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Higher Scrutiny of Employee Invention Remuneration Cases

By Won KIM, Hae In LEE and Aeree KO

Under the Invention Promotion Act, an employee has the right to receive reasonable compensation in return for assigning in-service inventions to their employer. In determining reasonable compensation, an employer should consider the profits the employer has obtained or expects to obtain from the exclusive use of the invention, as well as how much the employee contributed in completing the invention when compared to the contributions of the employer or other employees (see Article 15(6) of the Invention Promotion Act and Supreme Court Decision No. 2014Da220347 rendered on January 25, 2017). Korean courts have oftentimes required little evidence to acknowledge that the employee is entitled to additional compensations, e.g., that an issued patent alone affords a certain degree of benefit to the employer when determining reasonable compensation for employee inventions. However, recent decisions, as discussed below, show that Korean Courts are beginning to review employee invention compensation cases under a heightened level of scrutiny, requiring employees provide clear supporting evidence connecting the companies' profits with the contribution to the invention.

Medical Device Case

A former employee of a medical device company sought compensation for an in-service invention based on an issued patent. In the past, Courts have often assumed that the employer's profits were attributable to the invention without requiring detailed evidence directly linking the employer's profits to the invention. Criticizing this trend, the medical device company argued that the employee must show that the employer's profits were directly attributable to the exclusive use of the invention. The District Court held that the employee is not entitled to the reasonable compensation because the medical device company does not appear to have gained any profit from the exclusive use of the in-service invention. The Court looked at several factors, including: how much of the product is attributable to the invention, whether the invention is a major factor for customers in purchasing the product, whether the invention can be seen as a major cause of increase in sales or market share, whether the invention makes the product technically superior to competitors' products, and whether there is an alternative technology to the invention (see Seoul Central District Court Decision No. 2019Gahap563099 rendered on May 27, 2022). In sum, the employee was not entitled to compensation because they failed to directly connect the profits with the employee's contribution.

Automotive Engine Case

An employee for an automobile manufacturing company sought compensation for a patented invention used in mass-produced automotive engines. The case was appealed all the way up to the Supreme Court of Korea. After a detailed review, the Appellate and Supreme Courts found that the employee failed to establish that he had made any meaningful contribution to the invention that could be connected to the company's profits.

We will continue to keep an eye out to see if this trend of holding employees accountable for establishing a direct nexus between their level of contribution and the employer's profits continues. If so, employers may look into reevaluating your employee compensation programs and policies.

