ex-parte cases disposed	7,009	5,728	- 1,281	- 18.3%
Inter-partes cases received	7	4	- 3	- 42.9%
Inter-partes cases disposed	9	15	+ 6	+ 66.7%
Patent cases in litigation				
Cases filed	220	505	+ 285	129.5%
Cases disposed	175	300	+ 125	71.4%
Pending cases (end of calendar year)	217	605	+ 388	178.8%

³⁴ Unless otherwise noted, the USPTO statistics presented elsewhere in this report are limited to utility patent applications and grants, and include Requests for Continued Examination (RCEs).

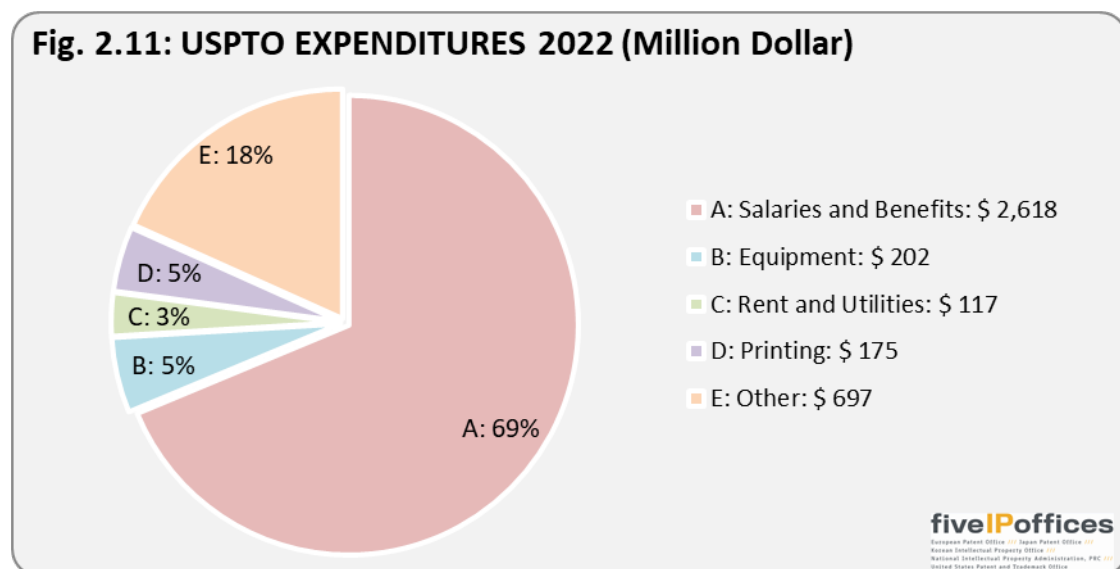
³⁵ A Request for Continued Examination is a USPTO procedure under which an applicant may obtain continued examination of an application by filing a submission and paying a specified fee, even if the application is under a final rejection, appeal, or a notice of allowance.

USPTO Budget

The USPTO utilizes an activity-based information methodology to allocate resources and costs that support programs and activities within each of the three strategic goals which were in effect in FY 2022. The, USPTO expenditures totaled \$3,809.7 million. Agency-wide, 20.2 percent of expenditures were allocated to IT security and associated IT costs.

Goal 1 – Optimize Patent Quality and Timeliness	\$ 3,298.5 million
Goal 2 – Optimize Trademark Quality and Timeliness	\$ 429.9 million
Goal 3 – Provide Domestic and Global Leadership to Improve IP Policy, Protection and Enforcement Worldwide	\$ 81.3 million

Figure 2.9 shows USPTO expenditures by category in 2022



A description of the items in Figure 2.11 can be found in [Annex 1](#).

USPTO Staff Composition

At the end of FY 2022, the USPTO work force was composed of 13,103 federal employees. Included in this number are 8,214 Utility, Plant, and Reissue patent examination staff and 295 Design examination staff; 718 Trademark examining attorney staff, and 3,876 managerial, policy, legal, administrative and technical support staff.

More information

Further information can be found on the USPTO's website:

www.uspto.gov

Chapter 3

WORLDWIDE PATENTING ACTIVITY

Patenting activity is recognized as an indicator of innovation. This chapter examines worldwide patent activities in terms of patent applications and grants. The statistics mostly cover the five-year period from 2017 to 2021³⁶.

Hereafter, the counts of applications and filings are by the calendar year of filing and grants by the calendar year of grant. Statistics are derived primarily from the WIPO Statistics Database³⁷, as collected from offices all over the world. Patent statistics are sometimes retroactively updated and, where necessary, possible missing counts have been supplemented using other sources. But otherwise no estimated counts have been included to compensate for missing data. Considering that not all the offices report their filing statistics to the WIPO regularly enough, some of these data should be interpreted with care, especially when referring to countries outside the IP5 Blocs.

It should be noted that the number of inventions that lead to patent applications is less than the total number of applications filed. This is because the first filing for an invention that is made in one office is often followed by applications to some other offices, with each such application claiming the priority of the earlier first filing. First filings can be seen as an indicator of innovative activity, while foreign filings are an indicator of an intention to utilize such activity for international trade and globalization.

While demand for patent protection is considered principally by counting each national, regional, or PCT international application only once, alternative representations are also given in this chapter in terms of the demand for rights, after cumulating the number of designated countries over applications within regional procedures.

³⁶ The statistical tables file found in the web version of this report includes extended time series for much of the data included in this chapter, www.fiveipoffices.org/statistics/statisticsreports

³⁷ This edition refers to general patent data as of April 2023, and to PCT international phase application data as of May 2023, www.wipo.int/ipstats/en/index.html. For some statistics on 2022, see Chapter 4.

In this chapter, applications are counted in terms of patent filings, first filings, patent applications, and demand for national patent rights. These counting methods are associated with separate sections within the chapter.

- "Patent filings" include direct national, direct regional, and international phase PCT filings;
- "First filings" include initial patent applications filed prior to any later subsequent filings to extend the protection to other countries;
- "Patent applications" include direct national, direct regional, national stage PCT, and regional stage PCT applications;
- "Demand for national patent rights" includes direct national, national stage PCT, and designations in regional and in regional stage PCT applications.

See "Guide to Figures in Chapter 3" on the next page, and also the explanatory text associated with the individual figures, for further discussion about the applications associated with each of these counting methods.

Patent grants are counted in the year that the grants are issued or published. As with the applications, alternative presentations are also given in this chapter for grants in terms of rights, after cumulating the number of designated countries in grants obtained from regional procedures.

The last part of this chapter discusses inter-bloc patent activity in terms of application flows between blocs and in terms of patent families. A patent family is a group of patent filings that claim the priority of a single filing, including the original priority forming filing itself and any subsequent filings made throughout the world. The set of distinct priority forming filings (that indexes the set of patent families), in principle, constitutes a better measure for first filings than aggregated domestic national filings. IP5 patent families are a highly filtered subset of patent families for which there is evidence of patenting activity in all IP5 Blocs.

GUIDE TO FIGURES IN CHAPTER 3

Due to the complexity of the patent system, different representations of the patent filing process are made to illustrate complementary parts of the process. The following scheme guides the reader to graphs that correspond to the different representations. This also describes the terminology used throughout Chapter 3. Additional explanatory text can be found with each of the referenced figures.

- **Figs. 3.1, 3.2, 3.3, and 3.4** show the numbers of *patent filings* in terms of application forms filled out. The counts include: direct national, direct regional filings (filed with the ARIPO, EAPO, EPO, GCCPO, OAPI³⁸), and PCT international filings.
- **Figs. 3.5, 3.6, 3.7 and 3.14** show the numbers of requests for patents as *patent applications*. Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. While direct national and direct regional filings are counted once, PCT filings are replicated over the numbers of national/regional procedures that are started.
- **Figs. 3.8, 3.9, and 3.10** show the numbers of *demands for national patent rights*. Direct national filings are counted only once. The counts for PCT applications entering national procedures are replicated over the number of countries where they enter this phase. This cumulates the demands for distinct national legal rights over the countries concerned. The counts for direct regional filings and PCT regional phase filings are replicated over the number of countries designated in the applications at the time that they enter the regional procedure. This gives a representation in terms of national patenting.
- **Fig. 3.11 and 3.12** show the numbers of *granted patents*. All grants are counted only once (in an analogous way to Figs. 3.5, 3.6, 3.7, and 3.14 for applications).
- **Fig. 3.13** shows the numbers of *national patent rights granted*. Direct national grants are counted only once, but the counts for regional office grants are replicated over the numbers of countries for which the grant is validated. This gives a representation in terms of national patent rights obtained in each bloc (comparable to Figs. 3.8, 3.9, and 3.10 for applications).
- **Figs. 3.15, 3.16, 3.17 and Table 3** show the numbers of *patent families* that are generated by the set of first filings. They also show the flows between blocs in terms of the first filings for which claims to priority rights were made by subsequent filings in other countries.

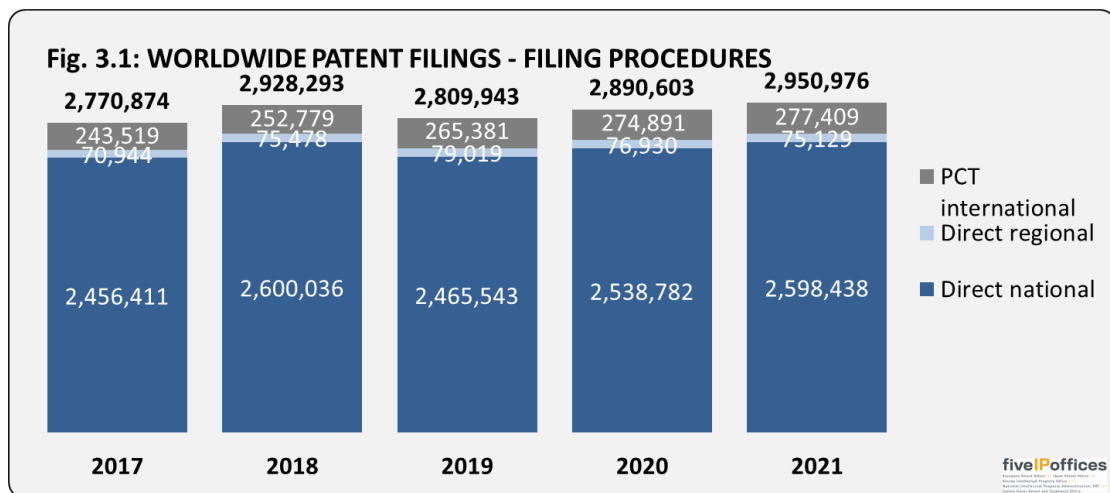
³⁸ The ARIPO is the African Regional Intellectual Property Office. The EAPO is the Eurasian Patent Organization. The GCCPO is the Gulf Cooperation Council Patent Office. The OAPI is the Organisation African Intellectual Property.

PATENT FILINGS

The patent filings that are counted in this section include direct national, direct regional and PCT filings in the international phase.

Figs. 3.1, 3.2, and 3.3 show the numbers of patent filings that were made throughout the world. Here, the filings are counted only once, which means that the number of countries designated in regional filings and in PCT international filings are not used in determining these counts. The total number represents a measure of the overall numbers of actions taken to assert IP rights around the world, although some inventions lead to filings in more than one office.

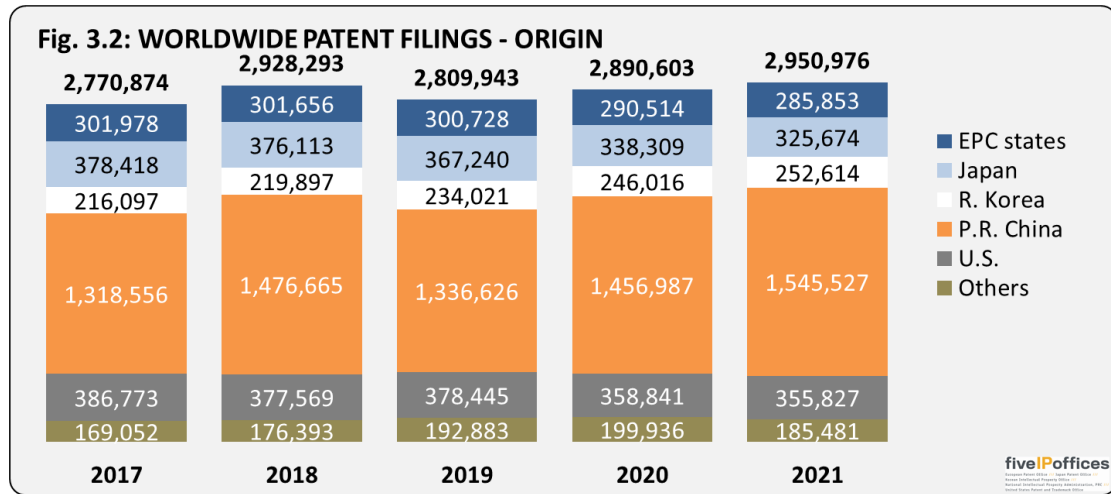
Figure 3.1 shows a breakdown of patent filings according to the three types of filing procedures.



In 2021, the number of patent filings increased by 2 percent to 2.95 million. The number of direct national filings increased by 2 percent, while direct regional decreased by 2 percent. PCT international phase filings increased by 1 percent. Overall, 88 percent of the filings were made according to direct national procedures.

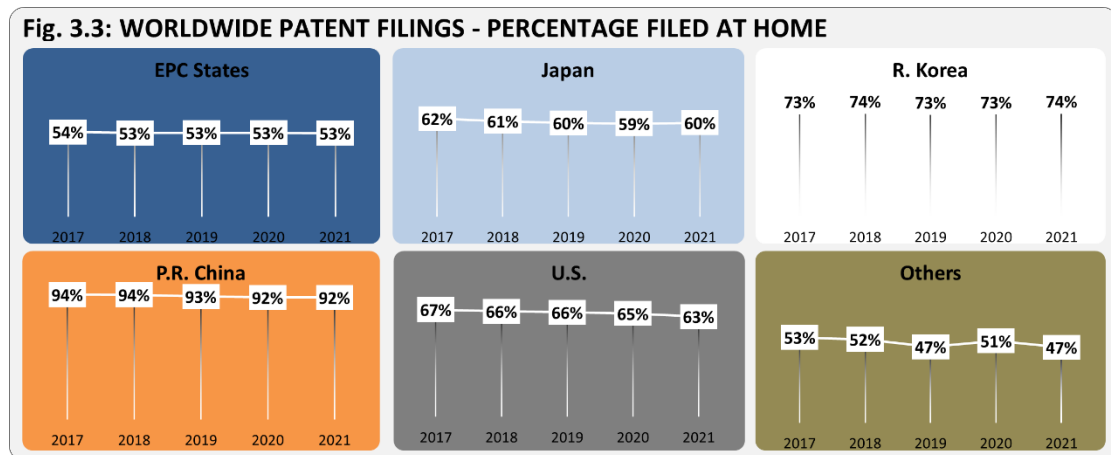
The contribution of the PCT system to filings will be discussed later in this chapter and in Chapter 5.

Figure 3.2 shows the worldwide patent filings of Figure 3.1 broken down by blocs of origin (residence of first-named applicant or inventor).



Between 2017 to 2021, the IP5 Bloc’s annual share remained stable at around 94 percent. In 2021, the number of patent filings increased by 2 percent. The number of patent filings that originated from P.R. China and R. Korea increased by 6 percent and 3 percent respectively. Whereas, those originating from the EPC states, Japan, and U.S. decreased by 2 percent, 4 percent, and 1 percent respectively.

Figure 3.3 shows the proportion of patent filings throughout the world that are filed within the home bloc of origin (residence of first-named applicants or inventors).



For the IP5 Blocs, P.R. China had the largest proportion of filings made at home in 2021 with 92 percent. Among the IP5 blocs, the EPC states had³⁹ the lowest proportion with 53 percent.

Most national filings are made by residents of the countries concerned. To a large extent, filings abroad are made using regional or PCT procedures.

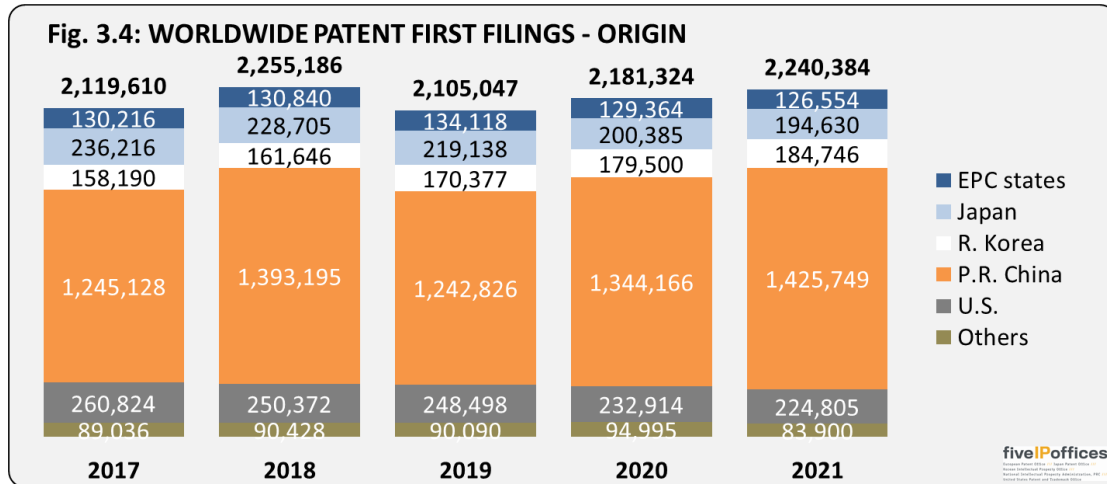
³⁹ For the purpose of reporting statistics for the EPC states considered as a bloc, a filing by a resident in an EPC state to another EPC state or to the EPO is considered to be filed within the bloc of origin. See the EPO section of Chapter 2 for a listing of the EPC states.

FIRST FILINGS

For the first filings counted in this section, all of the following appear only once: direct national, direct regional filings, and PCT international phase filings.

The process of obtaining patent protection starts with the first filing, an initial patent filing made to protect an invention or an innovation prior to any subsequent filings to extend the protection to other countries.

Figure 3.4 shows the development of first filings in the major filing blocs of origin (residence of first-named applicants or inventors).



The number of worldwide first filings increased by 3 percent from 2020 to 2021. After a marked decline in 2019, first filings from P.R. China continued to increase by 6 percent. First filings from R. Korea increased by 3 percent. First filings in the EPC states decreased by 2 percent, while first filings from Japan and U.S. each decreased by 3 percent.

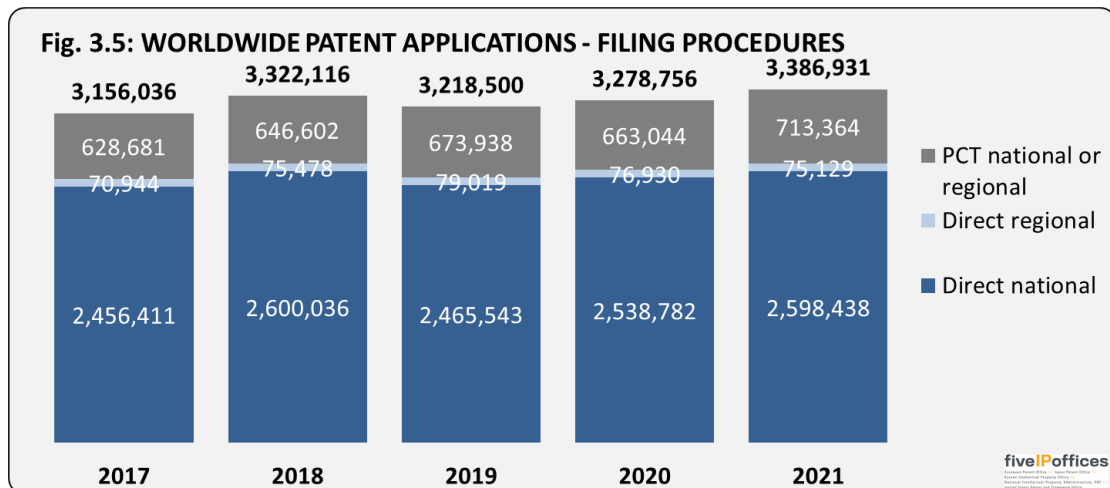
Comparison of Figure 3.2 and 3.4 enables an evaluation of the numbers of subsequent filings, where the first filing for an invention at one office leads on to further filings, either elsewhere or at the same office. From the difference in the total for 2021 between Figure 3.2 and Figure 3.4, it can be estimated that there are 710,592 subsequent filings, meaning that on average there were 0.33 subsequent filings per first filing made in 2020, assuming a one year delay ($710,592 / 2,181,324 = 0.33$).

PATENT APPLICATIONS

Patent applications counted in this section include direct national, direct regional, national stage PCT, and regional stage PCT applications.

Figs. 3.5, 3.6, and 3.7 describe the development of the numbers of patent applications in terms of requests for patents that entered a grant procedure. Note that direct national and direct regional applications enter a grant procedure when filed, while, in the case of PCT applications, the grant procedure is delayed to the end of the international phase⁴⁰. In the following figures, the number of PCT applications consists of a count of the applications that entered a national or regional stage in the corresponding year. This leads to higher numbers than in the previous section, because one PCT international filing usually enters into several national or regional procedures. For example, one PCT application (as reported in Figure 3.1) may result in an EPO PCT regional phase entry, a U.S. PCT national phase entry, and an Australian PCT national phase entry, thus producing three PCT national/regional phase entry applications.

