SHIGA
INTERNATIONAL
PATENT
OFFICE
JAPAN

SHIGA IP NEWS

Volume 60 April 2021

IN THIS ISSUE

Former Softbank Employee Arrested for Leaking Trade Secrets

Japanese IT giant, Softbank Corp., has announced that one of their former employees, who has joined Rakuten Mobile, Inc., a competitor of SoftBank, has been arrested under suspicion of Unfair Competition Prevention Law violations. Rakuten Mobile, which provides mobile communications services in Japan, is a subsidiary of Rakuten, another IT giant.

According to the SoftBank announcement, it was discovered that the former employee illicitly took trade secrets containing information regarding their network technology during a period of time between submitting his notice of resignation and his actual resignation, despite a confidentiality agreement between the employee and the company. SoftBank has alleged that the leaked confidential information relates to base-station equipment for 4G and 5G networks and technology concerning fixed-line communications networks between base-stations and between each base-station and switching equipment. SoftBank has also announced that they will soon file a civil case against Rakuten Mobile demanding the suspension of use and destruction of all matters pertaining to the trade secrets.

On the other hand, Rakuten Mobile released a statement asserting that the use of the information in question for their business has not been confirmed and that the leaked information does not contain information relating to 5G technology.

Under the Unfair Competition Prevention Law in Japan, trade secrets must meet the three requirements listed below. They must be:

1. Controlled as a secret (confidentiality)
2. Useful information in terms of business or technology (usability)
3. Unknown to the public (not publicized)

The illicit obtainment of trade secrets which meet the above requirements and the use or disclosure thereof to third parties with the intent of making a profit illegally are prohibited.

Therefore, if Rakuten Mobile's assertion is confirmed to be true, the aforementioned case may not be determined to be a violation of the Unfair Competition Prevention Law, while it may be still determined to be a violation of the confidentiality agreement by the former employee. However, if the information leaked by the former employee is determined to be a trade secret as SoftBank has claimed, and at the same time, if Rakuten Mobile has used the information for their business, not only the former employee, but also Rakuten Mobile are likely to be charged with violation of the Unfair Competition Prevention Law.

In Japan, the punishment for revealing trade secrets was consolidated and penalties were reinforced after the revision of the Unfair Competition Prevention Law came into effect in 2015. Please refer to SHIGA IP News, Vol. 41, which features the revision, at the following link:

<https://www.shigapatent.com/wp-content/uploads/2015/09/SHIGA-IP-NEWS-vol.41.pdf>

Interior/Exterior Design of Buildings to be Protected as Designs

The revised Design Law allows the interior/exterior design of buildings to be protected as designs. Since the enactment of the Design Law in 2020, creative architectural designs which help improve corporate brand value have been registered as designs at the Japanese Patent Office (JPO). A commercial building of UNIQLO (Design Reg. No. 1671773) and a station building (Design Reg. No. 1671774) are some examples that have been registered as designs. Under the newly revised law, a wide range of architectural designs, from shops and buildings to factories, depositories, hotels, schools, museums, stadiums, and commercial and residential complexes, can be registered as designs. The number of design registrations, which would serve as symbols for corporate brands, will continue to grow in the years to come.

Conceptual images of the below design registrations are taken from a Ministry of Economy, Trade and Industry (METI) press release. [Reference site (Japanese only): *https://www.meti.go.jp/press/2020/11/20201102003/20201102003.html*]

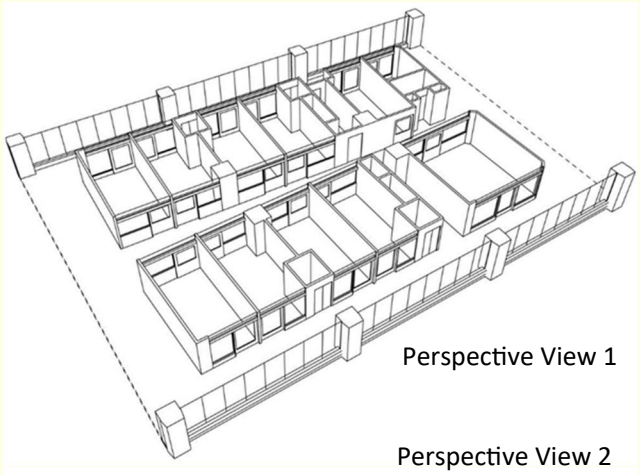
Commercial Building of UNIQLO

Ueno Station Complex of JR East

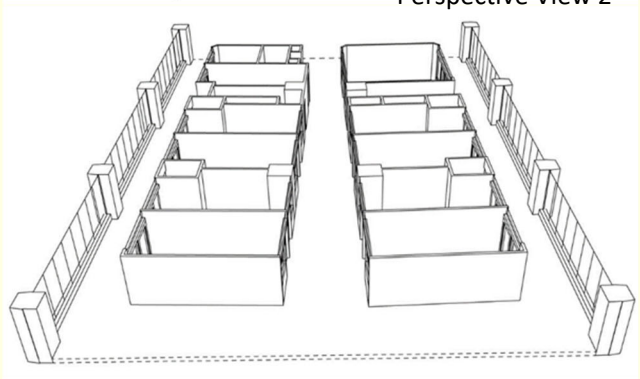
Mitsubishi Jisho Sekkei Inc., a Japanese architectural design firm, has announced that the company's design of a hospital ward is the first registered interior architectural design for a "hospital" after the revised Design Law was enacted.

