


# Promoting the Creation and Use of IP





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Strategic Use of IP in R&D

IP is strategically incorporated to optimize research and development and foster innovation.

# Optimization of IP-based National R&D

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## **Intellectual Property Creation Strategy Division**

“IP-R&D” refers to the strategic integration of IP within the research and development (R&D) process that focuses on fostering innovation and ensuring that R&D outputs are protected and leveraged effectively through IP rights. Therefore, the ROK government has focused on IP-R&D as a strategic approach to building an innovative economy that raises national competitiveness while allowing sustainable and secure development.

Previously, as part of a five-year IP-R&D project (2017-2021), the ROK provided support for customized patent strategies for 1,862 R&D projects in total undertaken by industry, academia, and research institutes. Also, from 2020 to 2022, KIPO provided patent trend analysis results to be applied during the planning phase of government R&D projects. With high satisfaction from participating institutions, the expected economic effects amount to about KRW 1.38 trillion (12.3 times the cost of government support) by securing overseas patents, promoting technology transfers, and increasing royalty income. Budget savings were worth approximately KRW 301.8 billion by avoiding duplicate projects and providing specific direction to R&D.

In September 2023, the ROK implemented the “Special Act on the Development of National Strategic Technologies”

which mandates the integration of IP strategies in R&D activities across government departments. This includes KIPO carrying out analysis on national strategic technology patent trends and R&D departments conducting strategic research and analysis on IP rights.

Accordingly, KIPO has begun the task of supporting IP-R&D in full force to improve the efficiency of R&D in national strategic technology fields, such as semiconductors, advanced bio, and quantum. The main methods of support include providing customized patent strategies to R&D institutions in these related fields and disseminating a “IP-R&D Implementation Guidelines.”

### **1) Patent Strategy Support**

KIPO is newly supporting the patent strategies of institutions that perform R&D for national strategic technologies. A total of 50 institutions is selected through consideration of the urgency and impact of national strategic technology development. This includes 20 institutions from innovation-leading fields (i.e., semiconductors, displays, secondary batteries, etc.); 15 from future-challenges fields (i.e., advanced bio, hydrogen, etc.); and 15 from essential-foundation fields (i.e., quantum, artificial intelligence, advanced robotics/manufacturing, etc.).

## **2) IP-R&D Implementation Guidelines**

In December 2023, KIPO created the “IP-R&D Implementation Guidelines” for providing government departments in charge of national R&D projects with reference information to facilitate strategic research and analysis of IP rights, such as patents. The Guidelines contain patent trends for 12 national strategic technologies, definitions of strategic research and analysis, patent trends for specific key technologies, essential analysis content based on the type of key

technology or R&D (i.e., basic, applied, development, etc.) and quality control of the research and analysis.

Furthermore, KIPO plans to restructure its patent big data analysis project focusing on the 12 national strategic technologies and plans to create a system that supports government R&D planning which will actively enhance the efficiency from a patent perspective as well as foster private patent research and analysis institutions for IP-R&D.



# Public Release of Pharmaceutical Experimental Dataset

## Industrial Property Data Management Division

KIPO operates a data platform called the Korea Intellectual Property Rights Information Service Plus (also known as “KIPRISPlus”) which provides information on domestic and international IP rights publications and IP administration of 13 countries. In February 2023, through KIPRISPLUS (plus.kipris.or.kr), KIPO released about 450,000 records of pharmaceutical experimental data to be freely available to the public.

The released information includes data related to pharmaceutical experiments as well as reference dataset that allows AI to extract experimental data included in the Patent Gazette. KIPRISPlus also provided 119 types of reference dataset for AI which has been opened for multilingual translation and image search in the format of files or OpenAPI.

In particular, the pharmaceutical experimental data is a database of basic

information derived from processing and analyzing images of tables included in the Patent Gazette, such as active ingredient names, test methods, and test values. The dataset contains information from image classification by categorizing data from various images, table structures (rows x columns) by accurately extracting table data, and experimental data identification by automatically identifying names of ingredients, test values, etc.

With the released pharmaceutical experimental data, textual data can be extracted from image-based data on patent documents and research papers which can then be analyzed. Based on this, IP service providers will be able to develop services that extract and utilize experimental data from the Patent Gazette. In turn, related companies and research institutions will be able to use examples and data for their research and development of vaccines, new drugs, etc.

### AI Reference Dataset

<b>Image</b>	Classifying information from images attached to domestic patent gazettes (e.g. tables, graphs, chemical formulas, flowcharts, etc.)	
<b>Table Structure</b>	Distinguishing structural information (rows x columns) from the table to accurately identify table data and extract textual information	
<b>Experimental Data</b>	Identifying reference data for automatic classification of components used in experiments, experiment names, values, etc.	
<b>Detailed Information</b>	Service Type	Bulk Data
	Number of Data	447,000 cases
	Provision Method	DB Bulk
	Details	Images, table structure information, attribute information
	Cost	Free

# Establishment of the Patent Statistics Center

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## **Intellectual Property Policy Division**

As IP statistics is an important objective criterion for national policy decision-making, major national IP offices are known to regularly publish IP statistical analysis reports prepared by economic and industry experts to reflect key national policies. However, until now, KIPO has published reports mainly focused on quantitative values and current trend analysis of IP. In January 2023, KIPO launched the “Patent Statistics Center” to specialize in collecting, analyzing, and disseminating IP data and statistics by PhD-level experts who are capable of conducting analysis from economic and industrial perspectives.