Figure 3.5 shows the development of worldwide patent applications broken down by filing procedures.

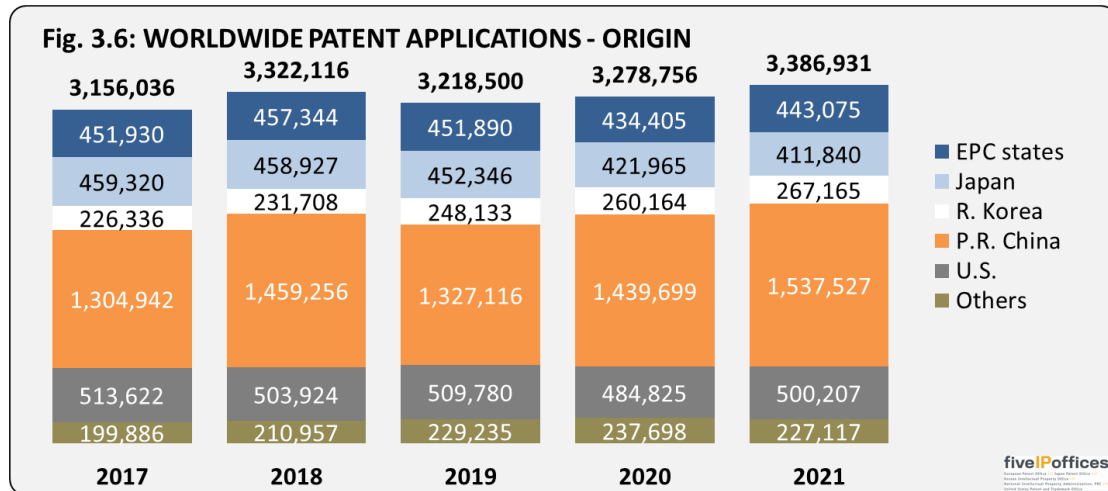


In 2021, nearly 3.4 million patent applications were filed worldwide. This represents a 3 percent increase compared to 2020 and a 5 percent increase from 2019.

The number of direct national applications increased by 2 percent, while the number of direct regional decreased by 2 percent. The number of PCT national/regional applications increased by 8 percent.

⁴⁰ The national or regional phase under the PCT is entered up to 30 months or 31 months after the priority date of the first filing.

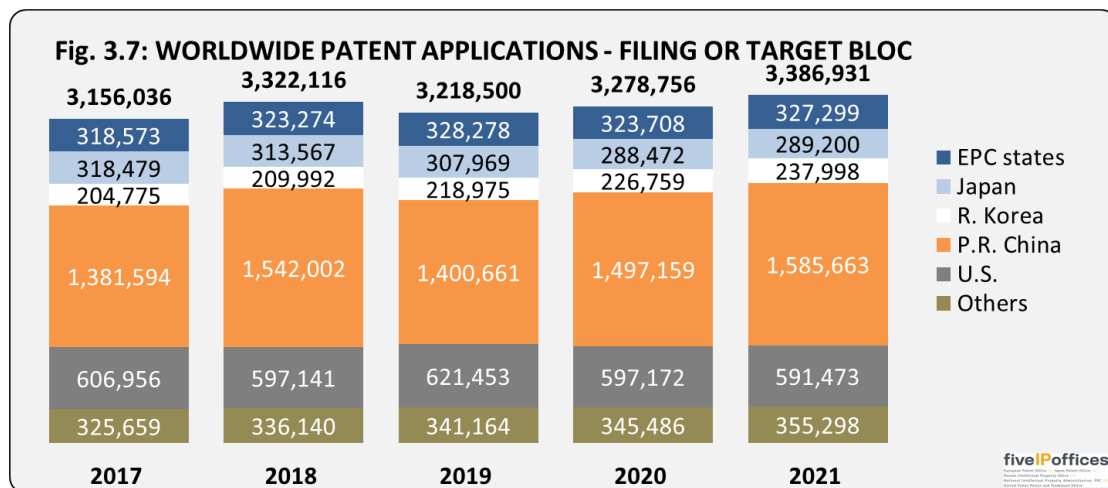
Figure 3.6 shows the origins (residence of first-named applicants or inventors) of the worldwide patent applications of Figure 3.5 entering a national or regional grant procedure.



In 2021, the largest share of applications in the IP5 Bloc originated from P.R. China. P.R. China also had the largest percentage increase in applications by origin in 2021 (7 percent). The number of applications from the EPC states, R. Korea, and the U.S. increased by 2 percent, 3 percent, and 3 percent, respectively, while the number of applications from Japan decreased by 2 percent.

The data for the Others can only be compared between years with care. The changes from year to year reflect a different number of countries reporting their count of applications as well as changes in the numbers of applications.

Figure 3.7 shows the distribution of the worldwide patent applications according to the filing blocs and is based on the same data as in Figure 3.5 and Figure 3.6.



In 2021, applications increased by 6 percent in P.R. China, 5 percent in R. Korea, and 1 percent in the EPC states, while applications decreased by 1 percent in the U.S. Applications in Japan stayed about the same in 2021. Worldwide, applications increased by about 3 percent.

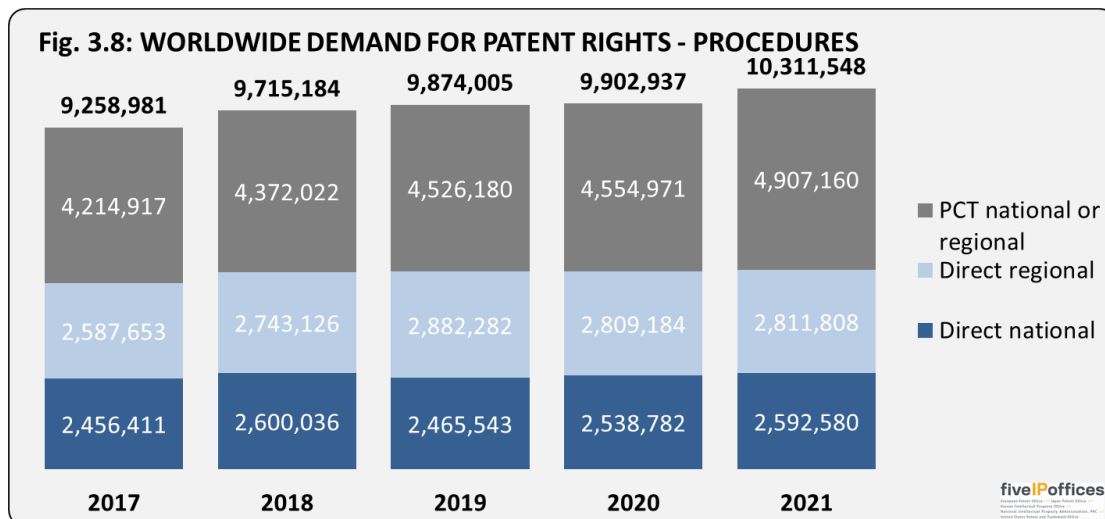
DEMAND FOR NATIONAL PATENT RIGHTS

Patent applications counted in this section include direct national applications, national stage PCT applications, and designated countries, both in direct regional and in regional stage PCT applications.

With an increasing use of PCT and regional systems, and also the increasing number of countries joining such systems, the number of applications filed corresponds to a large number of demands for national patent rights. The number cumulates designated countries that are covered by the applications. This effectively measures the number of national patent applications that would have been necessary to seek patent protection in the same countries if there were no PCT or regional systems.

The direct national applications have effect in one country only, as does any PCT application entering one national phase procedure. But direct regional applications and PCT applications entering a regional system are demands for almost each and every individual member country. So, demand counts for regional offices are expanded to the numbers of countries covered by regional systems⁴¹.

Figure 3.8 shows the demand for national patent rights broken down by filing procedures.

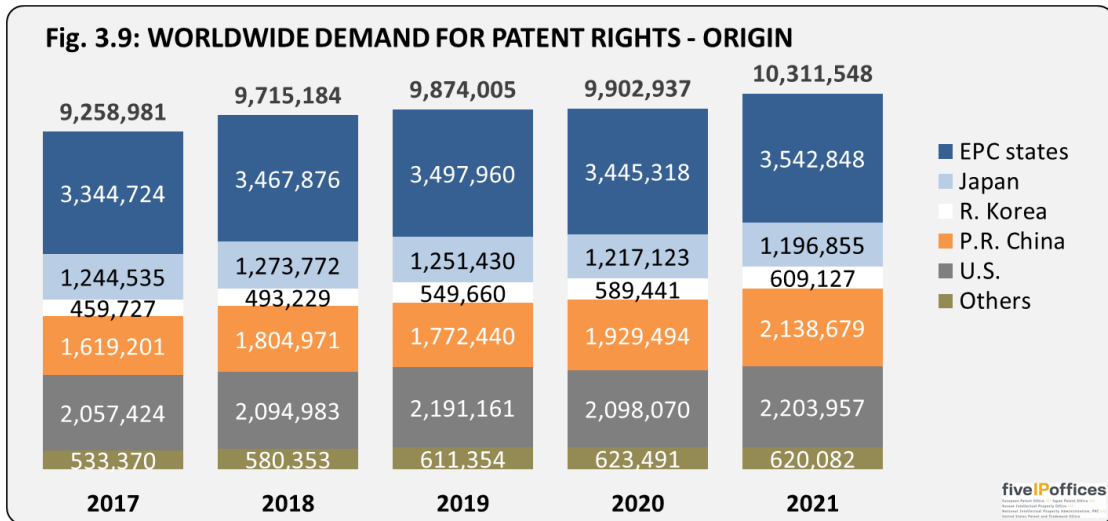


From 2020 to 2021, the worldwide demand for patent rights increased by just over 4 percent. In 2021, there was a large increase in the use of PCT national or regional filing procedures, at nearly 8 percent. The use of direct national procedures increased by 2 percent, while the use of the direct regional procedures stayed about the same.

Centralized filing procedures (PCT and direct regional) made up about 75 percent of the total demand in 2021. This illustrates the importance of these procedures to help users to expand their patent protection without needing to make separate applications to every country of interest.

⁴¹ At the end of 2021, 90 states were party to a regional patent system, ARIPO 20 (Harare Agreement), EAPC 8, EPC 39, GCCPO 6 and OAPI 17. Also, at the end of 2021, 153 states were party to the PCT (157 end of March 2023). In addition, national patents can also be created in other states that have extension or validation agreements with the EPO (see Chapter 2).

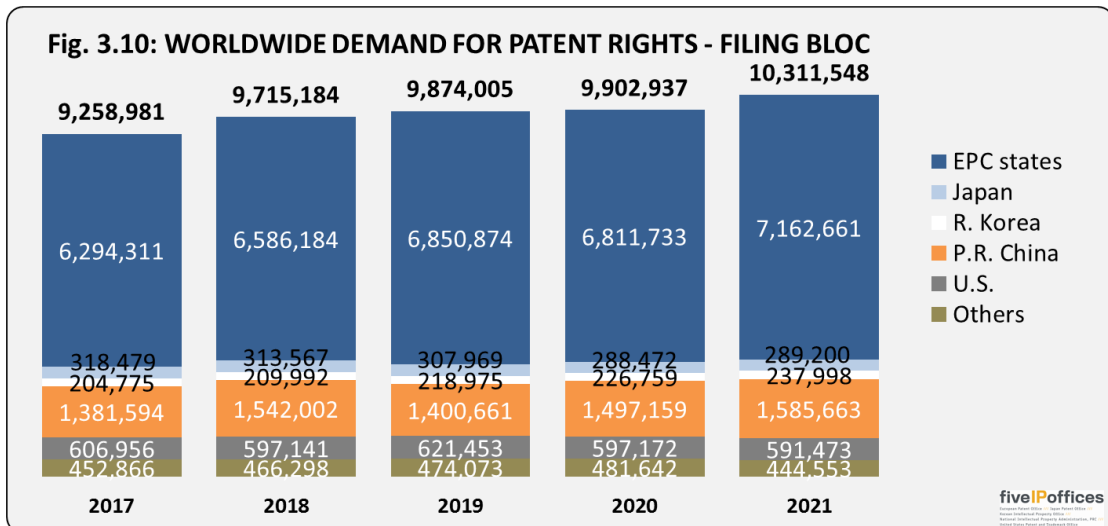
Figure 3.9 shows the demand for national patent rights by blocs of origin (residence of first-named applicants or inventors) and is based on the same data as Figure 3.8.



From 2020 to 2021, the worldwide demand for patent right increased by 4 percent. Demand increased by 3 percent from the EPC states and R. Korea, 11 percent from P.R. China, and 5 percent from the U.S., while demand from Japan decreased by 2 percent.

The large share of the EPC states reflects, among other factors, the intensive use of the international and regional systems there. This is shown even more clearly in the next chart for the distribution of the patent rights.

Figure 3.10 shows the demand for national patent rights according to the filing blocs and is based on the same data as in Figure 3.8 and Figure 3.9.

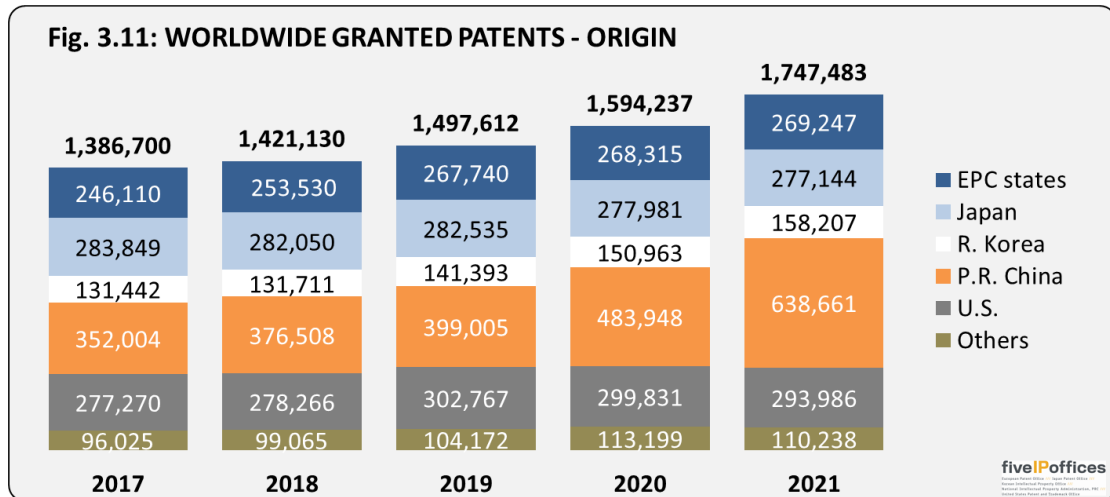


This chart illustrates the influence of regional patent systems. In 2021, the demand for national patent rights increased in the EPC states and R. Korea by 5 percent each, and in P.R. China by 6 percent. Demand in the U.S. decreased by 1 percent, while demand in Japan stayed about the same as one year earlier.

GRANTED PATENTS

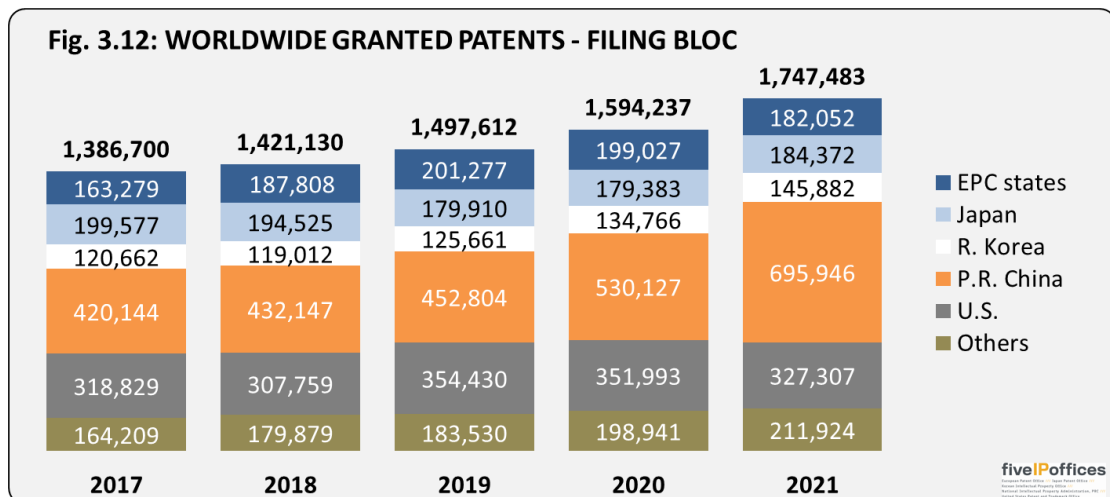
The development of the use of patents is shown in this section in terms of grants.

Figure 3.11 shows the granted patent by blocs of origin (residence of first-named applicants or inventors).



The total number of worldwide granted patents increased by nearly 10 percent in 2021. Patents granted to residents of the U.S. decreased by 2 percent. For residents of R. Korea, granted patents increased by 5 percent, and by 32 percent for residents of P.R. China. Patents granted for residents of the EPC states and Japan stayed about the same as a year earlier.

Figure 3.12 displays the breakdowns of the numbers of granted patents in each of the blocs.

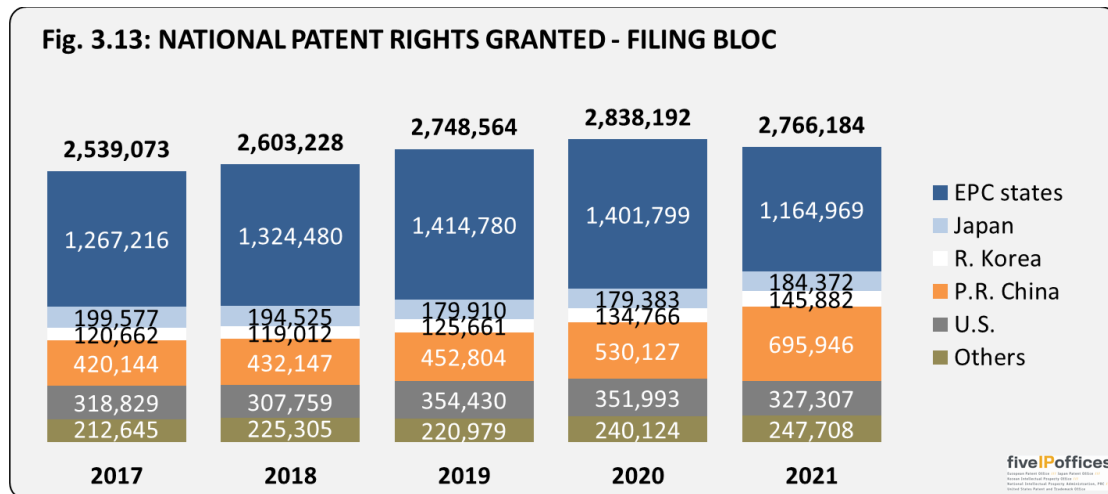


P.R. China had the largest percentage increase at 31 percent. The numbers of granted patents in the EPC member states and in the U.S. decreased by 9 percent and 7 percent, respectively. It increased by 8 percent in R. Korea and by 3 percent in Japan.

The data for Others should be compared between years with caution. The changes from year to year may reflect different numbers of countries reporting their counts of grants as well as changes in the numbers of grants.

Granted patents are counted only once per office, although the same invention may lead to grants at several offices. However, each grant action by a regional office (e.g. the EPO) can lead to as many national patents as the number of member states that have been designated. This has an effect only in the EPC states and Others, as shown in the following Figure 3.12.

Figure 3.13 shows validated national grants resulting from the decisions reported in Figure 3.12. Direct national grants are counted only once, but the counts for regional office grants are replicated over the numbers of countries for which the grant is validated. This gives a representation in terms of national patent rights obtained in each bloc.



In 2021, nearly 2.8 million patent rights were granted, which represents a 3 percent decrease compared to 2020.

The fact that the EPC states bloc is made up of many countries, with an option for a centralized grant procedure at the EPO, explains why the number of patent rights granted there in Figure 3.13 is much larger than the number of grant actions shown in Figure 3.12.

The number of national patent rights granted by the EPC states decreased by 17 percent. Information for the Japan, P.R. China, R. Korea, and U.S. blocs is the same as in Fig 3.12 as on the previous page.

The data for Others should be compared between years with caution. The changes from year to year may reflect different numbers of countries reporting their count of grants as well as changes in the numbers of grants and countries covered there by regional patents.