Article of the Design: Hospital
Registrant: Mitsubishi Jisho Sekkei, Inc.
Japanese Design Registration No.: 1672637

Registration Date: October 27, 2020



Perspective View 1



Perspective View 2

According to Mitsubishi Jisho, it was common for hospitals to arrange patient rooms to face the outside of the building in order to satisfy the standards of lighting required by the Building Standard Law. Therefore, the floor planning of hospitals was highly likely to be made uniform with one single design. In contrast, the present design meets the standards of lighting by applying "veranda lighting". This is made possible by the provision of corridors outside the patient rooms. In addition, the nurses station is located in the center of the patient rooms and adjacent to all patient rooms. The design creates an environment where nursing staff and patients directly communicate with each other and also consolidates the movements of people because visitors use outside corridors when they visit patients. Mitsubishi Jisho believes that the present design has unique features in its lighting plan and floor plan and has been successful in protecting the interior design under the revised Design Law.

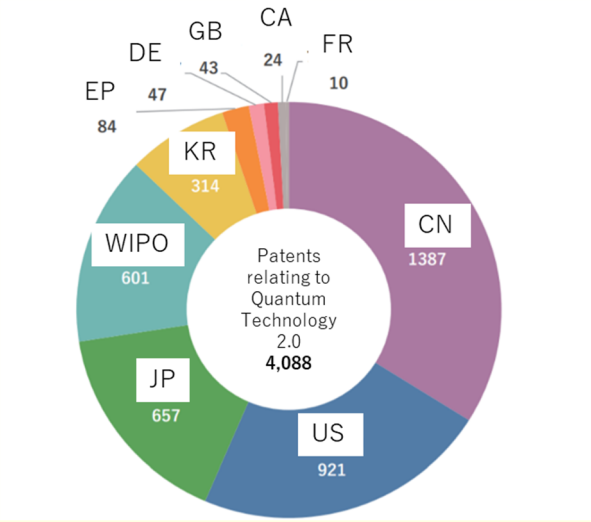
Conceptual Image of the Hospital in the above Design Registration
[Reference (Japanese only): https://www.mj-sekkei.com/files/news_detail/file/625/file.pdf]

Recent Trends in Quantum Cryptography - Toshiba Venturing into the Field

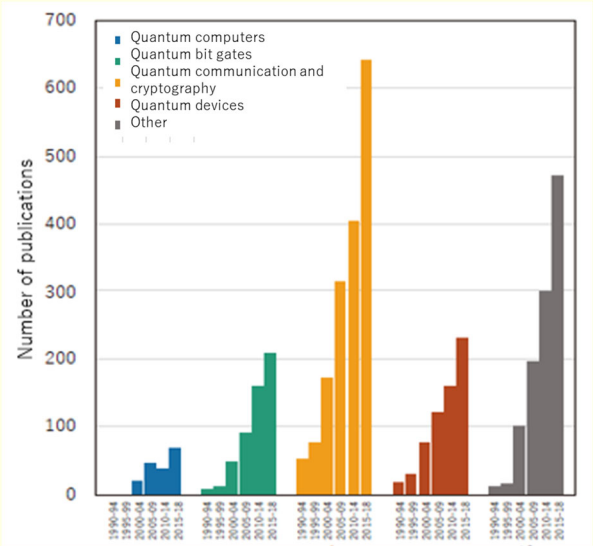
Toshiba Corporation, a major Japanese computer and electronics manufacturer, has announced that it will be a forerunner in Japan when it launches a new technology called "quantum cryptography communication". Quantum cryptography is a next-generation cryptography technology that it is theoretically impossible for a third party to decrypt. It is a type of communication technology that applies the principles of quantum mechanics, and transmits and receives "keys" on photons (light particles) in order to restore encrypted data. If an unauthorized third party attempts to skim the data, the state of each photon is changed. As such, quantum cryptography enables the prevention of information leaks. Toshiba plans to commercialize this quantum cryptography communication in Japan, Europe and the United States in the next fiscal year. In Japan, the company has already received an order from the National Institute of Information and Communications Technology (NICT) for a security measure for communication networks which will be the first commercialization of the technology in Japan. In addition, the company is aiming to attain 25% of the global market share by 2035 in collaboration with companies in the UK and the U.S.

Toshiba holds the world's largest number of patents in this field and is a leader in research and development. On the other hand, China has already begun practical use of the technology, and there are also trends in developing large-scale networks in South Korea and Germany. The competition for development is becoming fierce around the world. For now, cryptography is an essential tool in social infrastructures, ranging from handling confidential data in public and private sectors, to communicating securely through e-mail and online shopping at a personal level. However, the current technical level of cryptography is highly likely to fall behind the high-performance of "quantum computers" that could be developed in ten to twenty years. Therefore, the technology of quantum cryptography is attracting much attention as a "shield" for data. The market value of quantum cryptography is estimated to be worth more than 2 trillion JPY in fiscal year 2035.

