

CWS/ATR/PI/2015/KR

Annual Technical Report on Patent Information Activities in 2015 submitted by the Korean Intellectual Property Office

I. GENERAL OVERVIEW OF RECENT DEVELOPMENTS IN PATENT INFORMATION ACTIVITIES CARRIED OUT BY THE OFFICE

Outline of main policies and plans aimed at development of patent information activities and expected time frames for their realization

Smart Examination System

The Smart Examination System was devised to accommodate KIPO examiners' requests for higher examination efficiency with consideration of a possibility of making their examination results public information for the sake of competitive examination period and quality examination at the Korean Intellectual Property Office (KIPO). More specifically, it is featured with two functionalities: 1) automatic analysis of applications, which highlights errors in each application including clerical mistakes, and 2) error prevention for notifications, which finds errors in notifications such as 'notification of reasons for refusal' and 'decision of refusal.'

Next Generation Search System

With the increasing demand for more accurate search results in the limited time available, KIPO also recognized the necessity of making its search system more optimized in reducing examination pendency and improving examination quality. To realize this, KIPO designed the Next Generation Search System and implemented the following: 1) introduction of up-to-date UI to provide a more customized search environment, 2) employment of a new search engine and linkage of some functionalities to one another, 3) expansion of high quality information, and 4) introduction of hybrid search function.

New projects launched or resumed this year in the context of the policies and plans mentioned above, short description: aims, partners, tasks

Smart Examination System (April to December 2015)

This project aims to improve examination efficiency and examination quality. Tasks involve developing some functions to 1) prevent errors in preparing notifications, 2) automatically analyze applications, and 3) compare divisional application and related applications.

Next Generation Search System (May to December 2015)

This aims to build a next-generation search system for patents and utility models which can bring exact search results so as to improve the quality of examination. Related tasks are 1) to improve the search performance by employing next generation search engine, 2) to provide extended search results by linking search functionalities, 3) to increase the search quality through high quality information, and 4) to eventually implement optimized and customized search environment for KIPO examiners.

Main areas of patent information activities and related information and communication technology (ICT) practices which were in the focus of attention last year

Statistics: changes in terms of application filings and grants with respect to previous year; trends or areas experiencing rapid changes

The changes in filings/grants for patents/utility models in 2015, compared to 2014, are as follow:

- Patents: filings (213,694, a 1.6% increase)/grants (101,873, a 21.5% decrease)
- Utility models: filings (8,711, a 5.2% decrease)/grants (3,253, a 34.3% decrease)

Other matters and useful links (URLs): annual report of the Office, news page, statistics, etc.

- Annual Report: http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=60114&catmenu=ek07_01_01_15
- Statistics: http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=97000&catmenu=ek07_03_01

II. SERVICES AND ACTIVITIES RELATED TO PATENT INFORMATION CARRIED OUT BY THE OFFICE

Information and support provided by the Office to applicants regarding filing on paper and/or e-filing (instructions, seminars, etc.) - URLs

To integrate scattered counseling resources and promptly provide technical advice, the Customer Service Center was established in March 2002. Its main services are on the following issues:

- Procedural and technical advice on (electronic) filing, examination, grant, trial, search and use of patent information, as well as international patent applications;
- Informing of the progress after consultation with additional guidance;
- Use of the Expert System (e-filing support system) and remote consultation;
- Consultations through mobile web/app or Twitter;
- Angel Call service, informing applicants in advance that their applications will be closed, along with suggesting reasonable solutions; and
- Consultations to socially vulnerable classes through text message and/or one-on-one chatting

e-Filing Portal (<http://www.patent.go.kr>)

At this web page, applicants can file their applications online and pay relevant fees via Internet banking. They can also request and receive certificates such as priority certificates via the Internet and check the progress of their request, as well as be informed of the administrative progress of their applications via e-mail and/or SMS. This is also linked to the WEB-PASS, which is a web-based e-filing system used for receiving intermediate documents and grant/trial-related documents, as well as all types of IPR applications.

Availability of the application dossier in electronic form

All patent and utility model applications filed at KIPO are made available in electronic format for its administrative processing including examination, publication, and trial. In 2015, 98.3 percent of the total patent applications and 90.1 percent of the total utility model applications were filed online via the e-filing portal mentioned above. The rest of such applications which were filed in paper are also digitalized in electronic format, along with all the other application-related documents including amendments and intermediate documents. This digitalization process employs multi-OCR, dual key input, automatic verification and color scanning. In 2015, 3510 patent applications and 859 utility model applications were digitalized.