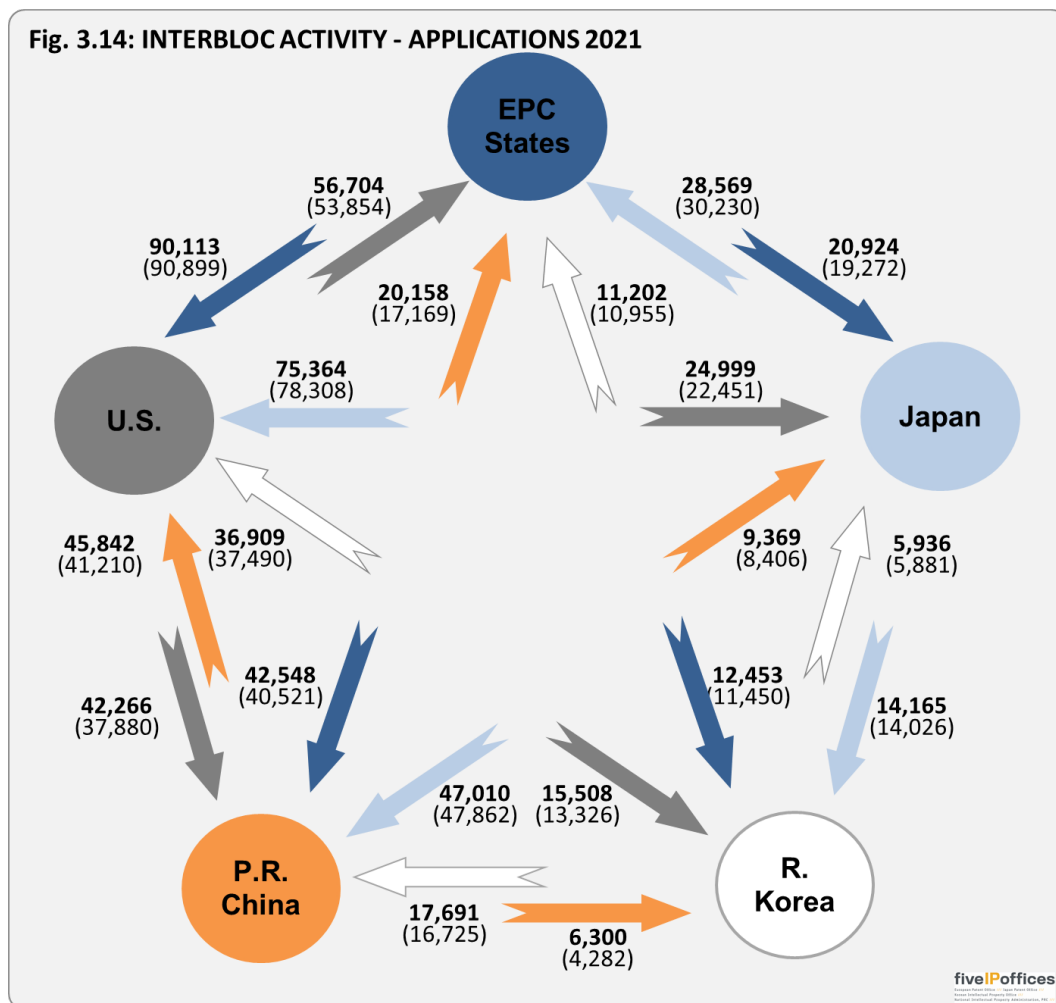
INTER-BLOC ACTIVITY

In this section, the flows between the different blocs and especially the IP5 Blocs are analysed first in terms of applications and then in terms of patent families.

FLOWS OF APPLICATIONS

Figure 3.14 shows the flows of patent applications between IP5 Blocs (residence of first-named applicants or inventors, as in Figure 3.5) in 2021, with 2020 figures given in parentheses.

Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. Direct national and direct regional applications are counted only once. PCT applications are replicated over the numbers of national or regional procedures that are started.



As a general pattern, when applying abroad there were more applications in the U.S. than in any of the other IP5 Blocs. When filing abroad, U.S. applicants applied more in the EPC states than in any of the other IP5 Blocs. In 2021, the largest gap between blocs are between Japan and U.S., Japan and P.R. China, and between EPC states and U.S.

In 2021, five of the twenty inter-bloc flows decreased to some extent. Three of the four flows from Japan decreased. All flows from P.R. China and the U.S. increased. The flow from P.R. China to the U.S. increased, while other flows to the U.S. decreased.

PATENT FAMILIES

A patent family is a group of patent filings that claim the priority of a single first filing.

The information in this section on the flows of patent families between blocs was obtained from the DOCumentDataBase (DOCDB)⁴² of worldwide patent publications. The statistics are based on the references to priorities that were given in published applications and grants. For counts of first filings in this section, the numbers of domestic national filings are taken, as in Figure 3.4. Due to the delay in publication (relative to the time of filing), patent family counts can only be reported with accuracy after several years have passed.

The following Table 3 shows the numbers of first filings per bloc and details of flows of patent families between blocs for the priority years 2017 and 2018. Each percentage under a number translates this number into a proportion of the number of first filings made in the initial filing bloc where the priority filings were made.

Table 3: NUMBERS OF PATENT FAMILIES

Year of priority: 2017

Bloc of origin from which priority is claimed	First filings in bloc of origin	Flows to subsequent filings								IP5 Patent Families from bloc of origin
		First filings in bloc of origin leading to priority claims in filings in:								
		Any other bloc	Any other IP5 bloc	EPC states	Japan	R. Korea	P.R. China	U.S.	Other countries	
EPC states	131,482	53,256 (40.5%)	51,863 (39.4%)		16,066 (12.2%)	10,098 (7.7%)	35,311 (26.9%)	46,492 (35.4%)	18,401 (14.0%)	6,979 (5.3%)
Japan	236,216	70,081 (29.7%)	68,120 (28.8%)	25,931 (11.0%)		14,614 (6.2%)	46,196 (19.6%)	57,046 (24.1%)	16,425 (7.0%)	6,138 (2.6%)
R. Korea	158,190	23,833 (15.1%)	23,582 (14.9%)	8,575 (5.4%)	5,433 (3.4%)		14,555 (9.2%)	21,144 (13.4%)	2,987 (1.9%)	3,155 (2.0%)
P.R. China	1,245,128	31,658 (2.5%)	29,979 (2.4%)	12,763 (1.0%)	6,121 (0.5%)	3,593 (0.3%)		27,245 (2.2%)	7,181 (0.6%)	2,412 (0.2%)
U.S.	260,824	89,718 (34.4%)	81,939 (31.4%)	68,071 (26.1%)	29,164 (11.2%)	20,244 (7.8%)	58,015 (22.2%)		46,601 (17.9%)	13,086 (5.0%)
IP5 blocs subtotal	2,031,840	268,546 (13.2%)	255,483 (12.6%)	115,340 (5.7%)	56,784 (2.8%)	48,549 (2.4%)	154,077 (7.6%)	151,927 (7.5%)	91,595 (4.5%)	31,770 (1.6%)
Others	89,036	18,406 (20.7%)	17,365 (19.5%)	7,015 (7.9%)	3,212 (3.6%)	1,768 (2.0%)	7,779 (8.7%)	14,896 (16.7%)		1,156 (1.3%)
Global total	2,120,876	286,952 (13.5%)	272,848 (12.9%)	122,355 (5.8%)	59,996 (2.8%)	50,317 (2.4%)	161,856 (7.6%)	166,823 (7.9%)	91,595 (4.3%)	32,926 (1.6%)

Year of priority: 2018

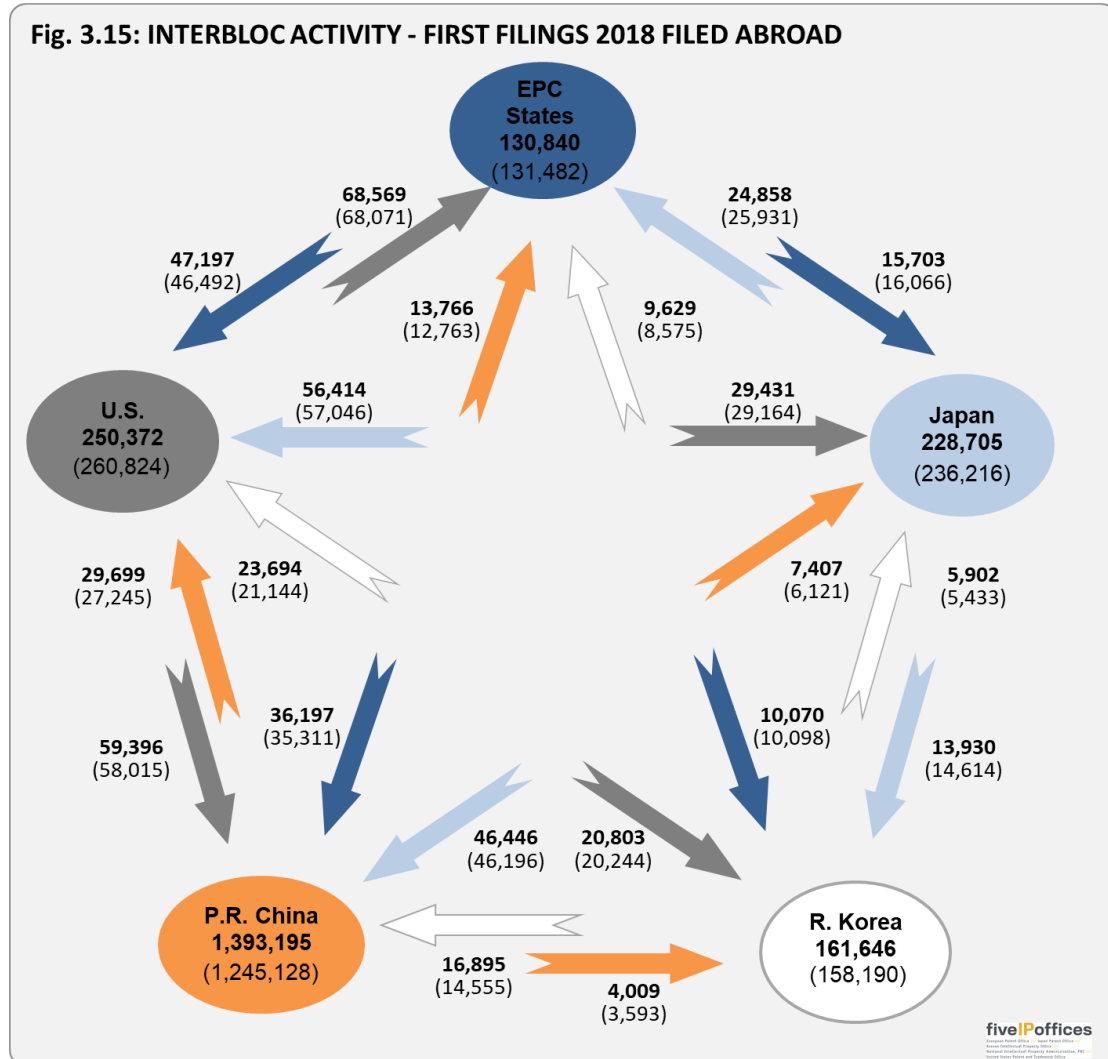
Bloc of origin from which priority is claimed	First filings in bloc of origin	Flows to subsequent filings								IP5 Patent Families from bloc of origin
		First filings in bloc of origin leading to priority claims in filings in:								
		Any other bloc	Any other IP5 bloc	EPC states	Japan	R. Korea	P.R. China	U.S.	Other countries	
EPC states	130,840	54,009 (41.3%)	52,838 (40.4%)		15,703 (12.0%)	10,070 (7.7%)	36,197 (27.7%)	47,197 (36.1%)	17,109 (13.1%)	6,867 (5.2%)
Japan	228,705	70,492 (30.8%)	68,296 (29.9%)	24,858 (10.9%)		13,930 (6.1%)	46,446 (20.3%)	56,414 (24.7%)	16,021 (7.0%)	5,688 (2.5%)
R. Korea	161,646	26,436 (16.4%)	26,242 (16.2%)	9,629 (6.0%)	5,902 (3.7%)		16,895 (10.5%)	23,694 (14.7%)	3,085 (1.9%)	3,480 (2.2%)
P.R. China	1,393,195	35,468 (2.5%)	33,132 (2.4%)	13,766 (1.0%)	7,407 (0.5%)	4,009 (0.3%)		29,699 (2.1%)	7,497 (0.5%)	2,458 (0.2%)
U.S.	250,372	92,344 (36.9%)	84,336 (33.7%)	68,569 (27.4%)	29,431 (11.8%)	20,803 (8.3%)	59,396 (23.7%)		46,957 (18.8%)	13,202 (5.3%)
IP5 blocs subtotal	2,164,758	278,749 (12.9%)	264,844 (12.2%)	116,822 (5.4%)	58,443 (2.7%)	48,812 (2.3%)	158,934 (7.3%)	157,004 (7.3%)	90,669 (4.2%)	31,695 (1.5%)
Others	90,428	19,960 (22.1%)	18,984 (21.0%)	6,858 (7.6%)	3,395 (3.8%)	1,885 (2.1%)	8,372 (9.3%)	16,219 (17.9%)		1,193 (1.3%)
Global total	2,255,186	298,709 (13.2%)	283,828 (12.6%)	123,680 (5.5%)	61,838 (2.7%)	50,697 (2.2%)	167,306 (7.4%)	173,223 (7.7%)	90,669 (4.0%)	32,888 (1.5%)

Source: EPO DOCDB Database

Figure 3.15 shows the flows of patent families from first filings (at the patent offices of the specified IP5 Bloc) to subsequent filings among the IP5, with application counts based on the bloc of the patent office from which the claimed priority was filed. The number given for each bloc is the total number of first filings in 2018. The flow figures

⁴² DOCDB is the EPO master documentation database of patent publications, with worldwide coverage containing bibliographic data, abstracts and citations (but not the full text of the applications).

between blocs of origin and target blocs indicate the numbers of 2018 first filings from the bloc of origin that led to subsequent filings in the target bloc. The comparable figures for 2017 are given in parentheses.



From information in Table 3, out of all first filings in the IP5 Blocs in 2018 (2,164,758), 13 percent formed patent families that included at least one of the remaining IP5 Blocs (278,749). Proceeding to a higher degree of selectivity, only 2 percent of all first filings in the IP5 Blocs in 2018 formed IP5 patent families, where activities of first and/or subsequent filings were made in all the IP5 Blocs.

The IP5 patent family proportion of first filings in 2018 differed considerably according to the bloc of origin of the first filings, as can be seen in Table 3 (EPC states 5.2 percent, Japan 2.5 percent, R. Korea 2.2 percent, P.R. China 0.2 percent, U.S. 5.3 percent, and for Others 1.3 percent).

Figure 3.16 presents a separate diagram for each IP5 Bloc to display the percentages of first filings in that Bloc that led to subsequent filings in each of the other IP5 Blocs. The diagrams show graphical displays of 2018 patent family data as presented in Table 3. Four coloured circles appear in each diagram, with each circle representing the percentage of subsequent filings in an IP5 Bloc that resulted from the number of first filings in the bloc of origin. Areas where the circles overlap correspond to subsequent

filings in more than one other IP5 Bloc. Recall that, in the case of the EPC states, the activities at national offices are included as well as at the EPO.

Above each diagram appears the total number of first filings that were received in each of the IP5 Blocs in 2018. Then the proportions of those first filings that led on to subsequent filings in each other bloc are shown. Some of these percentages also appear in the lower part of Table 3.

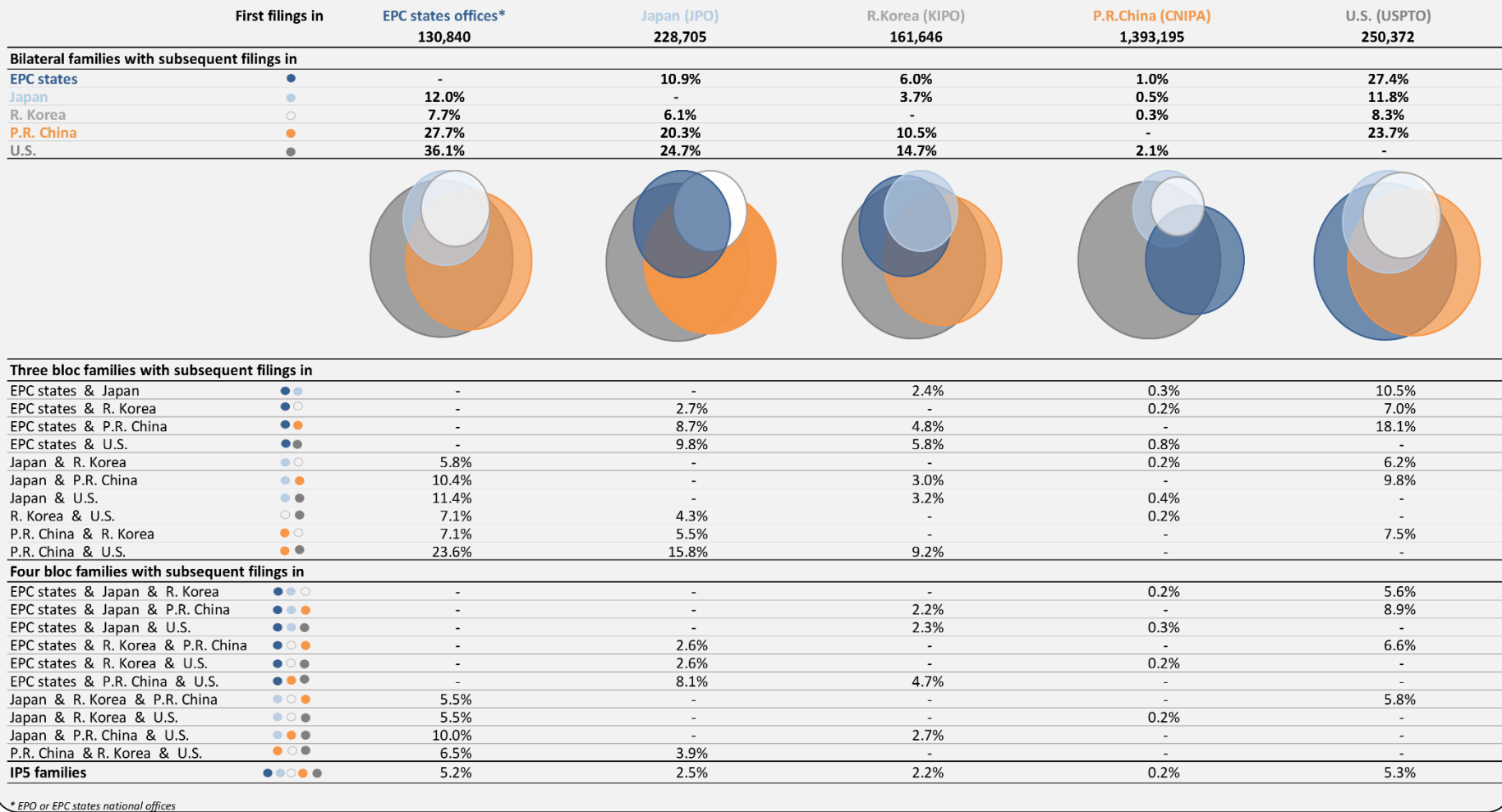
Underneath the coloured diagrams, the percentages next to the bloc combinations show subsidiary percentages of subsequent filings that flowed to more than one other IP5 Bloc.

For instance, patent families from first filings in EPC member states that were subsequently filed in the P.R. China and the U.S. blocs are indicated in the graphical display by the area where the orange and grey circles overlap in the first diagram. The corresponding percentage is 23.6 percent, as shown next to the pair of orange and grey dots that appear lower down in the figure. The non-overlapping areas of the graphical displays are representative of the percentage or number of patent families that were not subsequently filed in any of the other IP5 Blocs. For instance, for first filings in EPC states, the small non-overlapping area of the Japan circle indicates that only a small percentage and number of the patent families from EPC states were filed in Japan without also being filed in at least one of the other IP5 Blocs, as well.

The last row of the table in Figure 3.16 shows the proportions of IP5 patent families, as also appear in the last column of the lower part of Table 3.



Fig. 3.16: 2018 PATENT FAMILIES - PERCENTAGES OF FIRST FILINGS WITH SUBSEQUENT FILINGS IN OTHER IP5 BLOCS



From Figure 3.16 and Table 3, the 2018 data indicate that the U.S. market may be considered as the most important foreign market for the other IP5 Blocs since, for each of those blocs, subsequent applications in the U.S. represent the highest percentages among target blocs. The second most important market for the other IP5 Blocs is P.R. China. From U.S., the most important foreign market is the EPC States, followed by P.R. China. From P.R. China, the most important foreign market is U.S., followed by the EPC States.

For the first filings in the EPC member states, the largest percentage of subsequent filings is directed to the U.S. (36.1 percent). First filings in the EPC member states tend to result in a higher percentage of subsequent filings overseas, as compared to the first filings in other IP5 Blocs, except for the case of first filings from U.S. going to R. Korea.

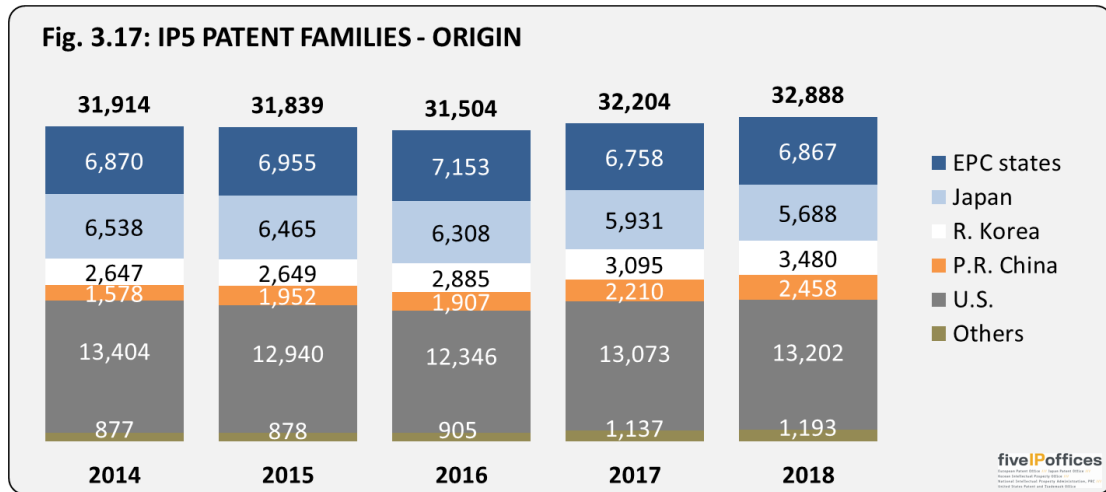
For the first filings in Japan, the largest percentage of subsequent applications is directed to the U.S. (24.7 percent) and P.R. China is the next largest (20.3 percent), while the EPC states is 10.9 percent.