As a specialized unit established within the Korea Institute of Intellectual Property (KIIP), the Patent Statistics Center aims to provide valuable insight and support for IP stakeholders, including policymakers, researchers, businesses, and innovators. The Center will continuously perform tasks such as analyzing the value and economic impact of IP based on the latest statistics of patents, utility models, trademarks,

and designs. Furthermore, the published reports will be utilized to enhance support for national R&D innovation as well as the formulation of economic and industrial security policies and business management strategies.

For example, statistical analysis of patent big data of key industrial sectors (i.e., semiconductors) can help assess technology trends and company competitiveness and identify promising R&D projects. Also, statistical analysis of patents and market trends can help early detection of industries with declining or diminishing competitiveness. And lastly, for import products that highly depend on foreign country support, statistical analysis of the import products and patents can help set direction for technological independence.

Going forward, users such as companies and public institutions will be able to have convenient access to high-quality IP statistical analysis reports through the KIIP website ([www.kiip.re.kr](http://www.kiip.re.kr)).

# Vitalization of Idea Transactions

## Idea Innovation Division

“Idea Transaction” generally refers to the buying and selling of ideas, concepts, or innovations among inventors, creators, and businesses at various stages of development. In other words, idea creators connect with those who can turn their concepts into reality and companies obtain ideas to develop innovative products. By facilitating such opportunities and the right environment for idea transaction, KIPO has been working to bridge the gap between idea creators and potential buyers or collaborators, ultimately encouraging innovation and growth of economy.

years of its operation, Idea-ro has attracted approximately 15,000 members with registering 7,423 ideas and completing 562 idea transactions. In 2023, the cumulative amount of transaction surpassed 250 million won for the first time.

### 2) Hosting the First “Idea Day”

To promote and encourage idea transaction activities, KIPO organized and hosted the first “Idea Day” event in December 2023. The event showcased the best examples of idea transactions, presented research on protection and utilization strategies of ideas, and presented awards to notable achievements with idea transactions and to the winners of the National Idea Competition.

### 1) Creating an Ecosystem for Idea Generation and Utilization

Especially in the era of digital transformation, it is important to create a digital ecosystem conducive to vitalizing idea transactions. Therefore, KIPO established Idea-ro ([www.idearo.kr](http://www.idearo.kr)) as an online idea transaction platform for idea transaction that facilitates innovation, IP management, and collaboration by allowing the sharing and trading of ideas while ensuring that ideas are protected through IP rights.

One of the recipients of KIPO’s commendation, Barup Co., Ltd., used Idea-ro to propose the idea of a lightweight and organized “train cabin cleaning cart” designed for elderly cleaning workers which led to a business contract with KorailTech, a railway tech company affiliated with the ROK’s national railway system. Another recipient, the National Land Safety Management Institute used Idea-ro for soliciting ideas on construction and facility safety management, contributing to the activation of idea transactions by tendering 74 projects and purchasing 123 ideas from the public.

2023 Idea Day



### Operational Performance of Idea-ro

Category	Mar. 2021~	2022	~Dec. 2023	Cumulative
Number of Transaction	112	155	295	562
Amount (in 10000 won)	5,931	4,901	14,210	25,042

# Enhancement of the Reliability of IP Valuation

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## **Intellectual Property Utilization Division**

As more companies rely on IP finance to leverage their intangible assets and secure financing (i.e., IP-backed collateral for loans, IP-based investments, etc.), it is particularly crucial to provide reliable and systematic valuation of a company's IP assets. Within this framework, IP valuation refers to the process of determining the current or potential economic value of an intangible IP in a monetary amount or quantitative grade or score. The ROK is especially leading in the efforts to establish standards and best practices for IP valuation by improving transparency, reliability, and consistency.

### **1) Launch of the IP Valuation & Management Center**

With rapid expansion of the scale of IP finance activities in the ROK, it is becoming increasingly important to ensure accurate valuation of IP which is crucial for facilitating financial transactions and attracting investment. Therefore, in July 2023, KIPO launched the "IP Valuation & Management Center" within the Korea Invention Promotion Association (KIPA) to provide overall management of the quality of IP valuation.

The IP Valuation & Management Center is dedicated to quality control tasks, such as developing various assessment models for IP valuation, distributing them to valuation institutions, and operating a valuation information system that manages

the results. Additionally, experienced professionals conduct sample surveys to diagnose the quality of selected results and validity surveys to ensure that valuation is conducted according to evaluation standards as well as carrying out other investigations and analysis tasks on valuation results.

### **2) Expansion of IP Valuation Institutions**

To further encourage IP finance as an alternative source of financing for innovative companies, KIPO designated 11 more institutions in the private sector to be IP valuation institutions. With these additions, the number of institutions that can conduct valuation of IP assets has increased to a total of 33 (25 private, 8 public) from the previous 22 (14 private, 8 public).

Before designating the new institutions, KIPO carried out on-site inspections and specified evaluations through external experts. As IP valuation institutions have significantly expanded, especially in the private sector, KIPO will provide them with training to establish themselves in the market and to manage the quality of IP valuations. Furthermore, there is potential for IP valuation to be applied to other areas such as IP transactions and technology transfers or when analyzing damages from patent infringement and technology misappropriation.