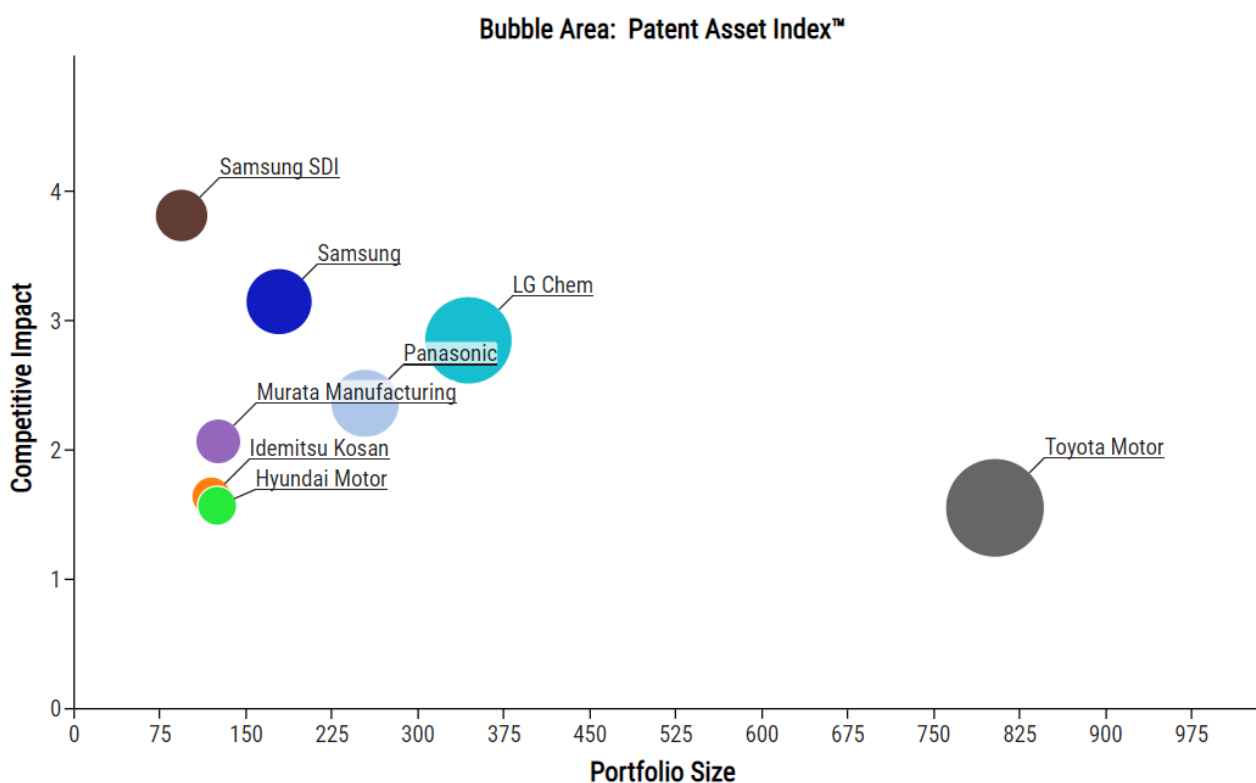
Who Will Win the Race to Lead the Solid-State Battery Market?

By Sung Eun KIM, Inchan Andrew KWON and Bo Kyung CHOI

All-solid-state batteries ("SSB") are widely expected to become the predominant next-generation power source for electric vehicles. Recently, the Japanese financial newspaper Nikkei ([here](#)) reported that Japanese filers represent by far the largest share of patents for SSB technologies filed worldwide, including companies such as Toyota, Panasonic and Idemitsu Kosan, while leading South Korean companies in the automotive battery space such as Samsung Electronics, LG Chem (including LG Energy Solution [LG Ensol]) and Hyundai Motors are some distance behind in terms of the number of filings for these technologies, based on patent analysis by Patent Result Co. Ltd.

The report noted that while Toyota, the undisputed leader in filings, holds numerous patents covering a wide range of fields (everything from structures and materials to manufacturing processes), Korean companies have been ramping up their patent filings significantly since 2016, and in particular possess many patents that directly relate to real-world performance, such as the life span of batteries.

Although the portfolios of Samsung and LG Ensol are smaller in number than those of Japanese companies such as Toyota and Panasonic, the values of their patent portfolios according to the Competitive Impact™ or Patent Asset Index™ metrics provided by PatentSight® are comparable or greater, as the figure below shows. The Competitive Impact™ (axis Y) estimates the average value of individual patents in a portfolio. The Patent Asset Index™ (bubble area) is the sum of the Competitive Impacts of all patents in a portfolio, and conveys the innovative strength of the company's portfolio. Thus, despite the fact that Samsung and LG Ensol appear to have significantly fewer patents in the SSB space compared to Japanese competitors, individually their patents appear to be more valuable and higher quality.

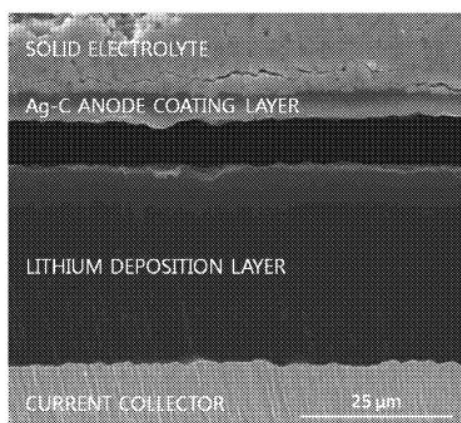


Patent portfolio of major Japanese and Korean companies in SSB field
(based on Kim & Chang's own patent analysis)

The situation with SSB patent filings appears to be very similar to the situation with lithium ion secondary battery patent filings in the mid-2010s, when Korea took over the lead for such filings from Japan. Thus, a brief review of the current status of development of SSB technology by Korean companies may be helpful for gaining insight into the future direction of this market.