For the first filings in R. Korea, as with the other blocs, the percentage of subsequent applications filed in the U.S. (14.7 percent) is the largest, followed by P.R. China (10.5 percent). The percentage of subsequent applications filed in the EPC member states is 6.0 percent.

For the first filings in P.R. China, the percentage of subsequent applications filed in the U.S. (2.1 percent) is the largest. The percentage filed in the EPC member states is the next largest (1.0 percent), while in the Japan is 0.5 percent. Despite the low proportions of first filings in P.R. China that led to subsequent applications anywhere else, rapidly growing numbers of first filings have resulted in continued growth of the absolute numbers of patent families flowing out to other IP5 Blocs, as can be seen by comparing the 2017 and the 2018 data in Table 3 (29,979 compared to 33,132, respectively).

Among the first filings in the U.S., the highest percentage flows to the EPC member states (27.4 percent). The percentage filed in the P.R. China (23.7 percent) is the next highest, while filings in Japan and R. Korea are at 11.8 percent and 8.3 percent, respectively.

Figure 3.17 shows the development over time of IP5 patent families by bloc of origin (residence of first-named applicants or inventors) of the priority forming filings.



The total number of IP5 patent families in 2018 was 32,888 of which 40 percent were from the U.S., 21 percent were from the EPC states, 17 percent were from Japan, 11 percent were from R. Korea, 7 percent were from P.R. China, and 4 percent were from Others.

Chapter 4

PATENT ACTIVITY AT THE IP5 OFFICES

This chapter presents trends in patent application filings and grants at the IP5 Offices only, including also some breakdowns by technologies. While in Chapter 3 the latest data lag by one year, most of the information that appears here includes data for last year⁴³. The patent office statistics for Europe in this chapter are for the EPO only and do not include statistics from the EPC states' national offices. Whereas the EPO is indicated from the viewpoint of an office, the EPC states are still indicated as a bloc of origin.

The activities at the IP5 Offices are demonstrated by counts of the patent applications that were filed. For patent applications, the representations are analogous to those appearing in Chapter 3 (Figs. 3.5, 3.6, 3.7, and 3.14) which show the numbers of requests for patents as patent applications⁴⁴. Direct applications to the offices are counted at the date of filing. PCT applications are counted at the moment they enter the national or regional phase. Direct national and direct regional filings are counted only once. PCT national/regional phase filings are replicated over the numbers of procedures that are started.

The demand at the EPO is given in terms of applications rather than in terms of designations.

For granted patents, the statistics combine information by office and bloc of origin, displaying comparisons by year of grant. The representations here are similar to those for Figure 3.11, where granted patents are counted only once, except that, for EPC states, only the EPO is considered as the granting authority. Hereinafter, "patent grants" will signify the number of grant actions (issuances or publications) by the IP5 Offices.

For information about specific terminology and associated definitions used in Chapter 4, please refer to [Annex 2](#).

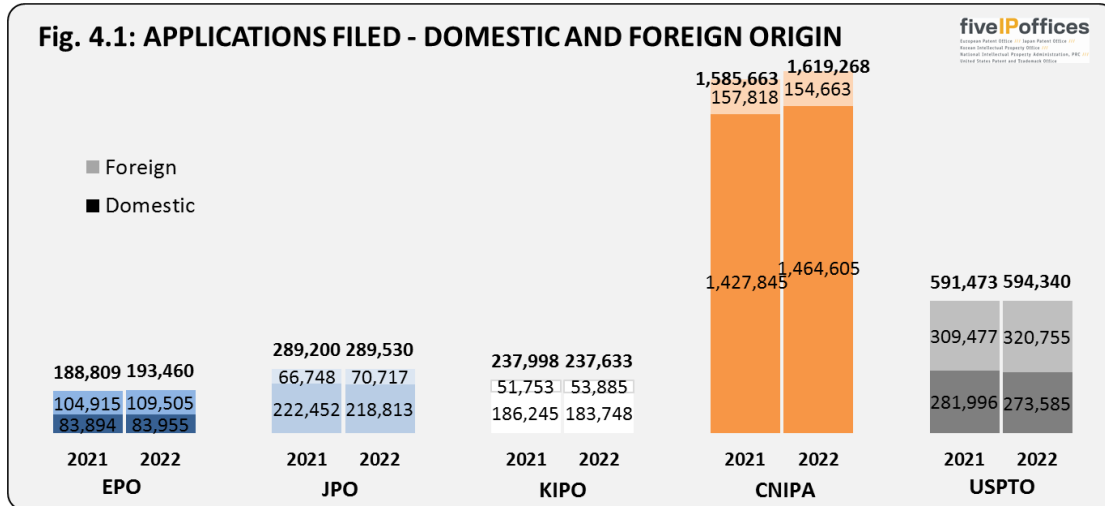
⁴³ The statistical tables file found in the web version of this report includes extended time series for much of the data included in this chapter. www.fiveipoffices.org/statistics/statisticsreports

⁴⁴ See the section "Guide to figures in Chapter 3" at the beginning of Chapter 3.

PATENT APPLICATIONS FILED

ORIGIN

Figure 4.1 shows the number of patent applications that were filed at each of the IP5 Offices during the two most recent years, broken down by domestic and foreign origin (based on the residence of first-named applicants or inventors). For the EPO, domestic applications correspond to those filed by residents of the EPC states.



In 2022, a total of 2,934,231 patent applications were filed at the IP5 Offices, an increase of 1 percent from 2021 (2,893,143).

Patent applications increased by 2 percent at the EPO, 2 percent at the CNIPA, and stayed about the same at the JPO, the KIPO, and the USPTO.

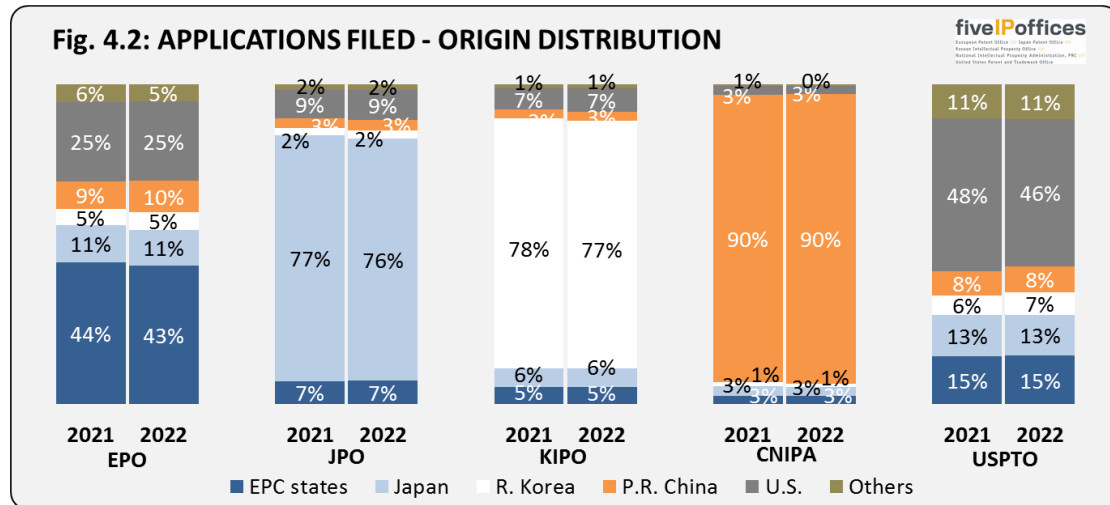
While domestic applications increased by 3 percent at the CNIPA, domestic applications decreased at the JPO, the KIPO, and the USPTO by 2, 1, and 3 percent, respectively. The number of domestic applications stayed about the same at the EPO in 2022. Foreign applications increased at the EPO, the JPO, the KIPO, and the USPTO, while they decreased at the CNIPA.

Table 4.1 shows the number of patent application filings by origin (residence of first-named applicants or inventors) relative to total filings at each office for 2022.

Table 4.1: 2022 APPLICATIONS FILED – ORIGIN

Office Origin	EPO	JPO	KIPO	CNIPA	USPTO	Total
EPC States	83,955	21,591	12,934	41,236	89,746	249,462
Japan	21,576	218,813	13,861	45,259	75,998	375,507
R. Korea	10,367	7,149	183,748	18,262	41,817	261,343
P.R. China	19,041	9,842	6,320	1,464,605	48,648	1,548,456
U.S.	48,088	26,874	17,683	43,090	273,585	409,320
Others	10,433	5,261	3,087	6,816	64,546	90,143
Total	193,460	289,530	237,633	1,619,268	594,340	2,934,231

Figure 4.2 shows the respective shares of patent applications filings by origin (residence of the first-named applicant or inventor) relative to the total number of applications filed at each office, for 2021 and 2022.



The shares of patent application filings by bloc of origin vary between Offices, but are generally consistent for 2021 and 2022 within each Office.

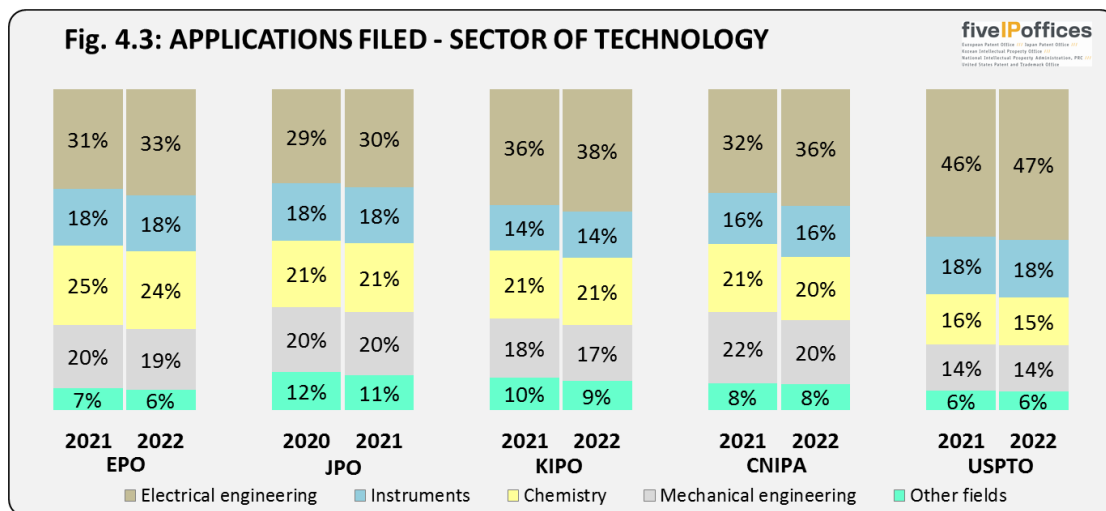
Caution should be used when comparing the numbers of applications between the IP5 Offices, due to the fact that the average number of claims contained in individual applications varies significantly. On average, in 2022, an application filed at the EPO contained 15.4 claims, (15.4 in 2021), while an application filed at the JPO contained an average of 12.3 claims (12.1 in 2021), and an application filed at the KIPO contained an average of 11.6 claims (11.3 in 2021). At the CNIPA, an application contained an average of 10.4 claims (10.1 in 2021), while one filed at the USPTO had 18.0 claims (18.1 in 2021) on average.

See the annexed statistical tables for longer trends.

SECTORS AND FIELDS OF TECHNOLOGY

Patents are classified by the IP5 Offices according to the IPC. This provides for a hierarchical system of language independent symbols for the classification of patents and utility models according to the different areas of technology to which they pertain. The WIPO established a concordance table to link the IPC symbols with thirty-five fields of technology grouped into five sectors⁴⁵. Figure 4.3 shows the distribution of applications at each office according to the five main sectors of technology.

The classification takes place at a different stage of the procedure in the offices. As a result, data are shown for the EPO, the KIPO, the CNIPA, and the USPTO for the filing years 2021 and 2022, while for the JPO the breakdown is given for the filing years 2020 and 2021⁴⁶.



The Electrical engineering sector is more prominent at the USPTO than in the other IP5 Offices. A higher proportion of applications are filed in the Chemistry sector at the EPO than in the other IP5 Offices. At each office, the distribution between sectors of technology was fairly stable between the two years reported. On the longer term, there are some slow variations that can be seen in the statistical annex.

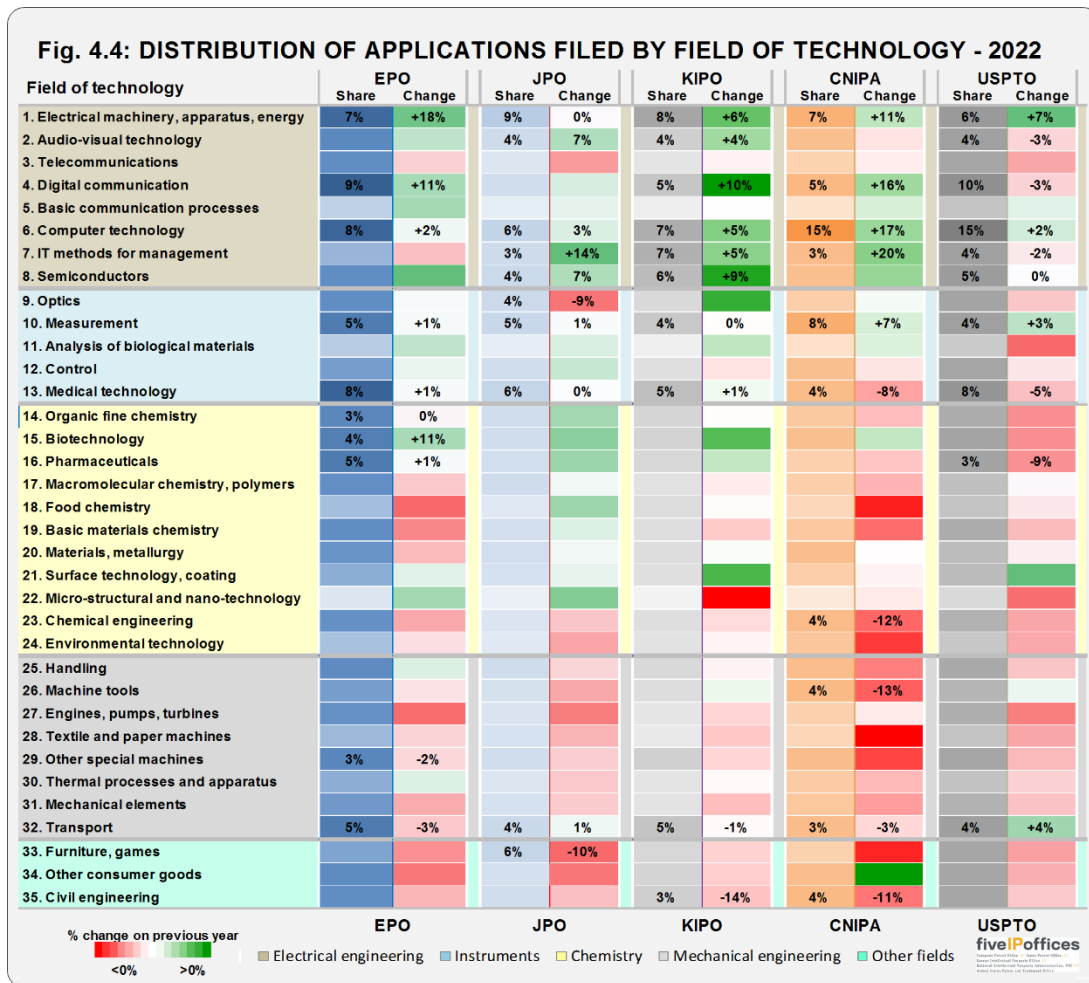
Figure 4.4 describes the distribution of the 2022⁴⁷ applications by the more detailed fields of technology at each office (left column for each IP5 Office), and the change in application counts compared to 2021 (right column). Actual shares and percentage changes in application counts are shown for the top 10 leading fields at each Office. The distribution of applications is represented by a color scale: the darker the shade of a color, the greater the share. The extent of change is reflected by a red-to-green color scale, the dark red indicates a marked decrease and dark green indicates a marked increase.

⁴⁵ www.wipo.int/meetings/en/doc_details.jsp?doc_id=117672

www.wipo.int/export/sites/www/ipstats/en/statistics/patents/xls/ipc_technology.xls

⁴⁶ JPO data are delayed by 1 year because the IPC assignment is completed just before the publication of the Unexamined Patent Application Gazette (18 months after the first filing).

⁴⁷ In the case of JPO data for 2021 are reported and compared to data for 2020.



Five fields are leading fields at all the IP5 Offices: 1. *Electrical machinery, apparatus, energy*; 6. *Computer technology*; 10. *Measurement*; 13. *Medical technology*; and 32 *Transport*.

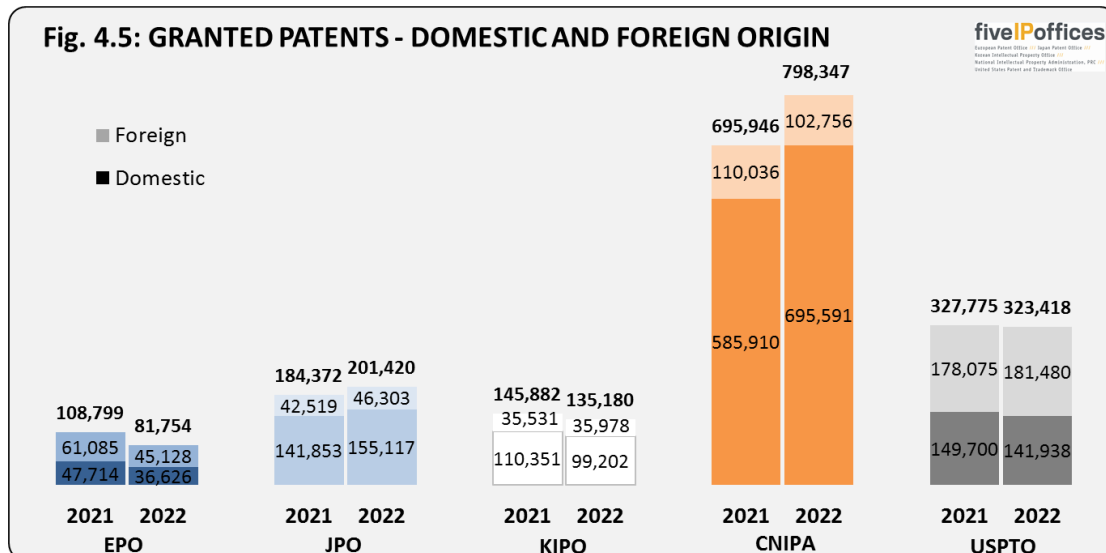
Six of the leading fields at the USPTO, five of the leading fields at the JPO and the KIPO, and four of the leading fields at the CNIPA are related to the Electrical engineering sector (1 to 8). At the JPO, the KIPO and the USPTO, most of leading fields are related to the Electrical engineering sector (1 to 8) or to Instruments sector (9 to 13). At the CNIPA and the EPO, the leading fields are more spread between sectors.

The highest shares in a field can be found in 6. *Computer technology* receiving 15 percent of all applications at the USPTO and at the CNIPA.

GRANTED PATENTS

ORIGIN

Figure 4.5 shows the numbers of granted patents by the IP5 Offices, according to the bloc of origin (residence of first-named owner or inventor).



Together the IP5 Offices granted a total of 1,540,119 patents in 2022. This was 77,345 more than in 2021 and represents an increase of 5 percent.

The numbers of granted patents increased in 2022 at the JPO, and the CNIPA by 9 percent and 15 percent, respectively. In contrast, the number of granted patents decreased at the EPO, the KIPO, and the USPTO by 25 percent, 7 percent, and 1 percent, respectively.

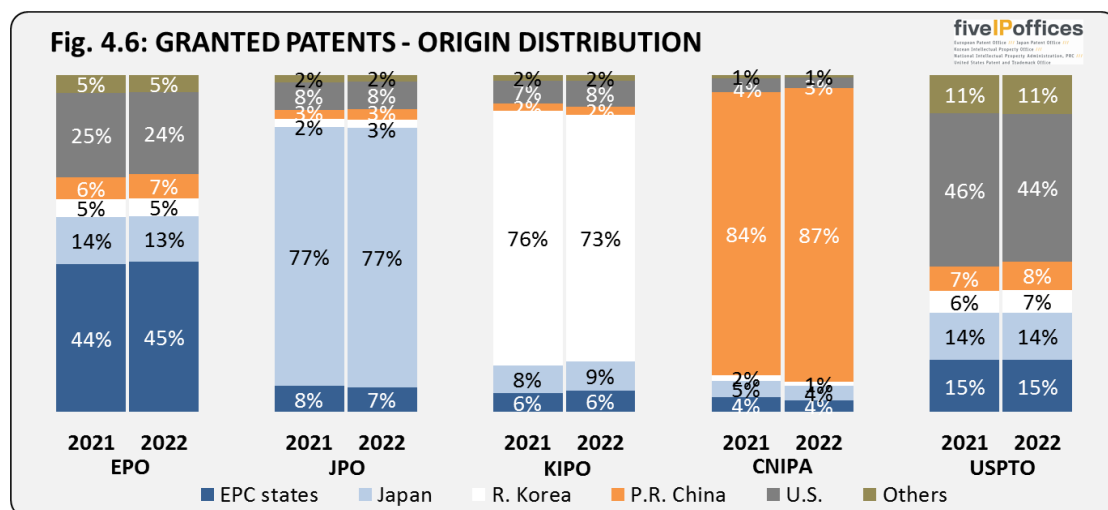
The differences between the IP5 Offices regarding the absolute numbers of granted patents can only be partly explained by differences in the numbers of corresponding applications. These numbers are also affected by differing grant rates and durations to process applications by the IP5 Offices (see the section below "Statistics on Procedures").

