

# CWS.ATR.PI.2013.KR

## Annual Technical Report 2013 on Patent Information Activities submitted by Republic of Korea (CWS/ATR/PI/2013/KR)

Where URLs are requested below, it is preferred that either URLs which are likely to remain stable over time (three years or more) are provided, or home (main) page URLs are provided with a short explanation of how to access the corresponding information.

The term "patent" covers utility models and Supplementary Protection Certificates (SPCs). Offices which issue design patents should report their design patent information activities in their Annual Technical Reports on Industrial Design Information Activities.

### 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

Implementation of the 3rd Generation KIPOnet (KIPOnet III)

KIPOnet III aims to cope with the international environmental changes in the IP area such as PLT and increase business efficiency and applicants' convenience based on state-of-the art IT technologies. The previous system, therefore, needs to be redesigned in order to overcome its complexity and scalability through modularization by function and business process based on cloud-computing technologies. The detailed schedule for implementing KIPOnet III is as follows:

- 2010: system analysis and design
- 2011: development of 11 sub-systems including examination system, transfer to standardized DB and construction of cloud-computing infrastructure
- 2012-2013: system development and optimization to 1) allow formless application according to PLT, 2) improve the existing PCT system according to the introduction of recovery of lapsed rights, 3) apply e-government standards to both the trial system and the international information-sharing system, and 4) improve public authentication system

Development of Open e-Filing Portal

Users' computing environment has been also changed and continuously requires easier and faster system accessibility. Confronted with changes in the operating system, diverse web-browsers and popularized mobile devices, KIPO plans to improve its e-filing portal by 1) developing the replacement of Active-X to improve compatibility, 2) increasing web accessibility and acquiring an authenticated quality mark, 3) rebuilding PDF-based e-filing software and 4) building a system to manage a variety of forms for better operational efficiency.

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

2nd phase development project of the KIPOnet III (April 2012 - May 2013)

This project aims to cope with the international environmental changes in the IP area, to increase applicants' convenience, and to reengineer the system architecture. Detailed tasks are 1) to develop administrative systems for PLT and PCT businesses, 2) to develop examination systems for PCT and Madrid protocol, and 3) to develop systems for trial businesses, and 4) to improve cloud-computing environments.

1st phase project for Open e-Filing Portal (April 2013 - March 2014)

This aims to improve the e-filing business efficiency as well as the related service quality. Related tasks are 1) to increase the web-accessibility (to support visually-handicapped applicants), 2) to improve the web browser compatibility and 3) to develop the e-filing software to allow preparation of PDF-based forms.

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

- Changes in JAVA technology for the e-Filing Portal (<http://www.patent.go.kr>): certificates, file Up/Down, firewall, forgery prevention function; support for diverse web browsers such as IE, Chrome, Safari, Firefox and Opera
- Development of PDF-based form-making software suite
- Server-Based Computing (SBC): to allow users to continue their work regardless of time and place; to fundamentally prevent information leak not disrupting information sharing by managing business programs and materials on a server rather than an individual PC

#### 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 2013, compared to 2012, are as follow:

- Patents: filings (204,589, a 8.3% increase)/grants (127,330, a 12.2% increase)
- Utility models: filings (10,968, a 11.7% decrease)/grants (5,959, a 6.2% 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\\_13](http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=60114&catmenu=ek07_01_01_13)

- Statistics: [http://www.kipo.go.kr/kpo/user.tdf?a=user.english.html.HtmlApp&c=97000&catmenu=ek07\\_03\\_01](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 on international patent applications
- Informing the progress after consultation with additional guidance
- Use of the Expert System (e-filing support system) and remote consultation
- Consultation through mobile web/app or Twitter
- Angel Call service, informing applicants in advance that their applications would be closed along with suggesting reasonable solutions

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

98.2 percent of the total patent applications and 90.2 percent of the total utility model applications filed to KIPO in 2013 have made available in electronic form from being filed by applicants via electronic media such as disc, CD, USB, or 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 2013, 4229 patent applications and 1082 utility model applications were digitalized.

### Classification<sup>1</sup>, preclassification<sup>2</sup> (if applicable), reclassification<sup>3</sup> activities; classification systems used (e.g., International Patent Classification (IPC)); matters concerning indexing of patent information

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.

In 2013, 219,865 applications were classified according to the IPC (2013 version). Additionally, 31,487 applications related to the classes "A61M, A63F, B23K, B42D, B44F, C09D, E04D, E05B, F24J, G01N, G01R, G03B, H01L, H01M, H02N and H04N" were reclassified in accordance with the 2014 version of the IPC.

### 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 42 national IPOs and seven organizations including WIPO and the EPO. As of the end of 2013, the number of patent applications which have been published in KPA amounts to 2 million.

## 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=4013&catmenu=m04\\_03\\_03](http://www.kipo.go.kr/kpo/user.tdf?a=user.html.HtmlApp&c=4013&catmenu=m04_03_03)) 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 by email 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 10 domestic and 23 foreign organizations, twice a month. The gazettes on patents and utility models published in 2013 contained the following:

- 141,194 patent applications and 126,794 patent grants
- 7472 utility model applications and 5976 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 (1979-),
- Overseas data: applications and grants of patents and utility models from JPO (1976-); Espace-A (1978-); Espace-B (1980-); Espace-world (1978-); WIPO Impact Rule 87 (2002-); granted patents from USA (1975-); bibliographic data and abstracts of patents from Taiwan (2000-); patent applications from Great Britain (1991-); patent applications, granted patents and English abstracts from China (1985-); patent applications and granted patents from Canada (1999-); patent applications and granted patents from Australia (1998-) and gazettes of patents from France (1992-),
- Non-patent literature: theses; journals (via NDSL service as explained below in the section "Patent library..." under "Promotion activities aimed to support users in access and efficient use of patent information"); standard technology documents (3GPP) and technologies announced on the internet (2000- ), and
- 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), up-to-date information on the administrative progress of applications, including grant and trial related information. It also provides bibliographic data and abstracts from China, Russia (extracted from DOCDB) and Taiwan, as well as the full texts from CIPO, EPO, IP Australia, JPO, USPTO and WIPO. For foreign users, the English version of KIPRIS offers 'K2E-PAT' service, a real-time machine translation service for the full texts of Korean patents and utility models into the English language. English and Japanese to Korean machine translation services are also available to Korean domestic users.