Samsung (in particular Samsung SDI) seems to be the most advanced of the major Korean companies with respect to SSB development, given that they recently started construction of an

FIG. 6



SSB pilot line on May 14, 2022. Looking at Samsung SDI's recent announcements in the "Battery Day 2022" seminar put on by the Electronic Times (a Korean newspaper, [here](#)) as well as their patent information, they seem to be focused on developing an SSB based on an ultrathin Ag-C composite in a lithium metal anodeless structure using a sulfide-type solid electrolyte. (See *left* Fig. 6 of Samsung SDI's US Patent No. 11349114 B2)

LG Ensol has taken a different approach, choosing to develop polymer/sulfide-type electrolytes. According to

an April 14, 2022 article in Business Korea ([here](#)), a company official at a seminar in Seoul on April 13 said that LG Ensol plans to set up an R&D base in Germany sometime this year, in order to accelerate the development of SSB. The company apparently aims to commercialize polymer-based SSB by 2026, and sulfide-based SSB (which requires more advanced technology compared to polymer-based batteries) by 2030.

Hyundai Motors announced its own project to develop solid state batteries in its first quarter conference call held in April 2021, indicating that they aim to produce a prototype in 2025 and to begin mass production in 2030. Interestingly, while Hyundai Motors is expanding their R&D structures for SSB, they also seem to have partnered with Factorial Energy based in the US, who are already developing their own solid-state tech.

It is difficult to predict at present which companies might become the leaders in the global SSB market, given that the technology is still in flux and we are still years away from commercial production. However, given that the wars over the lithium-ion battery market seem to have largely been settled, and that battery companies all over the world are investing heavily in research and development of SSBs, the competition to dominate the SSB market is sure to be fierce.

KIPO Adopts New ST.26 Standards for Sequence Listings in Patent Applications

By Ji Eun SHIN and Hyeongsu PARK

The Korean Intellectual Property Office (KIPO), along with other intellectual property offices all over the world, adopted the new ST.26 standard for nucleotide and amino acid sequence listings, which went into effect worldwide on Friday, July 1, 2022. The ST.26 (XML) is a new standard for the presentation of nucleotide and amino acid sequence listings in patent applications proposed by the World Intellectual Property Organization (WIPO).

The previous ST.25 (TXT) standard had some deficiencies, which prompted WIPO to adopt the new standard. For example, because the ST.25 format was not compliant with that of internationally recognized nucleotide sequence databases, data could have been lost when a nucleotide sequence in the ST.25 format was entered into public databases (e.g., NCBI). In addition, since the ST.25 rules were not clear, intellectual property offices worldwide interpreted and enforced the rules differently. Further, sequence types that are common today (e.g., nucleotide analogs, D-amino acids, branched sequences) are not covered by ST.25 rules. Finally, data in the ST.25 format are not structured, making the format difficult to use for automated validation and data exchange.

As a result, at the fifth session of the Committee on WIPO Standards (CWS) held in 2017, Member States of the WIPO agreed to adopt WIPO Standard ST.26 for all national, regional and international-level patent applications which contain sequence listings. In view of WIPO's adoption of ST.26 as the standard for presenting nucleotide and amino acid sequence listings, KIPO has also adopted the ST.26 (XML) system.