Table 4.2 shows the number of granted patents by origin (residence of first-named owner or inventor) at each office for 2022.

Table 4.2: 2021 GRANTED PATENTS – ORIGIN

Office Origin	EPO	JPO	KIPO	CNIPA	USPTO	Total
EPC States	36,626	14,806	8,606	28,384	49,862	138,284
Japan	10,932	155,117	11,617	33,301	45,656	256,623
R. Korea	4,383	5,088	99,202	10,464	22,031	141,168
P.R. China	5,846	6,465	3,069	695,591	27,100	738,071
U.S.	19,965	16,379	10,566	25,497	141,938	214,345
Others	4,002	3,565	2,120	5,110	36,831	51,628
Total	81,754	201,420	135,180	798,347	323,418	1,540,119

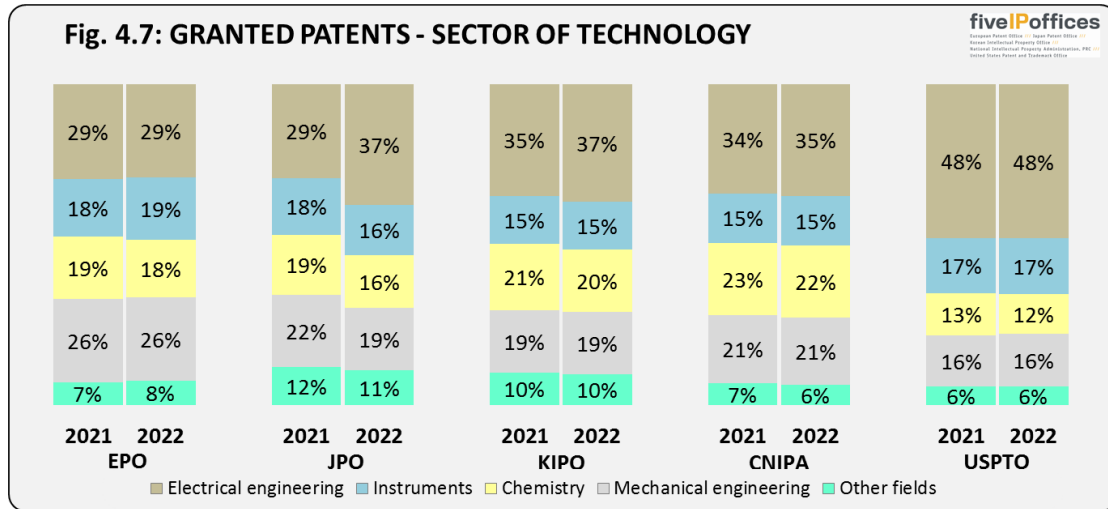
Figure 4.6 shows the shares of granted patents by origin (residence of first-named owner or inventor) at each office for 2021 and 2022.



At all offices, the distribution of granted patents is comparable to the distribution of applications that is shown in Figure 4.2. For CNIPA, the share of domestic patents is slightly lower than the share of domestic applications, which can be partially explained by the strong growth in domestic applications observed during the past few years. That is not yet reflected in the distribution of granted patents.

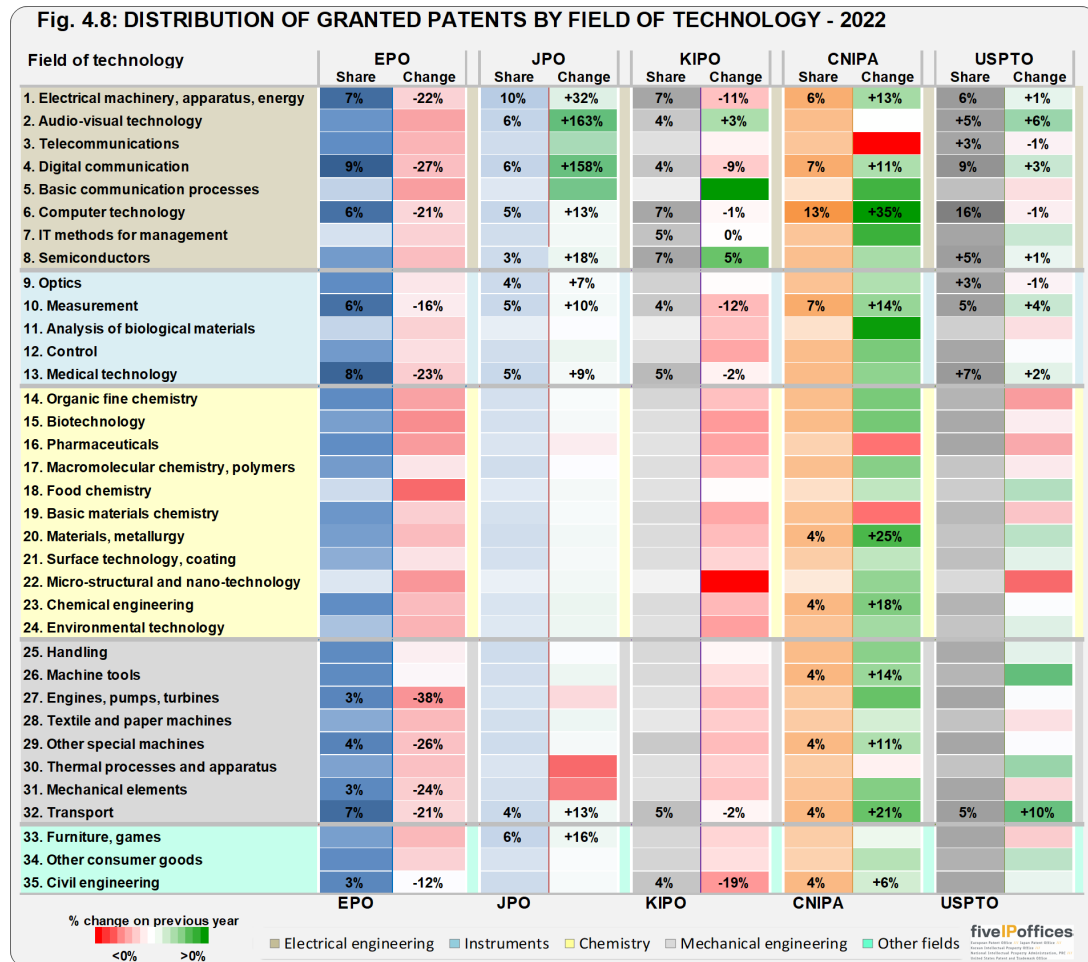
SECTORS AND FIELDS OF TECHNOLOGY

Figure 4.7 shows the distribution of the granted patents in 2021 and 2022 at each office according to the five main sectors of technology.



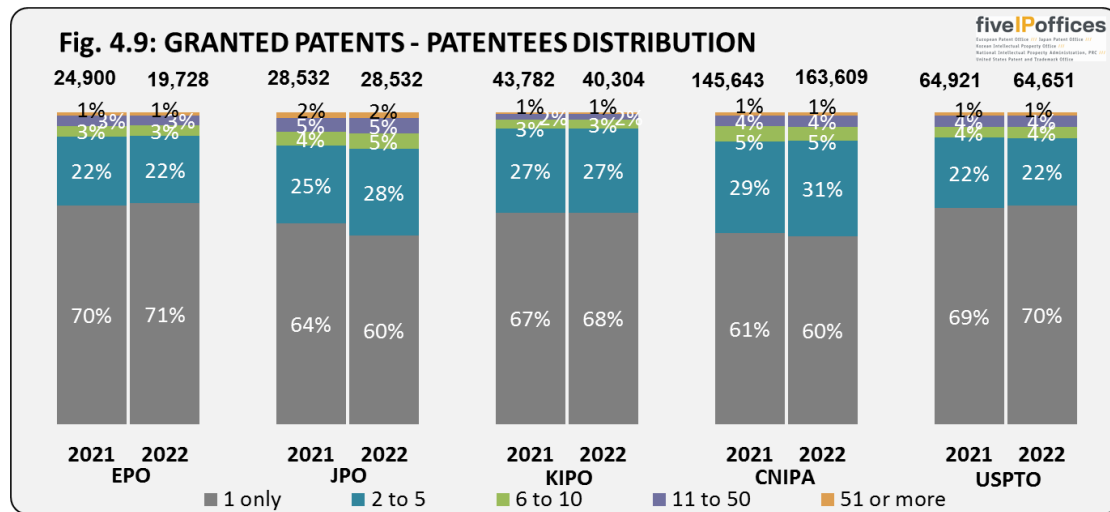
The distribution of granted patents by sectors is fairly consistent with that shown in Figure 4.3 for applications. For example, at the EPO, the share of Chemistry in granted patents is lower than the share in applications, and the share of Mechanical engineering is higher than in applications.

Figure 4.8 describes the distribution of the 2022 granted patents by the more detailed fields of technology at each office (left column for each IP5 Office), and the change in granted patents counts compared to 2021 (right column). Actual shares and percentage changes in patent counts are shown for the top 10 leading fields at each Office. The distribution of applications is represented by a color scale: the darker the shade of a color, the greater the share. The extent of change is reflected by a red-to-green color scale, the dark red indicates a marked decrease and dark green indicates a marked increase.



In 2022, 1. *Electrical machinery, apparatus, energy*; 4. *Digital communication*; 6. *Computer technology*; 10. *Measurement*, and 32. *Transport* were leading fields in all IP5 Offices in granted patents. At the EPO, 27. *Engines, pumps, turbines* and 31. *Mechanical elements* are leading fields in granted patents but not in applications. At the JPO, 4. *Digital communication* is a leading field in granted patents but not in applications. At the KIPO, the leading fields for granted patents and applications tend to be similar. At the CNIPA, 20. *Material, metallurgy* and 29. *Other special machines* are leading fields in granted patents but not in applications. At the USPTO, 3. *Telecommunications* and 9. *Optics* are leading fields in granted patents but not in applications. There was a large increase in granted patents in 2. *Audio-visual technology* and 4. *Digital communication* at the JPO.

Figure 4.9 shows the breakdown of patentees by their numbers of granted patents in 2021 and 2022.



This diagram shows that the distribution of grants to patentees is similar at each office in that it is highly skewed at all of them, because there are many more grantees that receive low numbers of grants rather than high numbers of grants. The proportions are generally consistent between 2021 and 2022 for each office. See the annexed statistical tables for longer term trends. These distributions are stable over the period.

At the CNIPA there is a slightly higher share of the “2 to 5” category than at the other IP5 Offices.

Most of the patentees received only one grant in a year. In 2022, the proportion was between 60 percent (CNIPA and JPO) and 71 percent (EPO). The proportion of patentees that received less than six patents was between 88 percent for the JPO and 95 percent for the KIPO. The proportion of patentees receiving 11 or more patents was higher at the JPO (5 percent) than at the USPTO (4 percent), at the EPO (3 percent), at the CNIPA (4 percent), and at the KIPO (2 percent).

In 2022, the average number of granted patents received remained unchanged for most offices when comparing 2022 to 2021. The numbers were four for the EPO, seven at the JPO, three at the KIPO, five at the CNIPA, and five at the USPTO. The greatest number of patents granted to a single applicant was 1,732 at the EPO, 4,556 at the JPO, 6,402 at the KIPO, 5,805 at the CNIPA, and 6,257 at the USPTO. This maximum number for 2022 was larger than for 2021 at the KIPO.

MAINTENANCE

A patent is enforceable for a fixed term that depends on actions taken by the owner. In the IP5 Offices, the maximum term is usually twenty years from the date of filing the application. In order to maintain protection during this period, the applicant has to pay what are variously known as renewal, annual or maintenance fees in the countries for which the protection pertains. Maintenance systems differ from country to country. In most jurisdictions, including those of the IP5 Offices, protection expires if a renewal fee is not paid in due time.

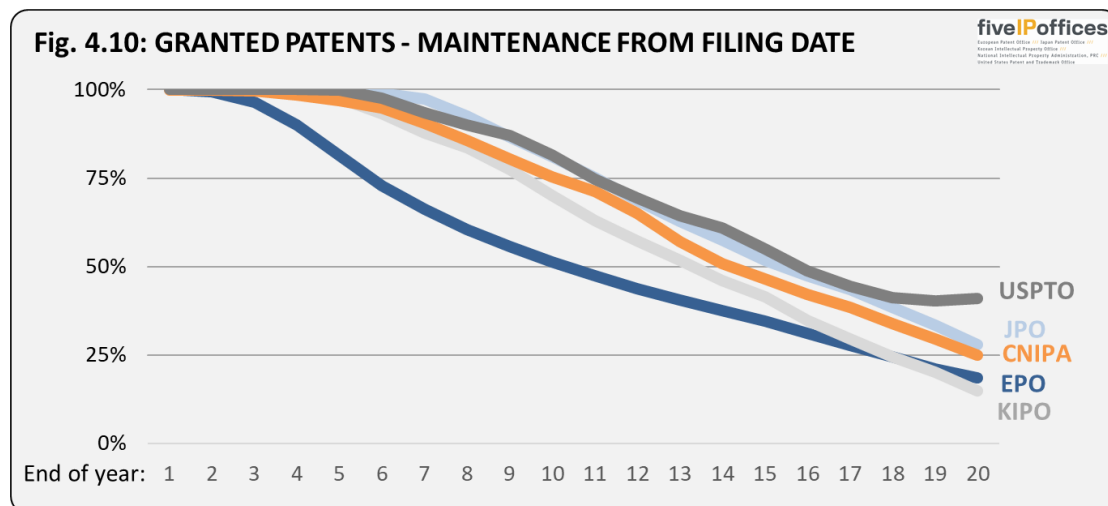
At the EPO, annual renewal fees are payable at the beginning of the year from the third year after filing in order to maintain the application. After the patent has been granted, renewal fees are then paid to the national office of each designated EPC contracting state in which the patent has been registered. These national patents can be maintained for different periods in the contracting states. Therefore, rather than maintaining one patent after grant, patentees have to deal with the maintenance of several patents and need to choose how long to maintain each one.

For a Japanese or Korean patent, the annual fees for the first three years after patent registration are paid as a lump-sum and for subsequent years there are annual fees. The applicant can pay either yearly or in advance.

At the CNIPA, the annual fee for the year in which the patent right is granted is paid at the time of going through the formalities of registration, and the subsequent annual fees are paid before the expiration of the preceding year. The date at which the time limit for payment expires is the date of the current year corresponding to the filing date.

The USPTO collects maintenance fees at 3.5, 7.5, and 11.5 years after the date of grant and does not collect an annually payable maintenance fee.

Figure 4.10 shows the proportions of granted patents by each office that are maintained for differing lengths of time. It compares the rate of granted patent registrations existing and in force each patent year starting with the year of application. Figures are based on the most recent relevant data that are available at each IP5 Office. The EPO proportion represents a weighted average ratio of the maintenance of the validated European patents in the 39 EPC states⁴⁸.



At the USPTO, 41 percent of the granted patents are maintained for a full 20 years from filing. This is compared to 28 percent at the JPO, 25 percent at the CNIPA, 18 percent at the EPO, and 15 percent at the KIPO.

More than 50 percent of the USPTO and the JPO granted patents are maintained for at least 15 years, compared to 14 years at the CNIPA, 13 years at the KIPO, and 10 years at the EPO.

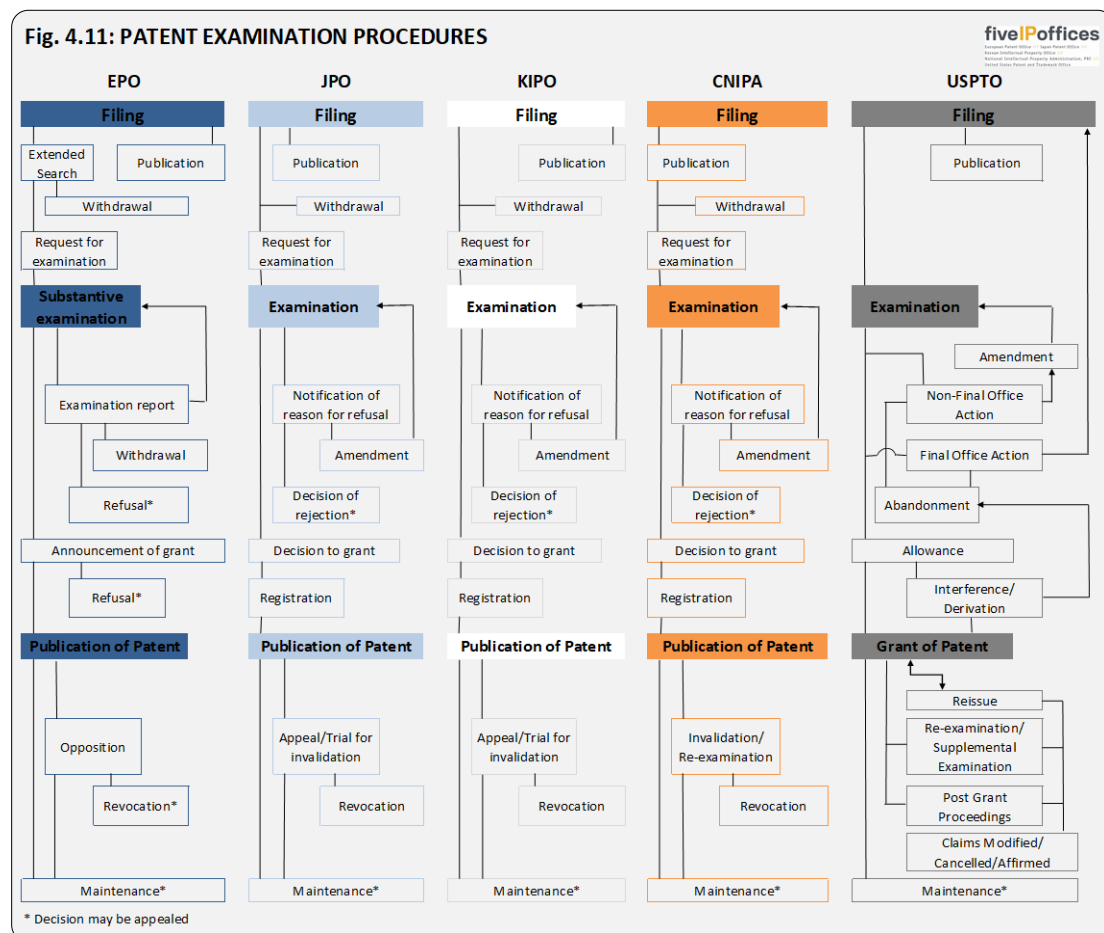
In addition to patentees' behaviour, these differences can be partly explained by differences in the procedures, such as a multinational maintenance system (EPO), deferred examination (JPO, KIPO, CNIPA) and a stepped maintenance payment schedule (USPTO). Changes in patent laws and administrative processes also may have some effect on maintenance rates.

⁴⁸ Once granted by the EPO, European patents need to be validated to come into force in the various member states that are designated at the time of grant.

PATENT EXAMINATION PROCEDURES

PROCEDURE FLOW CHART

Figure 4.11 is a simplified view of the major phases of the procedures at the IP5 Offices and concentrates on the similarities between offices to motivate the comparative statistics to be presented in Table 4.3. However, the reader should bear in mind when interpreting such statistics that details of the procedures differ between offices, sometimes to quite a large degree (e.g. in time lags between stages of the procedures).



See [Annex 2](#) for some further details about the procedures.

Fees are due at different stages of the procedure. Information on main comparable fees at the IP5 Offices is made available online on the IP5 home page⁴⁹.

⁴⁹ See www.fiveipoffices.org/statistics/statisticaldata under fees. These data are not guaranteed to be entirely accurate or up to date. Official fee schedule information and associated regulations from each IP5 Office take precedence.

STATISTICS ON THE PROCEDURES

Table 4.3 shows various statistics as average rates and numbers where applicable for 2021 and 2022. Definitions of the various terms are given in [Annex 2](#).

Details on the definition of the terms presented in Table 4.3 can found in [Annex 2](#). In the following cases, there exist some differences between the offices:

- Pending examination: For the KIPO, only the unexamined patent applications with a request for examination filed have been counted. In the reports prior to the 2016 edition, the figure of this category included the entire unexamined patent applications.
- Pendency first office action: For the EPO the measurement begins at the date of initial filing and ends upon completion of either the extended European search report that includes a written opinion on patentability or, in the case of a PCT without supplementary search, the international search report with a written opinion. The JPO, the KIPO, and the CNIPA measure from the request for examination. Rather than measuring average pendency, in 2021 the USPTO has transitioned to a compliance rate based on compliance with a 14-month goal between filing and the mailing of the first office action, in accordance with its statutory mandate.
- Pendency final action: The pendency in examination is calculated from the date at which the file was allocated for examination (EPO, usually 6 months after the first action), the date of the request for examination (JPO, KIPO), the date on which the application enters the substantive examination phase (CNIPA). Rather than measuring average pendency, in 2021 the USPTO has transitioned to a compliance rate based compliance with a 36 month goal between filing and mailing of a final office action, in accordance with its statutory mandate.