Classification¹, preclassification² (if applicable), reclassification³ activities; classification systems used (e.g., International Patent Classification (IPC)); matters concerning indexing of patent information

International Patent Classification

KIPO's official classification system for patents and utility models is the International Patent Classification (IPC). Pre-classification is outsourced to a professional agency and each examiner decides which subgroup an application should be classified under.

KIPO's activities for 2015 were as follows:

- A total of 214,030 applications for patents and utility models filed at KIPO in 2015 were classified according to the IPC (2014 version) and CPC.
- 20,263 PCT applications were also classified based on the IPC.
- 231,902 old documents were reclassified according to CPC.
- 127,233 documents, which are listed in the Working List made by WIPO pertaining to the versions of 2007.01 to 2014.01, were reclassified in accordance with the revised IPC version 2014.01.

Abstracting, reviewing, and translation of the information contained in patent documents

For the purposes of international information sharing and overseas protection of Korean industrial property rights, the Korean Patent Abstract (KPA), an English abstract for patent applications published in 1999 onward and patent grants published in 1979 onward, has been provided on CD-ROMs or via FTP to 48 national IPOs and seven organizations including WIPO and the EPO. As of the end of 2015, the number of patent applications which have been published in KPA amounts to 2.27 million.

Other activities

III. SOURCES OF PATENT INFORMATION PROVIDED BY THE OFFICE

Main types of publications of the Office (patent applications, full text, first pages, abstracts, bibliographic data, granted patents, etc.), medium (on paper, on CDs, online - URLs)

Applications and grants of patent and utility model are published via PDF gazettes available at KIPO's website on a daily basis, while English patent abstracts (i.e., KPAs) are published on CD-ROM, as explained below.

Official Gazettes: main types of announcements, frequency of publication, medium (on paper, on CDs, online - URL), etc.

PDF gazettes of Korean patents and utility models can be seen for three months on KIPO's website (http://www.kipo.go.kr/kpo/user.tdf?a=user.html&HtmlApp&c=4135&catmenu=m03_03_02) for three months after being first posted on the website, since July 2001 for quick and easy access by the public. The gazettes are also offered to people who have subscribed to the mailing service. Furthermore, DVD-ROM gazettes are produced in XML format (up until February 2005 this data was produced in SGML format), to be distributed to three domestic organizations, twice a month. The gazettes on patents and utility models published in 2015 contained the following:

- 146,113 patent applications and 102,128 patent grants
- 4666 utility model applications and 3285 utility model grants

Information products and patent document collections (coverage, medium, etc.) available to examiners, including external collections and databases

Patent and Utility Model data available to KIPO examiners is made accessible through its search system and includes the following:

- Domestic data: patent and utility model applications (1983-); granted patents and utility models (1948-) and KPAs (1973-),
- Overseas data: applications and grants of patents and utility models from JPO (1971-); Espace-A (1978-); Espace-B (1980-); Espace-world (1978-); WIPO Impact Rule 87 (2002-); granted patents from USA (1974-); bibliographic data and abstracts of patents from Taiwan (2000-); patent applications from Great Britain (1979-); patent applications, granted patents and English abstracts from China (1985-); patent applications and granted patents from Canada (1981-); patent applications and granted patents from Australia (1980-), gazettes of patents from France (1992-), and bibliographic data and abstracts from Russia (1992-)
- Non-patent literature: theses and journals (via the National Digital Science Library); standard technology documents (i.e., 3GPP, IETF, ETSI, ITU, TTA, JCTVC, JEDEC, MPEG) and technologies announced on the internet (2000-), and Korean traditional knowledge (in theses, on medical stuff, disease symptom, prescription, architecture literature, and Wikipedia)
- Links to other offices' search services: Espacenet & European Patent Register (EPO); AIPN & IPDL (JPO); CNIPR (SIPO) and Patent Full-Text Database (USPTO).

Information products and patent document collections (coverage, medium, etc.) available to external users, conditions of access (e.g., free of charge, subscription, etc.)

Korea Industrial Property Rights Information Service (KIPRIS)

Since January 2001, domestic IPR information (including KPAs) has been offered free-of-charge through the Korea Industrial Property Rights Information Service (KIPRIS), which is available at <http://www.kipris.or.kr>. The service covers published patent and utility model applications in PDF (including the SGML-formatted publications before July 2001), and up-to-date information on the administrative progress of applications, including grant and trial related information. It also provides bibliographic data and full texts from Australia, Canada, China, France, Germany, Japan, United Kingdom, the United States of America, and WIPO, as well as abstracts from Taiwan and Russia (extracted from DOCDB). For foreign users, the English version of KIPRIS offers a real-time machine translation service for the full texts of Korean patents and utility models into English. Chinese, English, and Japanese to Korean machine translation services are also available to Korean domestic users. In addition, it offers searches for registration for an extension of patent term and intermediate documents such as office action and decision of grant or rejection, IP-NAVI (for international disputes), standard technologies (3GPP and IETF), lapsed patents, super citation documents, and CPC searches for patents from the EPO and USPTO. In 2015, KIPRIS was enhanced with the additions of the following features:

- Searches of state-owned patents and substance patents;
- Searches by sentence and the latest owner's name of patents and utility models;
- Copy & Paste of search results from KIPRIS to SNS such as Twitter and Facebook; and
- Linking to OPD service, which aims to share the information on examination progress of family patent applications

KIRPIPlus (<http://plus.kipris.or.kr>)

KIRPIPlus is a fee-based search service via an Open API targeting web service users, which was launched in September 2012. It offers a total of 64 types of data products including information on deadline, thesaurus, classification, KPA bibliographic data, IPC-KSIC classification mapping, DocDB and legal status to 52 domestic and foreign IP service providers such as WIPS, Markpro, and Wisdomain. In 2015, in particular, it added services for substance patents which are to be terminated soon, much-cited prior art, state-owned patents, intermediate documents, Japanese standardized data, and patent publications from Mexico and Philippines.

Legal status information (kind of information, coverage, medium, etc.)

KIPO's legal status information is made available at KIRPIPlus, mentioned above. Such information can be identified with 148 kinds of legal status codes and 234 types of event codes, and is updated every two weeks. Legal status codes represent the administrative progress of an application, while the event codes represent the ground for such legal statuses, for example, receipt and dispatch of documents. Some examples of such legal status codes are 'application to register extension of patent right term by permission,' 'application to register an extension for term of patent right due to registration delay,' 'request for examination,' 'request for registration of extension of term of patent right,' 'request for preferential examination,' 'maintenance of original decision after re-examination before a trial,' 'decision to grant registration after re-examination before a trial,' etc. As of the end of 2015, it had a database pertaining to 2.6 million documents of patent and 0.1 million documents of utility model.

Other sources

IV. ICT SUPPORT TO SERVICES AND ACTIVITIES RELATED TO PATENT INFORMATION CARRIED OUT BY THE OFFICE

Specific software tools supporting business procedures within the Office: general description, characteristics, advantages, possible improvements

There are a total of 4122 software applications to support KIPO's business procedures such as search, examination, registration, and trial in 175 types of the five groups, as below:

- System software: 12 types (i.e., DBMS, web server, middleware)
- Package software: 41 types (including PMS, BPM, electronic approval system, Call Center, DW, messenger, career development management system, Homepage portal, DQM, etc.)
- Security software: 52 types (firewall, invasion detection/protection, DRM, integrated certificates, DB security, personal information protection tool, etc.)
- Management software: 13 types (back-up tool, performance management tool, batch scheduler, etc.)
- Others: 57 types (search engine, drawing viewer, OCR, PDF converter)

Maintenance for system software mentioned above is conducted by a separate governmentally-integrated center, while the other software is managed by KIPO headquarters.

For databases, performance tests and recovery practice tests are regularly conducted with support from DB-related agencies. In addition, introduction and upgrades of system software such as DBMS, web servers and middleware help the KIPOnet system's performance and functionality to be continuously improved. In order to protect personal information and prevent unpublished patent information, state-of-the-art security patches are applied to such software.

Hardware used to supporting business processes of the Office

- Server: 52 UNIX Enterprise servers, 111 NT servers, and 145 Linux servers
- Storage equipment: 38 Storage(2630 terabytes), 18 SANs
- Peripherals: 6 backup devices, 2 jukeboxes

In 2015, the following activities were conducted for the sake of stabilization and improvement of hardware performance:

- 19 times of preventive exercise to respond to complex system hazard;
- Upgrade of old OS such as Windows Server 2003;
- Timely support for development of the Smart Examination System through relocation of idle servers;
- Simplification of infrastructure and reduction of operational costs by modifying network architecture;
- Extension of the IT Center to solve overpopulation of IT equipment; and
- Expansion to 13 terabytes for the foreign common documentation database

Internal databases: coverage, updates, interlinks with external sources

The patent and utility model database, created from applications, has been continuously updated and refined for search purposes. It includes bibliographic data (1983-1998), publications of applications (1983-), publications of grants (1948-), and KPAs (1979-). Such data is provided in different formats depending on the time of creation and publication, such as image, SGML or XML.