KIPO announced that the following patent applications should be filed under the ST.26 format:

- Patent / utility model applications filed on or after July 1, 2022.
- Applications claiming Paris Convention priority that are filed on or after July 1, 2022 (not based on the priority date): as a result, the required formats may be different between the priority application and the subsequent application.
- PCT applications filed on or after July 1, 2022 and their national phase applications (not based on national phase entry date): thus, for KR national phase applications, the ST.26 format is required only for the cases where international filing date is on or after July 1, 2022.

- Divisional applications, converted applications, split-off applications, or applications by legitimate right-holders, whose parent or original application is filed on or after July 1, 2022 (not based on the filing date of the follow-on application): for example, for a divisional application filed after July 1, 2022 whose parent application was filed before July 1, 2022, a sequence listing may be submitted in ST.25 format.

Under the ST.26 system, the sequence listing should only be electronically submitted (i.e., not on paper) and should be submitted in XML format, instead of TXT format. Also, unlike ST.25, the ST.26 system requires the following: (i) D-amino acid, (ii) Linear portions of branched sequences, and (iii) nucleotide analogs, if applicable. For annotation of sequences, the ST.26 system requires not only feature keys (i.e., description of one or more residues of a sequence identified by location) but also qualifiers (i.e., further description of features). Lastly, the ST.26 system does not allow the inclusion of sequences having fewer than 10 specifically defined nucleotides, or fewer than four (4) specifically defined amino acids. The sequence listings may recite the relevant sequence identification numbers (i.e., an "intentionally skipped sequence" or an empty/placeholder sequence) for short sequences, while the details should be described in the specification.

For applications that do not comply with the ST.26 system, KIPO announced that it will not provide any grace period for submitting the sequence listing under the ST.26 format. If a patent application is filed under the non-compliant format (e.g., ST.25 format), the applicant may substitute with the compliant ST.26 format voluntarily or in response to an office action issued by KIPO. However, since the new format is intended to include more details of the sequence compared to the old format, a new matter issue may arise, unless those details are sufficiently supported by the originally-filed specification. Thus, we recommend paying extra attention to the format of the sequence listing and making sure that the right format is filed. KIPO will be establishing a system to ensure that the sequence listings are submitted in the proper format, depending on the application type and the filing date.

Proposal to Designate Additional National Core Technologies and Set Sunset Periods for NCT Designations

By Young Sub CHUNG, Min Seo HWANG, Clare Ryeojin PARK and Mikyung (MK) CHOE

On July 26, 2022, the Ministry of Trade, Industry and Energy (MOTIE) announced a proposed amendment to the Public Notification on the Designation of National Core Technology ("Proposed Amendment"), with two significant proposed changes: (i) several modifications and additions to the list of national core technologies ("NCTs"); and (ii) a proposal to set a sunset period for technologies designated as NCTs after which the technology can be removed from the list of NCTs, or re-designated as an NCT. The relevant details are set forth below.

1. Modifications to the NCT list

Under the Proposed Amendment, two hydrogen-related technologies are added to the list of NCTs, in consideration of the technologies' economic value as well as recent changes to the technical environment, and one technology in the automobile field has been modified, as follows:

Field	Newly designated NCTs
Hydrogen (2)	Design, process and manufacturing technologies for fuel cells for construction/industrial machines of 10kW or greater that are capable of continuously operating for 4 hours or more at a current density of 1.0A/cm ² or greater
	Design, manufacturing, diagnosis and controlling technologies for fixed-type fuel cells with a power generation efficiency of 35% or greater and a durability of 40,000 hours or longer

Field	Before amendment	After amendment
Automobile • Railway (1)	Design and manufacturing technologies for hybrid and electric power based vehicle (xEV) systems (<u>limited to control units, battery management systems, and regenerative braking systems</u>)	Design and manufacturing technologies for hybrid and electric power based vehicle (xEV) systems (<u>limited to control units, battery management systems, regenerative braking systems, electric drive systems (motor, inverter) and HVAC (heating, ventilation, and air conditioning) systems</u>)

Under the current Act on Prevention of Divulgence and Protection of Industrial Technology ("ITA"), a company in possession of an NCT ("Subject Institution") is required to take certain protective

measures relating to the NCT, such as designation of a protection zone and appointment of personnel to manage NCTs (Article 10 of the ITA). Where a Subject Institution intends to export an NCT, it must first file a report to or seek approval from MOTIE, depending on the circumstances (Article 11 of the ITA). In addition, where a foreigner intends to acquire or merge with a Subject Institution, the Subject Institution must first obtain approval from or file a report with MOTIE (Article 11-2 of the ITA).