Note: The length of time until request for examination can vary, this leads to significant differences between offices in the time periods that are reported.

Table 4.3: STATISTICS ON THE PROCEDURES

Definitions of the various terms are given in [Annex 2](#).

Progress in the procedure	Year	EPO	JPO	KIPO	CNIPA	USPTO
Rates in percentage						
Examination	2021	95.1	73.3	85.2	n.a	100.0
	2022	95.2	74.7	85.5	n.a	100.0
Grant	2021	62.7	74.8	74.0	55.0	79.2
	2022	59.9	75.9	74.3	51.1	69.1
Opposition	2021	2.5	0.7	-	-	n.a
	2022	2.4	0.7	-	-	n.a
Appeal on examination	2021	12.3	29.9	4.7	n.a	1.6
	2022	11.6	33.9	3.8	n.a	1.4
Pendency						
Awaiting request for examination	2021	109,920	556,500	192,153	315,652	-
	2022	110,022	534,292	189,300	n.a	-
Pending examinations	2021	343,667	181,409	252,431	2,650,405	666,206
	2022	394,458	171,645	275,070	2,728,640	715,979
Pendency first action (months)	2021	4.8	10.1	12.2	12.5	n.a
	2022	4.9	10.1	14.3	13	n.a
Pendency final action (months)	2021	23.0	15.3	16	18.5	n.a
	2022	24.3	14.9	18.4	16.5	n.a
Pendency invalidaiton (months)	2021	-	14.1	-	5.8	-
	2022	-	13.4	-	5.7	-

n.a = not available; - not applicable

RATES

The examination rate at the USPTO is 100 percent, since filing a non-provisional patent application at the USPTO implies a request for examination, whereas at the EPO, the JPO, the KIPO, and the CNIPA a specific request for examination has to be made. At the EPO, a large proportion of PCT applications in the granting procedure give a high examination rate, as almost all of them proceed to examination. The examination rate is somewhat lower at the JPO and the KIPO since the deferred examination system allows more time for the applicants to evaluate whether or not to proceed further with the application.

The grant rates at the JPO and the KIPO increased between 2021 and 2022. At the EPO, the CNIPA, and the USPTO, the grant rate decreased between 2021 and 2022.

The appeal on examination rates vary between offices, mainly due to the differing procedures.

PENDENCIES

In the successive stages of the procedure, there are pending applications awaiting action in the next step of the procedure. The number of pending applications gives an indication of the workload (per stage of procedure) from the patent grant procedure in each of the IP5 Offices. Although this may seem to be an indicator for the backlog in handling applications within the offices, it is not in fact a particularly good one because substantial parts of pending applications are awaiting action from the applicant. This could be, for instance, a request for examination or a response to actions communicated by the office.

As shown in Table 4.3, about 5.3 million applications were pending (i.e. awaiting request for examination or pending examination) in the IP5 Offices at the end of 2022. The total number of applications pending at the IP5 Offices increased by 7.9 percent

between 2021 and 2022. Pending applications decreased at the JPO, and increased at the EPO, the KIPO, the CNIPA, and the USPTO between 2021 and 2022.

The pendency to first action increased at the EPO, the KIPO, while it remained stable at the JPO. The pendency to final action increased at the EPO and the KIPO, and decreased at the CNIPA and the JPO.

These numbers should not be compared between offices, because of the differences in the procedures at each office, as well as different portions of the procedures being measured. At the EPO, for example, the examination is done in two phases: a search and a substantive examination, while they are done in one combined phase at the other IP5 Offices.

Unlike the other IP5 offices, the USPTO does not have a request for examination step. As a result, the USPTO does not have pendency metrics that would be comparable to the other IP5 offices. See Fig 4.12 below and [Annex 2](#) for further explanation.

At all IP5 Offices, various options to initiate a faster examination are available.

Fig. 4.12: OFFICES PROCESS TO FIRST AND FINAL ACTIONS

Action	Office	Filing	Formalities	Search Report as 1st Action*	Request for examination	1st Examiner Action	Grant/Abandonment Decision	Remarks
1st action								
	EPO	→		4.9				Standard EP cases (i.e. excl. non-unity, clarification req, incomplete search)
	JPO				→	10.1		
	KIPO				→	14.3		
	CNIPA				→	13		If qualified, CNIPA issues a notification that the patent application is entering substantive examination stage
	USPTO	→				16.4		
Final action								
	EPO				→	24.3	Grant	Standard cases (i.e. excl. late payment, req for time extension, rescheduled oral proc.)
	JPO				→	14.9	Grant/Aband.	Standard cases (i.e. excl. 2nd notif for refusal, req for time extension...)
	KIPO				→	18.4	Grant/Aband.	
	CNIPA				→	16.5	Grant	If qualified, CNIPA issues a notification that the patent application is entering substantive examination stage
	USPTO	→				25.8	Grant/Aband.	

1st action: 1st communication on prior art and opinion on patentability

Final action: Examiner decision to grant (or refuse) the granting of a patent

Time limit to request examination

EPO	up to 6 months after publication of the search report, or up to 31 months from priority/international filing date for PCT application
JPO	up to 3 years after filing date at JPO
KIPO	up to 3 years after filing date at KIPO
CNIPA	up to 3 years after filing date at CNIPA
USPTO	no delay, filing = request for examination

* EPO only

Chapter 5

THE IP5 OFFICES AND THE PATENT COOPERATION TREATY (PCT)

This chapter presents firstly the impact of the PCT system on global patenting activity. Then it describes the various activities of the IP5 Offices that relate to the PCT system.

Graphs are presented that display the shares that used the PCT, by origin, of patent applications, grants and patent families. Descriptions are given of additional activities of the IP5 Offices under the PCT as RO for applicants in their respective territories, as ISA and as IPEA. PCT searches are a significant workload for the IP5 Offices in addition to those already described in Chapter 4.

Statistics in this chapter have been derived from the WIPO Statistics Database⁵⁰ and the IP5 Offices. The graphs cover five-year periods that include the latest year for which reliable data are available⁵¹. Data for 2022 are presented in all figures except for Figure 5.1 (proportions of applications filed by PCT) and Figure 5.6 (IP5 patent families by origin).

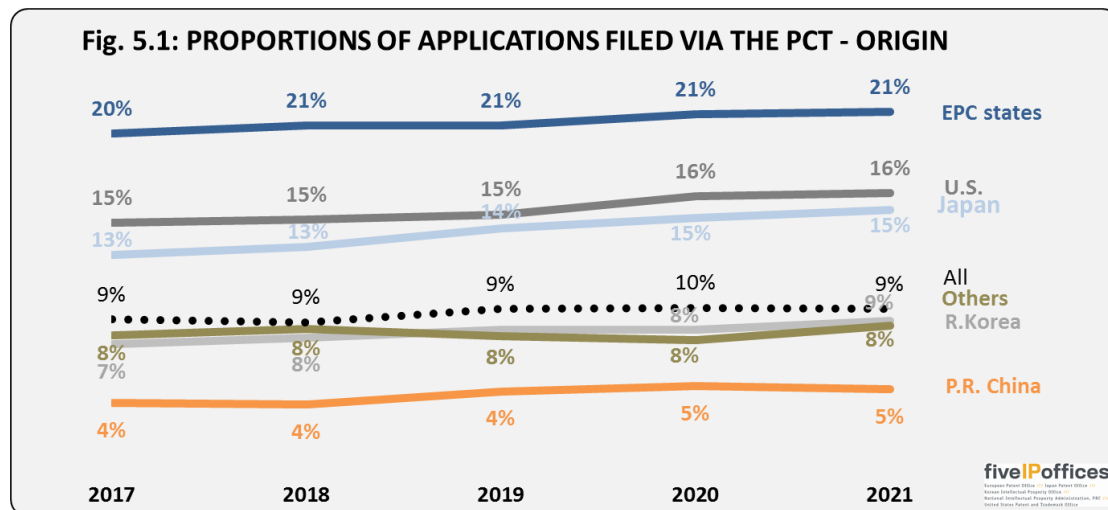
⁵⁰ This edition refers to general patent data as of April 2023, and to PCT international application data as of June 2023, www.wipo.int/ipstats/en/index.html

⁵¹ The statistical tables file found in the web version of this report includes extended time series for most of the data included in this chapter. www.fiveipoffices.org/statistics/statisticsreports

PCT AS FILING ROUTE

PATENT FILINGS

Figure 5.1 shows, for each bloc of origin (residence of first-named applicant or inventor), the proportions of all patent filings that are PCT international applications. Applications are counted in the year of filing. These data are comparable to those in Figs. 3.1 to 3.4.



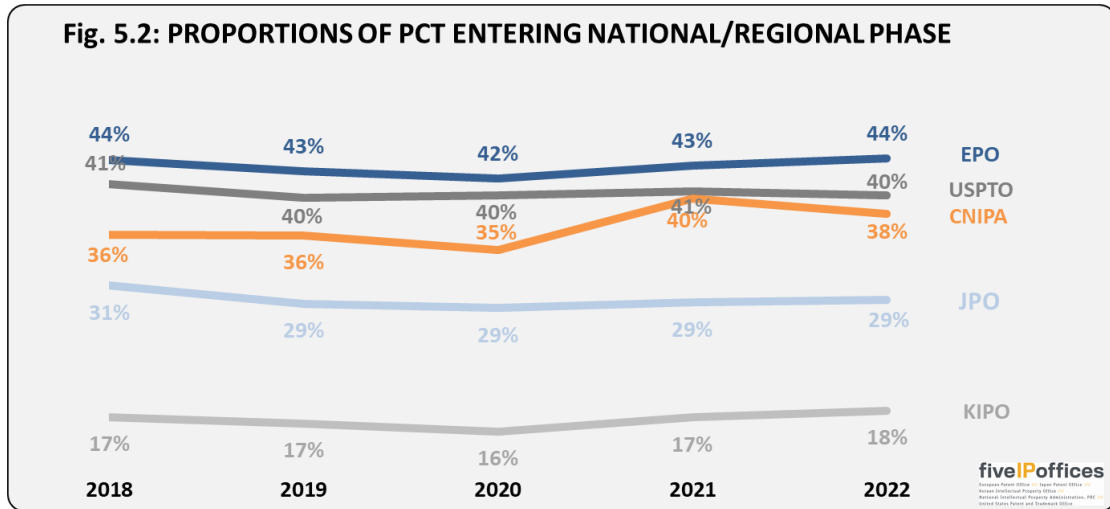
Nine percent of worldwide patent filings were made via the PCT route in 2021.

The proportion of applications filed via the PCT grew marginally over the period. It increased more for Japan and the U.S. The proportion for the EPC states origin applications continue to be higher than for the remaining blocs.

NATIONAL / REGIONAL PHASE ENTRY

After the international phase of the PCT procedure, applicants decide whether they wish to proceed further with their applications into the national or regional phase for each country or regional organization of interest. If the decision is made to proceed, then the applicant has to fulfil the various requirements of the selected PCT contracting states or organisations.

Figure 5.2 shows the proportions of international PCT applications that entered the national or regional phase at each of the IP5 Offices. Applications are counted in the year corresponding to the date when the delay to enter the national or regional phase has expired⁵².

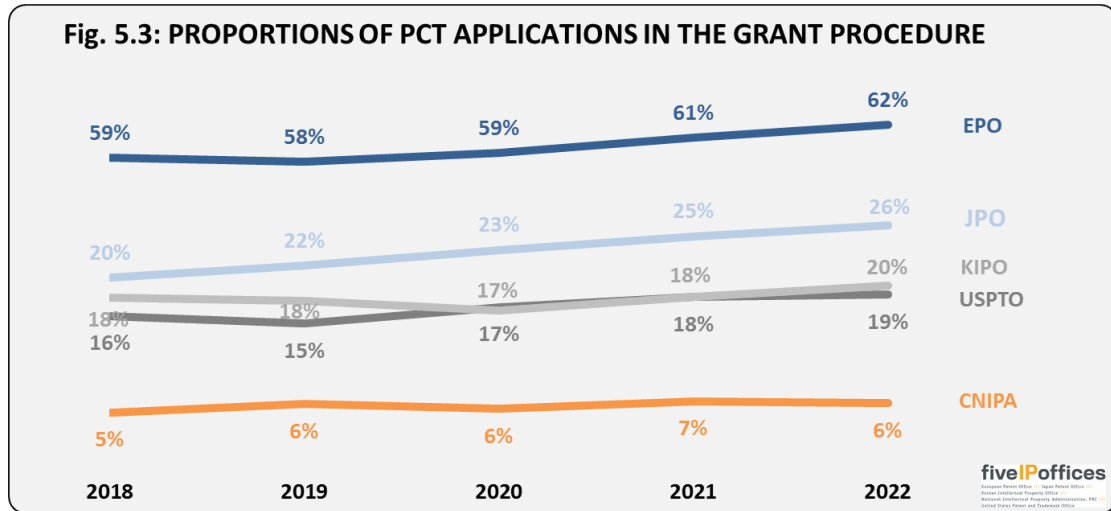


A lower proportion enters the regional phase at the KIPO and JPO than enters the national phase at any of the other IP5 Offices.

⁵² It should be noted that counts from EPC contracting state national offices are not reported in Figs. 5.2, 5.3, and 5.4.

SHARE OF PCT APPLICATIONS

Figure 5.3 shows the shares of PCT among all applications in the grant procedure at each office (as presented earlier in Figure 4.1).

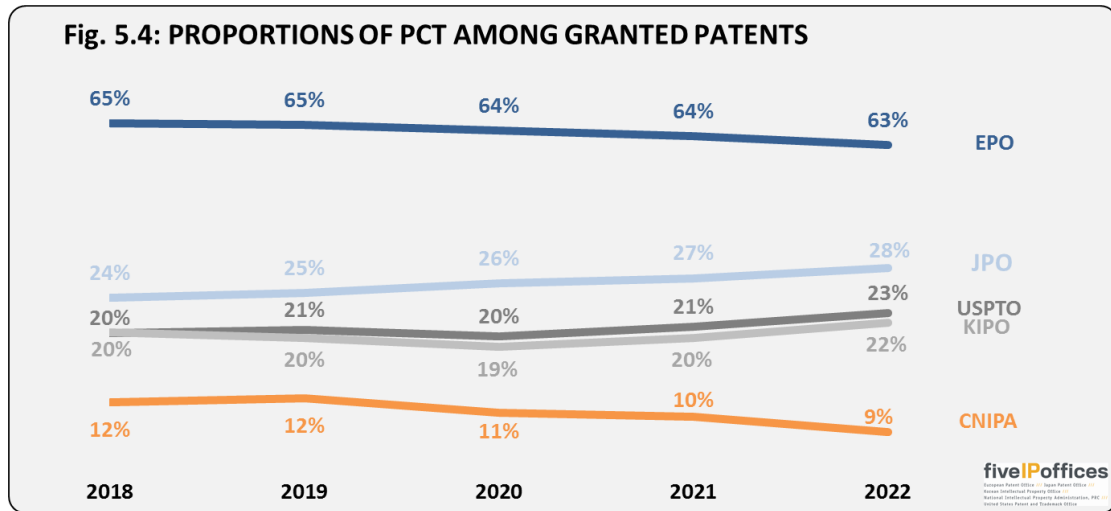


The proportions of PCT national/regional phase applications among all applications remained stable during the period. In 2022 the proportions increased by 1 or 2 percent.

The EPO continues to have much higher proportion of PCT applications, compared to the other IP5 Offices. This can be explained by the fact that, contrary to other IP5 Offices, most of the first filings filed in the EPC states are filed at national offices, resulting in a higher share of PCT at the EPO.

PCT GRANTS

Figure 5.4 shows the proportions of granted patents by each of the IP5 Offices that were based on PCT applications.



Granted patents generally relate to applications that were filed several years earlier.

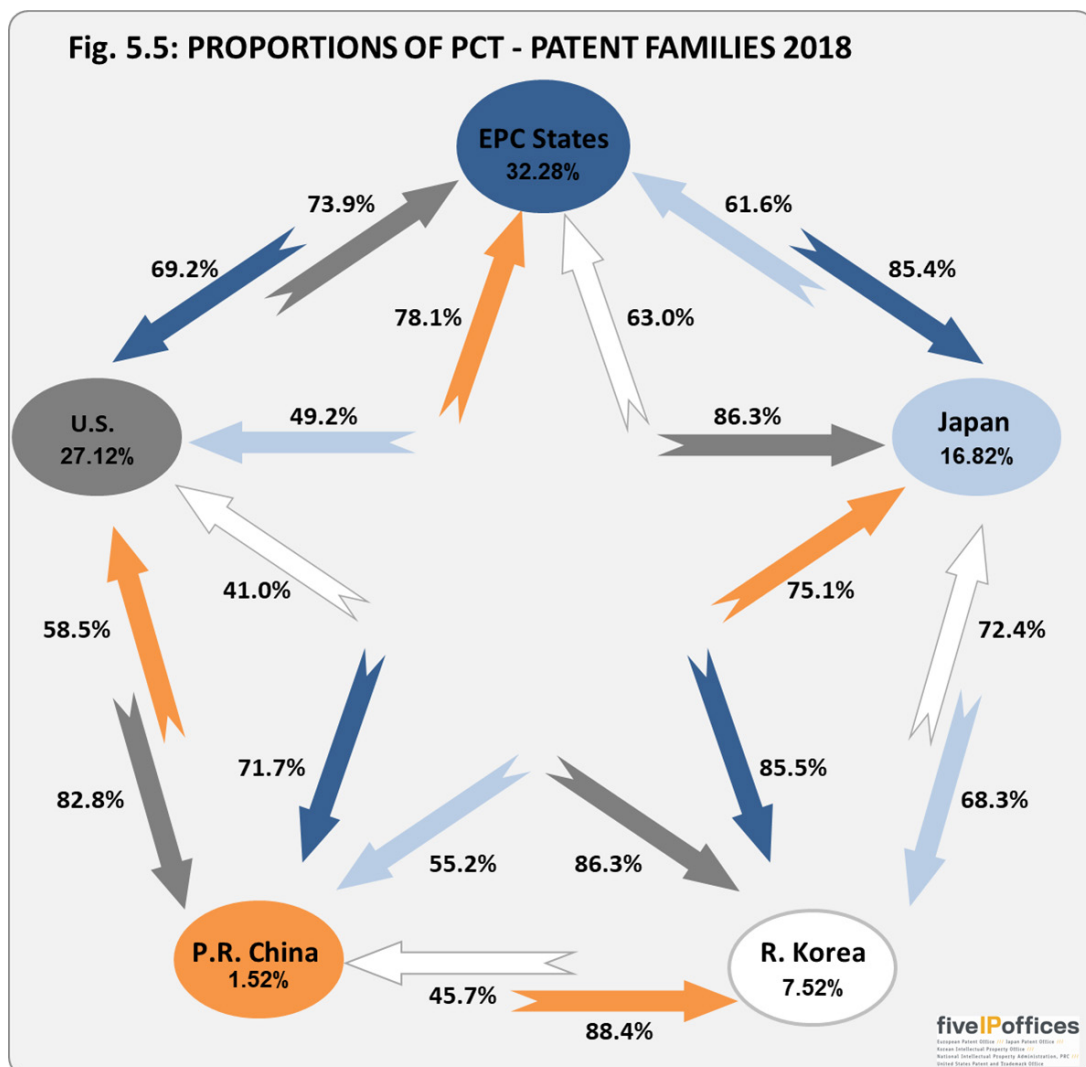
Over the period, the proportion of PCT in patent grants at the EPO and at the CNIPA decreased, while the proportion increased at the JPO, the KIPO, and the USPTO. The percentages of PCTs in patent grants in Figure 5.4 are always higher than the percentages of PCTs in applications in Figure 5.3, for all IP5 Offices. The difference is larger at the EPO.

PATENT FAMILIES AND PCT

A patent family is a group of patent filings that claim the priority of a single filing, as was described in the final section of Chapter 3.