External sources are available on the non-patent literature search system via NDSL or an API linked to traditional knowledge database. They include ScienceDirect, IEEE, CA data, and 17 academic database such as ACS, OSA, Science, Nature, Wiley-online, Springer, AIP, APS, IOP, ASPB, OUP, MSL, RSC, Westlaw and LwanB, DBPIA, KISS, STN, and 12 individual online journals including JJAP, BCSJ, and PNAS.

Establishment and maintenance of electronic search file: file building, updating, storage, documents from other offices included in the search file

File building and updating

Search file is comprised of domestic data based on applications and foreign data collected from other offices. Such foreign data is parsed for the sake of classification and refinement and uploaded on the search database after error verification. As part of an effort to keep or improve the

quality of such data, data architecture and data value are prioritized. Data architecture administers naming rules for logic and physical names, data type, data length so that they can prevent confusion of terminology usage and improve data reusability, and system efficiency. From the perspective of data value, business rules are continuously created along with the regular measurements of data value. Finally, data with errors which occur in the process of administrative or business procedures are corrected after consultation with the departments involved.

Smart Data Quality Management System

For better data verification and refinement, KIPO continued to improve the smart data quality management system by expanding business rules for error verification from 5936 in 2014 to 6535 in 2015, and refining 8.8 million patent/utility model documents through data ownership. In 2015, a user manual for the data flow management system was built in 2015 and training courses were offered to staff members of KIPO affiliated organizations, along with related materials such as brochure and instructions.

Foreign data included in the search system

Documents from other offices included in the search file are the same as the overseas data under the section, "Information products and patent document collections (coverage, medium, etc.) available to examiners, including external collections and databases," above.

Administrative management electronic systems (register, legal status, statistics, and administrative support)

Other matters

V. PROMOTION ACTIVITIES AIMED TO SUPPORT USERS IN ACCESS AND EFFICIENT USE OF PATENT INFORMATION

Patent library: equipment, collection management, network of patent libraries in the country, cooperation with foreign patent libraries

IP Digital Library

The IP Digital Library archives patent documents, such as bibliographic data, abstracts and full texts, in a variety of media such as paper, microform, CD-ROM and DVD-ROM. The documents are obtained through exchange agreements with 18 countries and 4 international organizations, including the EPO, USPTO, and WIPO. The library also has non-patent literature (some of which has been donated, while others were purchased), comprising of over 36,091 volumes and 546 kinds of periodicals related to science and technology, and CD-ROMs of annual reports and statistics. The collections are arranged according to their category and volume number. KIPO examiners and the public are allowed access to this collection. The electronic database is provided at the Internet corner of the IP Digital Library. The library also offers original copies of electronic materials, such as electronic journals and e-books mentioned above.

Network of patent libraries in the country

KIPO has shared IP related publications and information with:

- The Korea Institute of Science and Technology Information through DDS (Document Delivery Service) for complimentary or subscription-based materials and through the NDSL (National Digital Science Library) service which provides access to the academic theses and scientific journals of 722 domestic libraries and information centers
- The National Assembly Library since 2002 on over 7.67 million volumes of theses, government publications, seminar materials and books
- The Korea Education & Research Information Service through RISS (Research Information Sharing Service).

Publications related to different business procedures and patent information sources available to users, for example, books, brochures, Internet publications, etc.

- Business procedures (filing, publication, examination, grant, opposition, appeal, etc.): http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=92000&catmenu=ek03_01_01

Office's initiatives on providing foreign patent information in the local language(s) (e.g., machine translation tools, translation of abstracts)

To serve its examiners and the general public, KIPO has developed its Machine Translation (MT) services—Japanese to Korean (J2K), English to Korean (E2K), Korean to English (K2E) and Chinese to Korean (C2K) MT services—and provided such services on the respective search systems called KOMPASS and KIPRIS. However, the K2E service is unavailable to examiners. Those MT services are based on the employment of dictionaries, translation memory (TM) and translation patterns of the respective bilingual words matches. In addition, KIPO also conducts MT quality evaluation on a regular basis. As of the end of 2015, each service is supplemented with:

- E2K: 3.9 million terminologies, 60 thousand TM, and ten thousand translation patterns;
- J2K: 2 million terminologies, 30 thousand TM;

- K2E: 3.7 million terminologies, 10 thousand TM; and
- C2K: 1.1 million terminologies, 10 thousand TM

Cooperation with universities, research centers, technology and innovation support centers, etc.

Education and training: training courses, e-learning modules (URLs), seminars, exhibitions, etc.