2. Designation of a sunset period for each NCT

The Proposed Amendment also sets a sunset period of up to five years for each NCT, and provides that when designating a new NCT, the MOTIE and related central administrative agencies may decide an applicable sunset period of up to five years. Once the corresponding sunset period expires, the NCT may be removed from the list or re-designated.

KIPO's New Guidelines for Examining Trademark Applications for Virtual Goods

By Won Joong KIM, Beth JANG and Angela KIM

Transactions involving virtual goods and trademark applications for virtual goods are on the rise. Consequently, KIPO has adopted special guidelines for examining virtual goods (the "Virtual Goods Examination Guidelines") that went into effect on July 14, 2022. Notably, the Virtual Goods Examination Guidelines indicate that virtual goods are presumptively different from real world goods and virtual goods previously described as downloadable image files. This means that KIPO will not automatically reject applications for virtual goods based on trademarks for real world goods or trademarks for downloadable image files. Thus, we recommend filing trademarks for the virtual goods corresponding to your real world goods/services as soon as possible before your mark is registered by a third party.

The key points of the Virtual Goods Examination Guidelines are as follows:

1. Virtual Goods Description Requirements

The broad description of "virtual goods" by itself will not be accepted. Instead, the product type must be specified, for example, "downloadable virtual apparel," "virtual shoes," etc. However, the term "virtual goods" may be used in a descriptive manner to help describe the relevant goods/services, for example, "virtual world computer program in which virtual goods are recorded."

2. Classification of Virtual Goods

Virtual goods generally belong to International Classification 9 (which includes downloadable virtual goods). Thus, KIPO added new Similarity Codes specifically for virtual goods as a way to help distinguish and examine virtual goods (Similarity Codes are classifications used by KIPO to subdivide categories of broadly-similar goods and services, such that goods designated under the same Similarity Code are generally found to be similar for trademark registration purposes). More specifically, the Similarity Codes for virtual goods differ based on their corresponding real world goods.

The below table provides examples of Similarity Codes for virtual goods:

Examples of Virtual Goods	Classification	Similarity Code
Virtual Shoes	Class 9	G520727
Virtual Apparel	Class 9	G520745, G520743
Virtual Cars	Class 9	G520737

For services utilizing a virtual environment, the Similarity Code will be based on the purpose of the service. The below table provides examples of Similarity Codes for virtual services:

Examples of Virtual Goods	Classification	Similarity Code
Furniture sales agency using the Metaverse	Class 35	S2026
Advertising agency in a virtual world	Class 35	S0101
Music performance business using a virtual environment	Class 41	S110101

3. Determination of Similarity

The Virtual Goods Guidelines provide that when comparing virtual goods, they will be presumed similar if the corresponding real-world products are similar. However, virtual goods falling within the same Similarity Code may still be found dissimilar depending on the characteristics of the goods.

Notably, trademarks for virtual goods will be presumed dissimilar to their real world counterpart goods until a court precedent establishes otherwise. However, an application for a virtual product may be rejected based on a real world good, if the mark is a well-known or famous mark. Additionally, virtual goods and services will be presumed dissimilar to prior registrations for virtual goods based on a "downloadable image file" description. Examples showing how virtual goods will be compared are provided below:

	Compared Goods	Similarity	Remarks
Between Virtual Goods	Virtual Pants vs. Virtual Apparel	Similar	Since real pants and apparel are similar, corresponding virtual products are also presumed similar.
	Virtual Safety Helmet vs. Virtual Apparel	Dissimilar	Since real safety helmets and apparel are dissimilar, corresponding virtual goods are also presumed dissimilar.
Between Virtual Goods and Downloadable Image Files	Virtual Goods vs. Downloadable Image File Containing Virtual Goods	Dissimilar	Virtual goods and downloadable image files are presumed dissimilar even if the image file contains virtual goods.
Between Virtual Goods and Real Goods	Virtual Shoes vs. Shoes	Dissimilar	Virtual goods and real-world goods are presumed dissimilar.