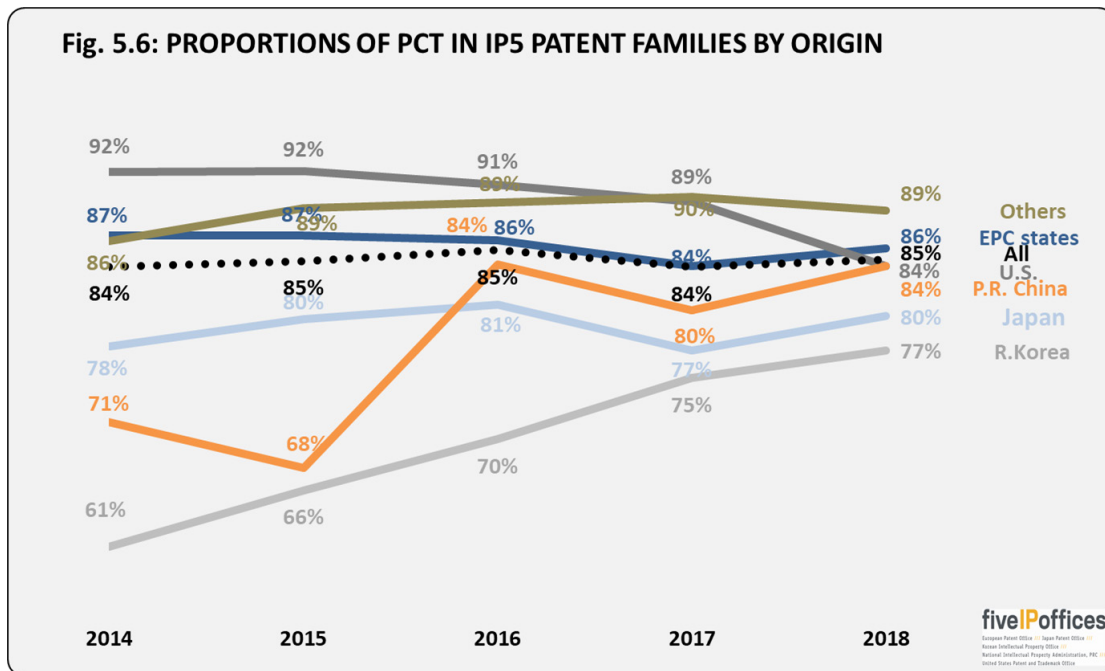
The PCT system provides a good way to make subsequent patent applications in a large number of countries. Therefore, it can be expected that many patent families flowing between blocs use the PCT route. In this section, the usage of the PCT system implies that at least one PCT application has been made within the family of filings that quote the priority of the same first filing.

Figure 5.5 shows the usage of the PCT among patent families for the priority year 2018. Two types of percentages are shown. The first, next to the name of each bloc, is the proportion of the overall number of first filings for the bloc that generated families using the PCT. The second, next to the arrows indicating flows between-blocs, shows the share of total patent family flows that used the PCT system. This figure is based on first filings in 2018, and can be compared with Figure 3.14.



In general, the usage of the PCT route is far higher when making applications abroad rather than at home. Applicants from the U.S., P.R. China and the EPC states use the PCT system for their foreign filings to a greater extent than applicants from Japan and R. Korea do.

Figure 5.6 shows the proportions of IP5 patent families by bloc of origin (residence of first-named applicants or inventors), as given earlier in Figure 3.15, that made some use of the PCT system. IP5 patent families correspond to filings where activities of the first and/or subsequent associated filings were made in all the IP5 Blocs.



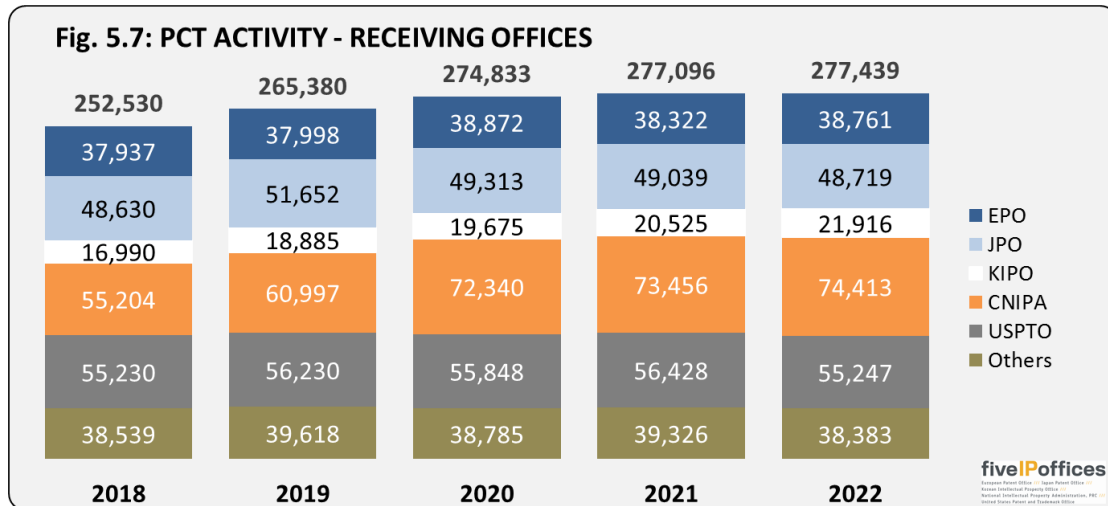
Since IP5 patent families represent highly internationalised applications, the rate of PCT usage is high compared to the overall usage of PCTs among applications in general, as was shown in Figure 5.1.

In 2018, there was a further increase of usage in R. Korea, reaching a level comparable to other blocs.

PCT AUTHORITIES

Under the PCT, each of the IP5 Offices acts as RO, mainly for applicants from its own geographical zone, and as ISA and IPEA for non-residents and residents. The following graphs show the trends from 2018 to 2022.

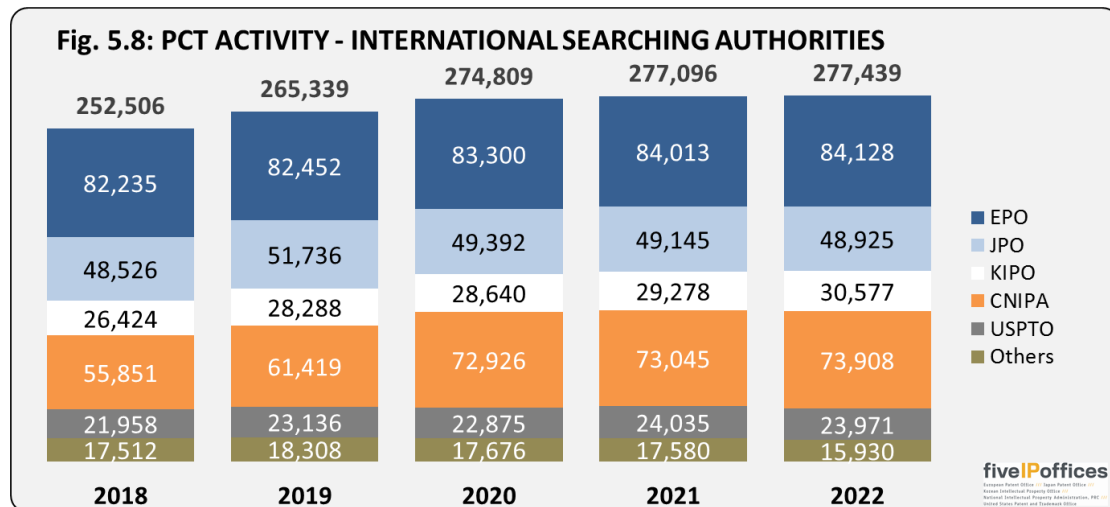
Figure 5.7 shows the breakdown of PCT international filings by ROs over time.



From 2018 to 2021, the total number of PCT international phase filings grew at average compound annual growth rate 3 percent. It stayed about the same in 2022.

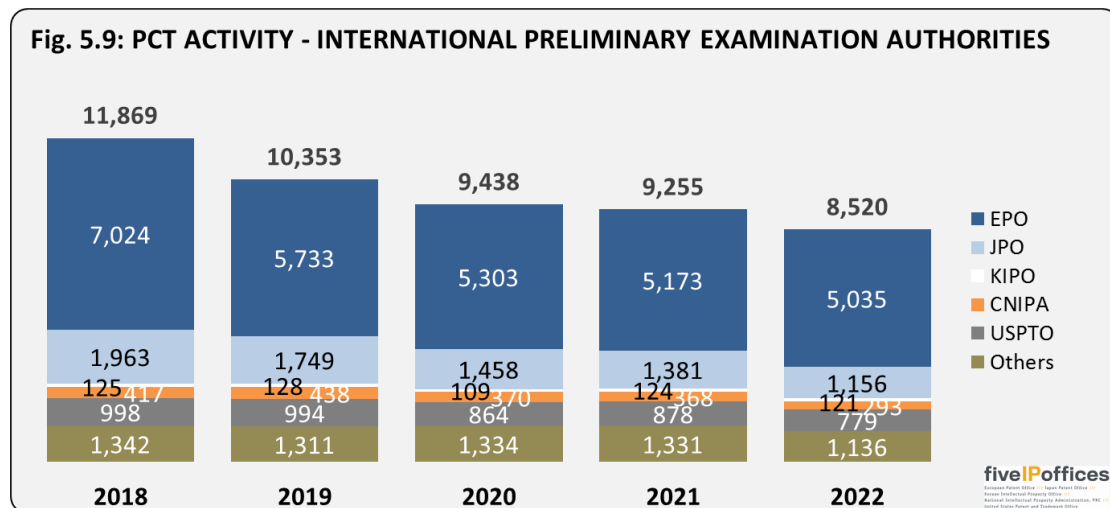
In 2022, the EPO, the KIPO, and the CNIPA saw an increase of PCT international filings compared with 2021. The KIPO had the largest percentage increase of 7 percent. Together, the IP5 Offices were ROs for 86 percent of the PCT international filings in 2022 (85 percent in 2018).

Figure 5.8 shows the breakdown over time of the numbers of international search requests to offices as ISA, for those applications for which information is known.



There is a steady increase in total activity over the period described. In 2022, the IP5 Offices received 94 percent of all PCT international search requests, consistent with the previous periods. The EPO continues to receive the largest number of requests, receiving 30 percent of all requests in 2022. In 2022, the number of requests increased at the KIPO by 4 percent, 1 percent at the CNIPA. In contrast, the number of requests at the EPO, the JPO, and the USPTO remained stable.

Figure 5.9 shows the breakdown over time of the numbers of international preliminary examination requests to IP5 Offices as IPEA.



From 2021 to 2022, the number of requests for international preliminary examinations decreased 8 percent. Since the changes in the PCT regulations for the international preliminary examination, the number of requests is declining. Together, the IP5 Offices were in charge of 87 percent of the IPEA work in 2022. In 2022, the EPO performed 60 percent of all the international preliminary examinations.

Chapter 6 OTHER WORK

This brief chapter contains statistics about other work done on IP rights that is not common to all five offices. The data presented below supplement the information appearing in earlier chapters of this report.

This includes applications for plant patents (USPTO), reissue patents (USPTO), provisional applications (USPTO), applications for patents other than those for inventions: utility models (JPO, KIPO, CNIPA), designs (JPO, KIPO, CNIPA, USPTO), trademarks (JPO, KIPO, USPTO), and search requests to be performed on behalf of national offices (EPO).

The utility model is different from the patent for invention⁵³ because it is used to protect a device in relation to the shape or construction of articles or combination of articles (JPO, CNIPA), or to protect a creation of a technical idea using the rules of nature regarding the shape, structure, or combination of subjects (KIPO). A utility model is registered without a substantive examination as long as it meets basic requirements. The maximum period of protection for a utility model in Japan, R. Korea, and P.R. China is 10 years, which is shorter than for a patent for invention (typically 20 years).

A provisional application is an unexamined application which allows applicants to secure an early effective filing date without a formal patent claim, oath or declaration, or any information disclosure (prior art) statement.

The numbers of requests received for these types of other work are shown for 2021 and 2022 in Table 6.

Table 6: STATISTICS ON OTHER WORK

Activity	Year	EPO	JPO	KIPO	CNIPA	USPTO
Search for national offices	2021	27,945	-	-	-	-
	2022	29,128	-	-	-	-
Design applications	2021	-	32,525	64,787	805,710	56,757
	2022	-	31,711	56,641	794,718	53,094
Utility model applications	2021	-	5,239	4,009	2,852,219	-
	2022	-	4,513	3,084	2,950,653	-
Plant patent applications	2021	-	-	-	-	992
	2022	-	-	-	-	907
Re-issue applications	2021	-	-	-	-	997
	2022	-	-	-	-	739
Trademark applications	2021	-	184,631	285,821	9,450,507	880,416
	2022	-	170,275	259,078	7,515,961	762,611
Provisional applications	2019	-	-	-	-	152,909
	2020	-	-	-	-	146,593

In 2022, the number of utility model applications decreased by 14 percent and 23 percent at the JPO and the KIPO, respectively, while they increased by 3 percent at the CNIPA. The number of trademark applications decreased at JPO, the KIPO, the

⁵³ Not to be confused with the utility model, the USPTO's main type of patent, called a utility patent, is a patent for invention that is similar to the standard patent at the other IP5 Offices.

CNIPA, and the USPTO by 8 percent, 9 percent, 20 percent, and 13 percent, respectively. Design applications also saw decline in 2022, decreasing by 3 percent at the JPO, 13 percent at the KIPO, 1 percent at the CNIPA, and 6 percent at the USPTO.

Annex 1

DEFINITIONS FOR IP5 OFFICES EXPENDITURES

EPO EXPENDITURES (Figure 2.7)

The full costs are distributed to eight types of EPO products (labelled A to H in Figure 2.2). Of these, five types are directly related to processing of patent applications: filing, search, examination, opposition, and appeal. The other three types are related to different tasks performed by the EPO: patent information, technical cooperation and the European patent academy.

Direct costs immediately related to one product are entirely allocated to this product. The indirect costs are distributed to the products according to staff and usage keys, with IT costs being distributed according to their catalogue of services.

A-E. Business support and other indirect

- Salaries and allowances of the concerned permanent staff as well as temporary staff, including the yearly variation of liabilities for pensions, long-term care, death, sickness (“current service costs”), and partial tax compensation
- Training, recruitment, transfer and leaving costs, medical care, welfare of these staff
- Their share of depreciation for buildings, IT equipment and other tangible and intangible assets, including the depreciation component of financial leases
- Their share of operating costs related to the maintenance of electronic data processing hardware and software, licenses, programming costs of self-developed systems as far as they do not qualify for capitalization
- Their share of operating costs related to the maintenance of buildings, technical installations, equipment, furniture and vehicles, such as rent, cleaning and repairs, electricity, gas, water
- The relevant business support shared costs that mostly include management, human resources, finance, legal advice and communication functions

F. Patent information

This covers the publication of patent documentation, raw data products, public information, customer services, website, conference, exhibitions and fairs. The product lines bear the full cost of operating such activities.

G. Technical cooperation

Cooperation with contracting states including support to national patent offices, assistance to third countries, Trilateral and IP5 activities, EPOQUE Net. The product lines bear the full cost of operating such activities.

H. European patent academy

The product lines bear the full cost of operating such activities including professional representatives and European qualifying examination support, conference costs.

JPO EXPENDITURES (Figure 2.8)

Expenses for business processing

A. General processing work

- Existing personnel (including increase and transfer)
- General administration
- Various councils
- Encouragement of guidance including patent management
- External rented offices
- Internationalization of industrial property administration
- Project for supporting medium and small company's applications
- Patented micro-organisms deposition organization

B. Examination and appeals/trials, etc.

- Infrastructure improvement for examination and appeals/trials
- Disposition of examination and appeals/trials
- Execution of PCT

C. Information management

Management of information for use in examination and appeals/trials

D. Publication of Patent Gazette, etc.

E. Computers for patent processing work

F. Facility improvement

G. Operating subsidies for INPIT⁵⁴

H. Others

All other expenses not covered by the above.

⁵⁴ National Center for Industrial Property Information and Training

KIPO EXPENDITURES (Figure 2.9)

A. Personnel resources

Compensation for the services of employees or the inclusive expenditure of the services of employees: salaries, bonuses, and remuneration of temporary staff.

B. Internal business

Internal business includes Public-employee pension, balance, and transaction between the accounts.

C. Primary business expenses

Primary business expenses include expenditures on the development, operation, and private transfer which mainly related to the business of private organizations or affiliated organizations, including expenses on the business and task.

D. Other expenses

All other expenses not covered by the above.

CNIPA EXPENDITURES (Figure 2.10)

A. Administrative Operation

B. Examination

- Patent examination
- Trademark examination

C. Social and Housing security, Pension

- Pension of staff in administrative agencies
- Infrastructure-related expenses.

D. Others

All other expenses not covered by the above.

USPTO EXPENDITURES (Figure 2.11)

A. Salaries and Benefits

Compensation directly related to duties performed for the Government by Federal civilian employees. Also included are benefits for currently employed Federal civilian personnel.

B. Equipment

C. Rent and Utilities

Payments for the use of land, structures, or equipment owned by others and charges for communication and utility services.

D. Printing

Costs incurred for printing and reproduction services including related composition and binding operation.

E. Other expenses

All other expenses not covered by the above (heading for equipment and printing are above) including but not limited to:

- **Equipment:** Property of a durable nature, which is defined as property that normally may be expected to have a period of service of a year or more, after being put into use, without material impairment of its physical condition or functional capacity. Also included is the initial installation of equipment when performed under contract.
- **Printing:** Printing and reproduction obtained from the private sector, or from other Federal entities.
- **Supplies and Materials:** Commodities that are ordinarily consumed or expended within one year after they are put into use, converted in the process of construction or manufacture, used to form a minor part of equipment or fixed property, or other property of little monetary value that does not meet any of the three criteria listed above, at the option of the agency.

Annex 2

DEFINITIONS OF TERMS AND STATISTICS ON PROCEDURES

This annex contains firstly definitions of the main terms used in the report⁵⁵. After that there is an explanation of the patent procedures relating to Figure 4.9. Then finally there are definitions of the statistics on procedures that appear in Table 4.3.

DEFINITIONS OF TERMS

APPLICATIONS, COUNTING OF

Application counts are mainly determined by counting each national, regional or international application only once. However, alternative representations are also given in Chapter 3 after cumulating the number of designated countries over applications.

In this report, applications are counted in terms of patent filings, first filings, requests for patents entering a grant procedure, and demand for national patent rights.

- Counts of “*Patent filings*” include direct national, direct regional, and initial PCT international phase applications;
- Counts of “*First filings*” include initial patent applications filed prior to any later subsequent filings to extend the protection to other countries;
- Counts of “*Requests for patents entering a grant procedure*” include direct national, direct regional, national phase PCT, and regional phase PCT applications;
- Counts of “*Demands for national patent rights*” include direct national applications counted once each, designations in regional applications, national phase PCT applications, and designations in regional stage PCT applications.

These counting methods are used in various sections of the report, and particularly in Chapter 3. The methods are discussed in greater detail both at the beginning of Chapter 3 and at the beginning of the corresponding sections of Chapter 3.

BLOCS, GEOGRAPHIC

Six geographical blocs are defined in this report. The first five blocs, together, are referred to as the “*IP5 Blocs*”. They are:

- The EPC contracting states (EPC states in this report) corresponding throughout the period covered in this report to the territory of all the states party to the EPC;
- Japan (Japan in this report);
- Republic of Korea (R. Korea in this report);
- People’s Republic of China (P.R. China in this report);
- United States of America (U.S. in this report).

The remaining geographical areas are grouped together as:

- The rest of the world (Others in this report).

⁵⁵ A more extensive glossary of terms is available with the web-based version of the report.

These blocs are referred to as blocs of origin on the basis of the residence of the first-named applicants or inventors (throughout the report) or as filing blocs on the basis of the place where the patents are sought (in Chapters 3 and 5).

DEMANDS FOR PATENT RIGHTS

Demand for patent rights refers to applications for patents for invention. The counts of patent filings are made principally by counting each national, regional, or international application only once. However, alternative representations are also given in Chapter 3 in terms of the demands for national patent rights, after cumulating the number of designated countries over applications. This makes a difference only in regard to systems where multiple countries can be designated in an application (PCT and regional systems). Demands for “*national*” patent rights effectively measures the number of national patent applications that would have been necessary to seek patent protection in the same number of countries if there were no PCT or regional systems. The counts include direct national filings, designations in regional systems, national stage PCT applications, and designations in regional stage PCT applications.

DIRECT APPLICATIONS

“*Direct*” applications are filed directly with the country or regional patent office where protection is sought and are counted in the year they are filed. They are distinguished from “*PCT*” applications in order to distinguish the two subsets of applications handled by patent offices.

DOMESTIC APPLICATIONS

These are defined as all demands for patents made by residents of the country where the application is filed⁵⁶. For the purpose of reporting statistics for the EPC contracting states considered as a bloc, domestic applications are given with regard to the applications made by residents from anywhere inside the EPC bloc. For example, applications made by residents of France in one of the other EPC contracting states are counted as domestic demand in the EPC bloc.

FIRST FILINGS

These are applications filed without claiming the priority⁵⁷ of another previous filing and are counted in the year they are filed. They are usually made in the home country or region. All other applications are subsequent filings, usually made within one year of the first filings. In the absence of a complete set of available statistics on first filings, it is assumed in this report that domestic national filings are equivalent to first filings⁵⁸ and that PCT filings are subsequent filings. Currently, USPTO first filing data, unless otherwise noted, also include a substantial proportion of applications that are continuations of applications previously filed at the USPTO. See also *APPLICATIONS, COUNTING OF*.

FOREIGN APPLICATIONS

⁵⁶ For the USPTO, this is by the residence of the first-named inventor; For the EPO, the JPO, the KIPO, and the CNIPA, this is by the residence of the first-named applicant.

⁵⁷ See the Article 4A to 4D of the Paris Convention at the WIPO web site, www.wipo.int/treaties/en/ip/paris/

⁵⁸ The data source used for patent families allows a precise count of first filings. Except in the sections on patent families, an approximation of the number of first filings in the EPC Bloc is made by adding first filings at the EPO to aggregated domestic national applications in the EPC contracting states.

These are defined as all demands for patents made by residents of a location outside of the country or region where the application is filed⁵⁹. See the term definition for Domestic Applications for additional details.