Other activities

VI. INTERNATIONAL COOPERATION ACTIVITIES IN THE FIELD OF PATENT INFORMATION

International exchange and sharing of patent information in machine-readable form, e.g., priority documents, bibliographic data, abstracts, search reports, full text information

Data acquisition and uploading

Bibliographic data and/or full text from 53 offices (or organizations) mentioned in the above section "Information products and patent document collections (coverage, medium, etc.) available to examiners, including external collections and databases" are collected through mutual data exchange or purchased at a marginal cost for internal use. Such data is uploaded onto KIPO's search system after data verification procedures and family data building based on DocDB.

KIPO's data provision

KIPO has provided its official gazettes to 11 foreign IP offices including EPO and WIPO and 12 domestic entities. It also offers KPAs to 49 foreign IP offices such as the JPO, SIPO, and the USPTO and seven international organizations, on either CD or s-FTP on a monthly basis.

Exchange of priority documents

KIPO has exchanged priority documents with the EPO, JPO, and USPTO using the Trilateral Document Access (TDA). The number of priority documents exchanged via TDA in 2015 was 4292 between KIPO-EPO, 8190 between KIPO-JPO, 9271 between KIPO-SIPO, and 68,242 between KIPO-USPTO. In addition, KIPO has also exchanged priority documents with AU, DK, ES, FI, GB, SE, and IL through WIPO Digital Access Service (DAS) since July 2009.

Dissemination of Korean patent information by K-PION

To help the examiners of foreign IPOs with their examination, KIPO launched a Korean to English (K2E) translation service for publications on patent/utility model applications, the so-called "the Korean Patent Information Online Network (K-PION)," in November 2005, which is now available at <http://k-pion.kipo.go.kr/>. The K-PION service is operated 24/7 based on a K2E translation engine which has been customized for patent documents with approximately 3.7 million technical terms and sentence patterns. It covers translation of file wrapper information and English keyword search for publications (or gazettes), including KPAs.

Participation in international or regional activities and projects related to patent information

Global Dossier

Global Dossier aims to allow each office's examination information to be retrievable at a single portal and allow applicants to have the effect of simultaneous filing to multiple offices by a single filing. This concept was proposed by the USPTO in November 2011 among the IP5 offices (i.e., EPO, JPO, KIPO, SIPO, and USPTO). In line with this, KIPO launched its OPD service for examiners in August 2013, for the sake of the retrieval of examination information for IP5 family applications with application numbers at a time. In the meantime, the IP5 offices made an agreement on making the OPD service open to the public at the IP5 Heads meeting held in June 2013. To this end, KIPO launched its OPD Public Service in March 2015 and connected its OPD Examiner Service to WIPO CASE in order to share examination information with many more IP offices such as Australia, Canada, United Kingdom, Israel, and Brunei Darussalam.

Assistance to developing countries

KIPO-WIPO Joint IPR Education Projects

WIPO and KIPO have jointly managed the Advanced International Certificate Course, which is a blended IP program based on IP Panorama, targeting WIPO member states. In 2015, 641 trainees from 86 countries took the online course and 32 trainees from 19 countries attended the offline course of the blended program. In collaboration with the WIPO Worldwide Academy (WWA), KIPO has also offered the DL-101 course that covers the main areas of IPR in English to students of domestic universities that are affiliated with KIPO. Students who take these courses are issued with WIPO WWA and KIPO joint certificates. In 2015, 1585 students in 11 universities completed the course. Moreover, WIPO and KIPO jointly developed a mobile version of IP Panorama and had a launching ceremony for a global version of "IP Ignite" in Geneva.

Other activities

PATINEX 2015

To exchange information and facilitate the use and dissemination of IP information, an annual IP conference titled PATINEX (PATent INformation EXpo) has been conducted by KIPO since 2005. The conference is comprised of three events: a conference which focuses on the introduction of strategies and practices of IP information; an exhibition which shows diverse, up-to-date services and solutions of IP information; and a workshop where participant service providers give in-depth consultations on the use of IP information. The ninth PATINEX was held in September 2015, consisting of:

- Conference: under the theme "IP Knowledge Beyond Borders"
- Workshop: to give IP information service providers an opportunity to promote and market their products and services at 20 exhibition booths

VII. OTHER RELATED MATTERS

1. Classification is allotting one or more classification symbols (e.g., IPC symbols) to a patent application, either before or during search and examination, which symbols are then published with the patent application.

2. Preclassification is allotting an initial broad classification symbol (e.g., IPC class or subclass, or administrative unit) to a patent application, using human or automated means for internal administrative purposes (e.g., routing an application to the appropriate examiner). Usually preclassification is applied by the administration of an office.

3. Reclassification is the reconsideration and usually the replacement of one or more previously allotted classification symbols to a patent document, following a revision and the entry into force of a new version of the Classification system (e.g., the IPC). The new symbols are available on patent databases.