As noted above, since virtual goods are presumptively dissimilar to their counterpart real world goods and downloadable image files, we encourage you to apply for your virtual goods trademarks as soon as possible.

NEWS

Kim & Chang Ranked Again as a Top Law Firm in Korea – MIP IP Stars 2022

Kim & Chang has been recognized as a top law firm in Korea in every category covered – patent prosecution, patent contentious, trademark prosecution, trademark contentious, copyright & related rights and IP transactions – by the Managing Intellectual Property (MIP) IP Stars 2022. This marks the 20th consecutive year that Kim & Chang has received this honor. Further, Kim & Chang is once again the only law firm in Korea that ranked as a Tier 1 firm for the trademark prosecution category.

In addition, 11 Kim & Chang professionals have been recognized as "IP Stars" and "Notable Practitioners." Duck-Soon Chang, Sang-Wook Han, Jay J. Kim, Young Kim, Man-Gi Paik, and Jay (Young-June) Yang have been recognized as "Patent Stars," Sung-Nam Kim, Ann Nam-Yeon Kwon, and Jay (Young-June) Yang as "Trademark Stars," and Eun Jeong Cho, Yunki Lee, and Chun Y. Yang as "Notable Practitioners."

MIP, part of the *Euromoney Legal Media Group*, is a leading source of news and analysis on IP developments worldwide. *MIP* identifies leading law firms and individuals based on extensive research and in-depth interviews with IP practitioners and clients worldwide.

Kim & Chang Named in IAM Patent 1000: The World's Leading Patent Professionals 2022

Kim & Chang has been ranked in the Gold (highest) band for litigation and prosecution, and also ranked for transactions in Korea in the eleventh edition of the Intellectual Asset Management (IAM) Patent 1000: The World's Leading Patent Professionals.

In addition, 13 Kim & Chang professionals – Stephen T. Bang, Duck-Soon Chang, In Hwan Kim, Jay J. Kim, Young Kim, Inchan Andrew Kwon, Yu-Seog Won, Chun Y. Yang, Jay (Young-June) Yang and Youngsun You for litigation, Sang Young Lee, Sean (Seunghun) Lee and Man-Gi Paik for prosecution – have been identified as recommended individuals in Korea.

The IAM Patent 1000 is a guide to top patent practitioners in key jurisdictions around the globe. Their rankings are based on in-depth research and interviews with numerous attorneys at law, patent attorneys and in-house counsel.

APAA Webinar on "When AI Invents"

On July 29, 2022, Cyril Chan (Foreign Counsel and U.S. Patent Attorney), a member of Kim & Chang's Intellectual Property Practice, participated as one of the panel speakers in the webinar series organized by the Asian Patent Attorneys Association (APAA). Under the topic of "When AI Invents," Mr. Chan shared his insights on patent law issues in connection with artificial intelligence (AI) such as ownership and inventorship issues and the impact of AI on the "person of ordinary skill in the art" standard.

This webinar, which was opened to all APAA Members in 21 countries, was hosted to bring together seasoned experts to discuss key trends and issues covering IP rights. With esteemed speakers and IP practitioners from various jurisdictions in Asia, the webinar served as a premier platform for dialogue, cooperation and networking.

Founded in 1969, APAA is a non-governmental organization comprised of more than 2,500 members from 21 countries dedicated to promoting and enhancing IP protection in the Asian region including Australia and New Zealand.

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INTELLECTUAL PROPERTY

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