GRANTS, COUNTING OF

Grant counts in Chapter 3 are based on the WIPO Statistics Database⁶⁰. They are counted in the year that the grants are issued or published. As with the demand for patent rights, the demand for rights granted in each bloc are considered after cumulating the number of designated countries for which national patent rights have been granted via regional procedures. The counts in Chapter 4 and proportions of PCT grants in Chapter 5 are based on IP5 Offices data.

CROSS FILINGS

IP5 cross filings are patent applications filed at the IP5 Offices during the same time period (i.e. calendar year in this report) and claiming the same priority. Such applications can be filed as direct national, direct regional or PCT that entered the national or regional stage during the reporting period. The priority application may have been filed in any patent office in the world. Cross filings are filed in at least two and up to all five IP5 Offices. Counts of cross filings are based on the number of underlying priorities claimed in subsequent patent applications filed in the reporting period.

The counts of cross filings are considered an indicator for shared workload among the IP5 Offices. Cross filings are therefore reported according to the year of the subsequent applications.

Contrary to patent families involving activity in the individual EPC Contracting States, cross filings in Europe are limited to subsequent filings at the EPO. Cross filings are reported according to the year of the subsequent applications while patent families are reported according to the year of the priority applications.

PATENT FAMILIES

A patent family is a group of patent filings that claim the priority of the same initial first filing, including the original priority forming filing itself and any subsequent filings made throughout the world. Utility model applications are excluded.

Contrary to previous editions of the IP5 Statistics Report, the patent family counts are compiled from the EPO's DOCDB database, which is fed with data from patent publications from patent offices worldwide. The numbers of domestic national filings presented in Fig 3.4 are used as measures of first filings. Therefore, the numbers of first filings in Table 3 conform to those in Figure 3.4.

The proportions of the overall numbers of first filings that generated families using the PCT in Figure 5.5 make use only of patent families data, as in previous reports. For the purposes of this report⁶¹, IP5 patent families are a filtered subset of patent families for which there is evidence of patenting activity in all IP5 Blocs.

⁵⁹ For the USPTO, this is by the residence of the first-named inventor; For the EPO, the JPO, the KIPO, and the CNIPA, this is by the residence of the first-named applicant.

⁶⁰ www.wipo.int/ipstats/en/statistics/pct/index.html

⁶¹ The additional statistical tables that are available at the web site, and previous editions of this report,

Due to the change of source data, differences with counts given in previous editions of the report may occur.

PATENTS IN FORCE

Patents in force are patents that have not yet expired. Patents may expire for several reasons, two of the most common being the completion of their patent term and the failure to pay a required maintenance fee.

PCT APPLICATIONS

Applications that are filed under the PCT are first handled by appointed offices during the international phase. About 30 months after the first filing, they enter the national/regional phase to be treated as national or regional applications according to the regulations of each designated office where protection is sought. “PCT” applications are distinguished from “direct” applications in order to distinguish the two subsets of applications handled by patent offices. PCT applications are usually counted in the year that they enter the national (or regional) phase, although in some parts of this report they are counted in the year of filing in the earlier international phase⁶².

REQUESTS FOR PATENTS ENTERING A GRANT PROCEDURE

These are filings that entered a grant procedure and include direct national, direct regional, national phase PCT, and regional phase PCT applications. Direct national and direct regional applications enter a grant procedure when filed, while in the case of PCT applications, the grant procedure is delayed to the end of the international phase.

SUBSEQUENT FILINGS

Subsequent filings are applications filed that claim the priority⁶³ of a previous filing and usually are made within one year of the first filings. See also FIRST FILINGS. Currently, USPTO subsequent filings data also include a substantial proportion of applications that are continuations of applications previously filed at the USPTO.

also give statistics on Trilateral Patent families and Four blocs families. These are a filtered subset of patent families for which there is evidence of patenting activity in all the Trilateral blocs (EPC, Japan, and U.S.), or all the Trilateral blocs and R. Korea, respectively.

⁶² An international phase PCT application can in theory be a first filing but is usually a subsequent filing made up to twelve months after a first filing. A national (or regional) phase PCT entry can follow on from the corresponding international phase PCT filing and is made up to 30 months after the first filing.

⁶³ See the Article 4A to 4D of the Paris Convention at the WIPO web site, www.wipo.int/treaties/en/ip/paris/

EXPLANATIONS OF THE PATENT PROCEDURES

The following section contains additional explanations of the IP5 Offices patent procedures as shown in Figure 4.9.

EXAMINATION: SEARCH AND SUBSTANTIVE EXAMINATION

Each of the IP5 Offices examines a filed patent application based upon novelty, inventive step, and industrial applicability. At the EPO, the process involves two phases: a search to establish the state of the art with respect to the invention and a substantive examination to evaluate the inventive step and industrial applicability. For the second phase, a separate request has to be filed no later than six months after publication of the search report.

In the national procedures before the JPO, the KIPO, the CNIPA, or the USPTO, the search and substantive examination are undertaken in one phase.

Filing of a national application with the USPTO is taken to imply an immediate request for examination. At the JPO, the KIPO, and the CNIPA, deferred examination systems exist and filing of a national application does not imply a request for examination. This may be made up to three years after filing for the JPO, the KIPO and the CNIPA.

The international searches and international preliminary examinations carried out by the IP5 Offices as PCT authorities are not included in the flow chart.

PUBLICATION

In the IP5 Offices, the application is to be published no later than 18 months after the earliest priority date, or otherwise the date of filing (in case of a first filing). The application can be published earlier at the applicant's request. In each of the IP5 Offices, the publication process is independent of other office processes, such as examination. Also, at the USPTO, 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.

GRANT, REFUSAL / REJECTION, WITHDRAWAL

When an examiner intends to grant a patent, this information is communicated to the applicant: announcement of grant (EPO), decision to grant (JPO), decision to grant (KIPO), decision to grant (CNIPA), and notice of allowance (USPTO). If a patent cannot be granted in the form as filed before the office, the intention to reject the application is communicated to the applicant: (unfavourable) examination Report (EPO), notification of reason for refusal (JPO), notification of reason for refusal (KIPO), notification of reason for refusal (CNIPA), and office action of rejection (USPTO). The applicant may then make amendments to the application, generally in the claims, after which examination is resumed. This procedural step is iterated as long as the applicant continues to make appropriate amendments. Then, either the patent is granted or the application is finally rejected-intention to refuse (EPO), decision of rejection (JPO), decision of rejection (KIPO), decision of rejection (CNIPA), final rejection (USPTO) - or withdrawn by the applicant - withdrawal (EPO), withdrawal or abandonment (JPO), withdrawal or abandonment (KIPO), withdrawal or abandonment (CNIPA), and abandonment (USPTO). In addition, if no request for examination for an application is filed to the EPO, the JPO, the KIPO, or the CNIPA within a prescribed period (six months after publication of the search report for the EPO, three years from the date of filing for the JPO, the KIPO and the CNIPA), the application will be deemed to have

been withdrawn. In all five procedures, an applicant may withdraw or abandon the application at any time before the application is granted or finally refused.

After the decision to grant the patent, the patent specifications are published if certain administrative conditions are fulfilled, known as Publication of patent (the EPO, the JPO, the KIPO, the CNIPA, and the USPTO). At the USPTO, this action also is referred to as “Patent issuance.” Patents granted by the EPO are also then subject to validation in the designated member states where the applicant is seeking patent protection.

OPPOSITION

The opposition procedures allow third parties to challenge a patent granted before the granting office.

There is no opposition system at the KIPO, and the CNIPA.

At the EPO, the period for filing opposition(s) begins after granting of the patents and lasts nine months. If successful, the opposition can lead to a revocation of the patent or to its maintenance in amended form. Furthermore, the patentee may request a limitation or a revocation of his own patents.

At the JPO, only within six months from the date of publication of the Gazette containing the patent, any person may file an opposition to the grant of the patent. The examination of the opposition shall be conducted by documentary examination.

At the USPTO, prior to the implementation of the Leahy-Smith America Invents Act (AIA) on September 16, 2012, there were two types of third party opposition procedures: interference and re-examination. The AIA revised these and introduced some additional procedures. Under the AIA, there are now six distinct procedures for third party opposition, including post grant review, inter parte review, business method review, ex parte re-examination, interference, and derivation.

TRIAL AND APPEAL

An appeal can be filed by any of the parties concerned against a decision taken by the IP5 Offices. In practice, applicants can appeal decisions to reject an application or revoke a patent, while opponents can appeal decisions to maintain a patent. The procedure is in principle similar for the IP5 Offices. The examining department first studies the argument brought forward by the appellant and decides whether the decision should be revised. If not, the case is forwarded to a Board of Appeal, which may take the final decision or refer the case back to the examining department.

The JPO deals with ex parte appeals (e.g. appeals against examiner’s decision of refusal) and inter partes trials (e.g., trials for invalidation). If applicants have an objection to examiner’s decision of refusal, they can file an appeal against the examiner’s decision of refusal with the JPO. In case the applicants have made an amendment at the time of requesting the appeal against the examiner’s decision of refusal, the examination department that has issued said decision will examine the case again. During this examination, only those which are not eligible for patent grant are transferred to the board of trial and appeal where the proceedings of appeals shall be executed. In addition, any interested party can demand a trial for invalidation upon registration of the establishment of rights. At the trial for invalidation, oral proceedings shall be executed in principle.

The CNIPA has re-examination and invalidation procedures. Where an applicant for a patent is not satisfied with the decision of the CNIPA rejecting the application, the applicant may, within three months from the date of receipt of the notification, request the Patent Re-examination Board to make a re-examination. Where any entity or individual considers the grant of a patent right is not in conformity with the relevant provisions of the Patent Law, a request can be made to the Patent Re-examination Board to declare the patent right invalid.

DEFINITIONS FOR STATISTICS ON PROCEDURES

The following section contains additional definitions for terminology appearing in Table 4.3 follow.

EXAMINATION RATE

This rate shows the proportion of those applications, for which the period to file a request for examination expired in the reporting year, that resulted in a request for examination up to and including the reporting year.

For the EPO, the request for examination has to be filed no later than six months after publication of the search. For example, the rate for 2018 relates to applications mainly filed in the years 2014 to 2018.

For the JPO, the period to file a request for examination is three years from filing date. The rate for 2018 relates mainly to applications filed in the year 2015.

For the KIPO, the period to file a request for examination has been changed from 5 years to 3 years from filing date in 2018.

For the CNIPA, the period to file a request for examination is three years from filing date.

At the USPTO, as filing an application implies a request for examination, such a request is made for all applications.

GRANT RATE

For the EPO, this is the number of applications that were granted during the reporting period, divided by the number of disposals in the reporting period (applications granted plus those abandoned or refused).

For the JPO, the grant rate is the number of decisions to grant a patent divided by the number of disposals in the reporting year (decisions to grant or to refuse and withdrawals or abandonment after first office action).

For the KIPO, the grant rate is the number of patent approvals divided by the number of disposals in the reporting year (sum of the numbers of patent approvals, rejections, and withdrawals after first office action).

For the USPTO, the displayed USPTO grant rate is the total number of issued patents divided by the total number of applications disposed of in the reporting year. RCEs are not included in the disposals. This grant rate differs from the allowance rate usually reported by the USPTO, which counts the total number of applications determined to be eligible by USPTO patent examiners for a patent divided by the total number of applications disposed of in a reporting year. For the allowance rate, RCEs are included in the disposals. Both rates include plant and reissue patent applications in addition to utility patent applications. However, since utility applications comprise over 99 percent of these applications, the rates are almost identical to rates based strictly on utility applications.

OPPOSITION RATE

This term applies to the EPO and the JPO. The USPTO has opposition procedures but does not currently produce an opposition rate.

The opposition rate for the EPO is the number of granted patents for which the opposition period (which is nine months after the date of grant) ended in the reporting year and against which one or more oppositions were filed, divided by the total number of patents for which the opposition period ended in the reporting year.

The JPO rate is the total number of oppositions (counting one (1) for each patent) filed in the calendar year divided by the total number of granted patents in the calendar year.

APPEAL ON EXAMINATION RATE

For the EPO, the rate is the number of decisions to refuse in the examination procedure against which an appeal was lodged in the reporting year, divided by the number of all decisions to refuse for which the time limit for appeal ended in the reporting year.

The JPO rate is the total number of appeals against examiners' decisions of refusal filed in the calendar year divided by the total number of examiners' decisions of refusal rendered by the examiners in the calendar year.

For the KIPO, the rate is the number of appeals filed during the year after the examiner's decision to issue a final rejection against a patent application divided by the number of final rejections issued against a patent application during the year.

The USPTO rate, which includes utility, plant, and reissue categories, captures the number of appeals filed after an examiner's decision to issue a final rejection against a patent application. The rate is the number of examiner answers written during the year in response to appeal briefs divided by the number of final rejections issued that year. This rate includes plant patents and reissue patents in addition to utility patents (see above GRANT RATE).

For all five offices, any subsequent litigation proceedings in national courts are not included.

PENDENCY/ EXAMINATION / NUMBER OF APPLICATIONS AWAITING REQUEST FOR EXAMINATION

This does not apply to the USPTO.

This figure indicates the number of filed applications awaiting a request for examination by the applicant.

For the EPO, this indicates the number of applications for which the search report has not been published (pending in search) by the end of the reporting year, added to the number of applications for which the search report has been published but the prescribed period for the request has not expired (six months after publication of the search report).

For the JPO, the KIPO, and the CNIPA, the numbers of applications awaiting request for examination indicate the numbers of applications for which no request for examination has been filed by the end of the reporting year, and for which the

prescribed period for the request (three years after filing for the JPO, the KIPO and the CNIPA) has not expired.

For the JPO, numbers include the number of abandoned/withdrawn applications.

PENDENCY / EXAMINATION / NUMBER OF PENDING APPLICATIONS

For the EPO, this is the number of applications filed for which the search was completed and the request for examination was filed, yet they have not received a final decision by the examining division (announcement to grant, to refuse or abandonment) by the end of the reporting year.

For the JPO and the KIPO, pending applications in examination are applications for which the requests for examination were filed and which have been waiting for a first action and have not been subject to a final action such as withdrawal or abandonment by the end of the reporting year.

For the USPTO, pending applications in examination are applications that are waiting for a first action and have not been subject to a final action such as withdrawal or abandonment by the end of the reporting year. These figures do not include other pending applications that have been subject to a first action.

PENDENCY / EXAMINATION / PENDENCY FIRST OFFICE ACTION

This is measuring the delay until the first action on patentability.

For the EPO, the pendency to first office action is the average time period, in months, measured from the date of filing the application to the date of issue of the European search report which is extended to include an opinion on the patentability. The calculation is based on standard cases (i.e. excluding non-unity, incomplete search and or clarification request cases). The EPO changed their measurement from median to arithmetic mean. The figures for 2018 have been re-compiled based on the new methodology.

For the JPO, the first action pendency is the period from the date of examination request until the JPO sends the first notice of examination results to the applicant, etc. (for the most part, either a notice of patent grant or a notice of reasons for refusal).

For the KIPO, pendency first office action is the average time period, in months, from the request for examination to first office action in examination.

For the CNIPA, pendency first office action is the average time period, in months, from when applications entered the substantive examination phase following the request for examination to first office action in examination.

For the USPTO, first office action pendency compliance refers to the percentage of applications with a time from filing to First Action on the Merits (FAOM) within 14 months. An FAOM is generally defined as the first time an examiner either formally rejects or allows the claims in a patent application. The USPTO does not utilize an average pendency measure comparable to the other IP5 Offices. The USPTO has been moving to a compliance-based metric, which corresponds to the information shown in Table 4.3, with a set goal of mailing first actions within 14 months of filing in 45 percent of new cases acted upon, and issuing an allowance within 36 months of filing in 80 percent of all allowed cases. Showing traditional pendency in Figure 4.12 is done to go along with the more detailed time stops depicted.

PENDENCY / EXAMINATION / PENDENCY FINAL ACTION

For the EPO, the counts relate to pendency until a final decision by the examining division (decisions to grant) during the reporting year. This is the average time elapsed from the date on which the application enters the substantive examination, once the request for examination has been completed, to the date of the decision by the examining division. The calculation is based on standard cases (i.e. excluding cases with more than one request for extension of time limit or late payment of fees or rescheduling of oral proceeding).

For the JPO the total pendency (also called the “standard pendency”) is the period from the date of examination request to withdrawal or abandonment or until a final disposition (excluding cases where the JPO requests an applicant to respond to the second notice of reasons for refusal due to the amendments submitted by the applicant, and where the applicant performs procedures they are allowed to use, such as requests to the JPO for extension of the period of response and for an accelerated examination).

For the KIPO, pendency for examination in months is the total number of months taken for disposing applications as final actions (decisions to grant or to refuse, withdrawals, or abandonments) in the reporting year, divided by the number of final actions during the reporting year.

For the CNIPA, pendency for examination refers to the average time period taken, in months, for the granting of invention patent applications, calculated from the date on which the application enters the substantive examination phase to the date on which the decision to grant is issued.

For the USPTO, filing to issue compliance is calculated by measuring the time from filing to abandonment or issue for all applications that are issued in a year. The percentage of applications that have a compliance within 36 months is presented. This number includes plant patents and reissue patents in addition to utility patents (see above GRANT RATE). The USPTO does not utilize an average pendency measure comparable to the other IP5 Offices. Showing traditional pendency in Figure 4.12 is done to go along with the more detailed time stops depicted.

PENDENCY INVALIDATION

The CNIPA, “Pendency time in invalidation” refers to the duration from the date on which the notification of acceptance of request for invalidation is issued to the date on which the examination decision on request for invalidation is issued.

The JPO pendency period is the average processing period for a trial for invalidation in a calendar year from the date a request for a trial for invalidation is filed, to the date a trial decision is dispatched (if an “advance notice of a trial decision” is to be made, it is the date the notice is dispatched), to the date a withdrawal or abandonment is finalized and concluded, or to the date a dismissal is dispatched.

Annex 3

ACRONYMS

4IR	Fourth Industrial Revolution (13)
AI	Artificial Intelligence (ii)
AIA	Leahy-Smith America Invents Act (96)
ARIPO	African Regional Intellectual Property Office (38)
ASEAN	Association of Southeast Asian Nations (25)
CNIPA	China National Intellectual Property Administration (i)
CPC	Cooperative Patent Classification (13)
DO	Designated Office (16)
DOCDB	DOCumentDataBase (50)
EAPO	Eurasian Patent Organization (38)
EPAC	European Patent Administration Certification (12)
EPC	European Patent Convention (2)
EPO	European Patent Office (i)
EQE	European Qualifying Examination (12)
ET	Emerging Technologies (33)
EUIPO	European Union Intellectual Property Office (14)
EV	Electric Vehicles
FAOM	First Action on the Merits (100)
FY	Fiscal Year (20)
GCCPO	Gulf Cooperation Council Patent Office (38)
GHG	Greenhouse Gas
GXTI	Green Transformation Technologies Inventory (17)
IB	International Bureau of WIPO (iii)
IFRS	International Financial Reporting Standards (14)
IP	Intellectual Property (i)
IP5	Five IP Offices: EPO, JPO, KIPO, CNIPA, USPTO (i)
IP5 SR	IP5 Statistics Report (i)
IPC	International Patent Classification (3)
INPIT	National Center for Industrial Property Information and Training (87)
IPEA	International Preliminary Examining Authority (3)
IPRs	Intellectual Property Rights (21)

ISA	International Searching Authority (3)
IT	Information technology (10)
JPO	Japan Patent Office (i)
KIPA	Korea Invention Promotion Association (24)
KIPO	Korean Intellectual Property Office (i)
KEIT	Korea Evaluation Institute of Industrial Technology (24)
KISTEP	Korea Institute of Science & Technology Evaluation and Planning (24)
MoUs	Memorandums of Understanding (25)
NET/AI	New Emerging Technologies/Artificial Intelligence (i)
OAPI	Organisation African Intellectual Property (38)
PCT	Patent Cooperation Treaty (i)
PE2E	Patents End-to-End (33)
PGP	Patent Granting Process (10)
PHEP	Patent Harmonization Expert Panel (.)
PPH	Patent Prosecution Highway (iii)
P.R. China	People's Republic of China (2)
PTA	Patent Term Adjustment (31)
PTAB	Patent Trial and Appeal Board (33)
SMEs	Small and Medium-sized Enterprises (13)
R&D	Research and Development (17)
RCE	Request for Continued Examination (35)
R. Korea	Republic of Korea (2)
RO	Receiving Office (3)
RP	Reinforced Partnership (13)
UPC	Unified Patent Court (11)
U.S.	United States of America (2)
USPTO	United States Patent and Trademark Office (i)
WIPO	World Intellectual Property Organization (iii)

European Patent Office (EPO)

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Japan Patent Office (JPO)

3-4-3 Kasumigaseki, Chiyoda-ku
Tokyo 100-8915
Japan

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Korean Intellectual Property Office (KIPO)

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Republic of Korea

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China National Intellectual Property Administration (CNIPA)

No. 6, Xitucheng Lu, Jimenqiao,
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People's Republic of China

english.cnipa.gov.cn/

United States Patent and Trademark Office (USPTO)

P.O. Box 1450
Alexandria, VA 22313
United States

www.uspto.gov/

This report contains statistical information from the five major Patent offices in the world (IP5 Offices). It gives a description of worldwide patenting activities, and provides details and comparison about the business processes taking place at each office.

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Jointly produced by the EPO, JPO, KIPO, CNIPA, and USPTO.