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

KIRPISPlus is a fee-based search service via an Open API targeting web service users, which was launched in September 2012. As of the end of 2013, it offers a total of 43 Open APIs including information on deadline, thesaurus, classification, KPA bibliographic data, IPC-KSIC classification mapping, DocDB and legal status to 40 domestic and foreign IP service providers.

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

KIPO's legal status information is made available at KIRPISPlus mentioned above. Such information can be identified with 74 kinds of legal status codes and 167 types of event codes and 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.

## **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 3853 software applications to support KIPO's business procedures such as search, examination, registration, and trial in 161 types of the four groups, as below:

- System software: 11 types (i.e., DBMS, web server, middleware)
- Package software: 37 types (including PMS, BPM, electronic approval system, Call Center, DW, messenger, career development management system, Homepage portal, DQM, etc.)
- Security software: 43 types (firewall, invasion detection or protection, DRM, integrated certificates, DB security, personal information protection tool, etc.)
- Management software: 15 types (back-up tool, performance management tool, batch scheduler, etc.)
- Others: 55 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 Oracle. 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: 54 UNIX Enterprise servers, 110 NT servers, and 40 Linux servers
- Storage equipment: 29 Storage(1714 terabytes), 19 SANs
- Peripherals: 7 backup devices, 2 jukeboxes

In 2013, the following activities were conducted for the sake of stabilization and improvement of hardware performance:

- Eight times of configuration check for cluster-paired servers for e-filing, homepage, IPR administration, and search systems, etc.
- Firmware upgrading for 13 devices
- Shift of search index and thumbnail image data to memory disk
- Replacement of 5 memory servers for IPR administration
- Version upgrade of event-monitoring tool (i.e., OVO)
- 3rd DNS configuration to support internet services

### **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 (1983-2001), publications of applications (1983-), publications of grants (1948-), KPAs (1979-), trial decisions (1957-), and judgments (1964-). 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 at the non-patent literature search system via NDSL or an API linked to traditional knowledge database. They include ScienceDirect, IEEE, CA data, and a variety of journals such as JJAP, BCSJ, ACS, OSA, Science, Nature, Wiley-online, Springer, AIP, APS, Westlaw and LwanB, and academic journals such as DBPIA, KISS, Merck Index, IOP, ASPB, OUP, MSL, RSC, SPIE, STN.

### **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 5252 in 2012 to 5592 in 2013 and refining 4.2 million patent/utility model documents through data ownership. In addition, the data flow management system, built in 2012, employed 828 relevant businesses and data flows for error detection. The enterprise data architecture for KIPOnet III along with related instructions and procedures, to analyze and manage patent data flow, have also been added.

#### **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.

## **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 37,291 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.

#### **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 WILL (Web Inter Library Loan) and DDS.

### **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](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)**

KIPO's Machine Translation (MT) services are different depending on the target users: Japanese to Korean (J2K), English to Korean (E2K), Korean to English (K2E) and Chinese to Korean (C2K) MT services are available for its examiners, while J2K, E2K and K2E MT services are offered to the general public through the KIPRIS service mentioned above. Those MT services are based on the employment of dictionaries, translation memory and translation patterns of the respective bilingual words matches, which KIPO has developed autonomously.

## 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 full text from 12 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 23 offices and KPAs to 39 offices and seven international organizations, including EPO and WIPO, 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 2013 was 4286 between KIPO-EPO, 9745 between KIPO-JPO, and 33,308 between KIPO-USPTO.

In addition, KIPO has also exchanged priority documents with AU, CN, 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 applicants to have an effect of simultaneous filing to multiple offices by a single filing.

In August 2013, IP5 offices (i.e., EPO, JPO, KIPO, SIPO, and USPTO) launched the One Portal Dossier (OPD) for the sake of the retrieval of examination information for IP5 family applications with application numbers at a time. Following the agreement on making the OPD service open to the public in the future at the IP5 Heads meeting held in June 2013, the IP5 offices discussed related issues at the working level meeting in October 2013.

#### Effort to facilitate the exchange of patent information among offices

At the IP5 Heads meeting above, they also agreed, in principle, to the IP5 Patent Information Policy, which allows the dissemination of patent information database to the general public for their commercial uses.

### Assistance to developing countries

#### KIPO-WIPO Joint IPR Education Projects

WIPO and KIPO have jointly managed a blended IP program based on IP Panorama, targeting WIPO member states called the Advanced International Certificate Course. In 2013, 633 trainees from 86 countries took the online course and 24 trainees from 12 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 2013, 1567 students in 13 universities completed the course. Moreover, WIPO and KIPO agreed to develop a mobile version of IP Panorama and globally use the newly-developed content named "IP Ignite."

### Other activities

#### PATINEX 2013

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 2013, consisting of:

- Conference: under the theme "Tomorrow's IP: Insights into East Asian IP Information"
- Workshop: to give IP information service providers an opportunity to promote and market their products and services.

## VII. OTHER RELATED MATTERS

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| 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. |
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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.