Moreover, statistics of patent filings show recent technical trends in detail. According to "Quantum technology 2.0 from the world patent map" by the Japan Science and Technology Agency (JST), it is obvious that the number of patent filings related to quantum technology has drastically increased since 2010. The report was compiled in bid to understand and analyze research trends of quantum technology 2.0 in major countries from published patent information. The JST's original search formula was used to search gazettes in major countries published after 1990 and 4,088 patents related to quantum technology were extracted. The breakdown by country in the pie chart shows that China holds more than a quarter of the related patents, and that the number of patents issued in China has been increasing especially since 2008.

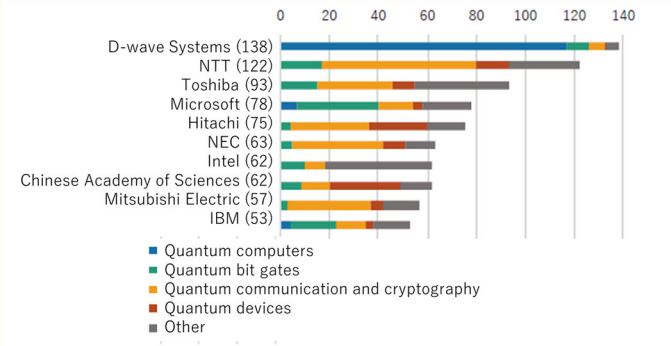


The five-year trend of the number of patents by technology is shown below.



As shown in the bar graph, the growth of quantum communication and quantum cryptography technologies is remarkable among all quantum technologies. The category contains 1,653 patents, the core of which are in the areas of "quantum cryptographic keys", "quantum key delivery methods and devices", "superconducting quantum interference devices and communication and calculations", "quantum communication control" and "routing methods for quantum communication networks".

The following graph shows the top ten applicants in the field of general quantum technology.



Please keep in mind that Toshiba is not the top filer in this ranking due to the ranking using a different target period and extraction method from the one mentioned in the first part of this article. In this ranking, NTT takes second place. Since NTT is one of the largest Japanese telecommunication companies, it is understandable that the company filed a lot of patent applications for communication and cryptography technologies (marked in yellow). However, Toshiba, Hitachi, NEC and Mitsubishi Electric, which are renowned general electronics device companies, also dominate a higher ratio of communication and cryptography technologies than devices.

The 2020's would be a new era of quantum cryptography. Japan is now accelerating R&D of its technology along with AI and biotechnology. In order to take a lead in the global market, further investment on R&D and patent filings will be necessary. We will continue to keep an eye on IP trends in this technical field.

[*Reference (Japanese only): https://www.jst.go.jp/crds/pdf/2018/RR/CRDS-FY2018-RR-04.pdf*]

Abolishment of Handwritten-Signature Requirements for Procedures at the JPO

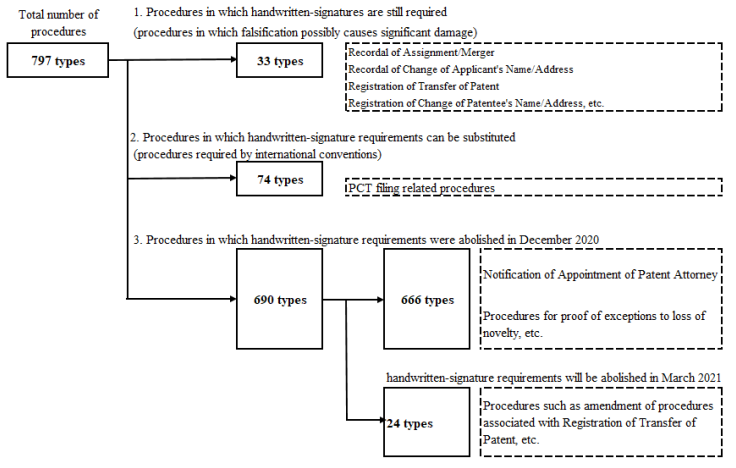
The Japan Patent Office (JPO), under the Ministry of Economy, Trade and Industry (METI), has decided to entirely shift from paper-based to digital-based submission. Accordingly, a ministerial ordinance came into effect on December 28, 2020, and conventional handwritten-signature requirements are now abolished for hundreds of procedures at the JPO.

According to the JPO, there are about 800 different types of procedures for patents, utility models, trademarks, and designs, and the number of procedures annually filed is approximately 3.1 million. Currently, the rate of new electronic filings has reached 94% on average. With regard to new electronic filings, advance registration of both User ID number and digital certificate enables strict personal authentication in order to prevent spoofing and information falsification.

In the meantime, handwritten-signature requirements will remain valid in some particular procedures where falsification could possibly cause significant damage.

However, the JPO has been studying some alternative means in order to ease users' burdens.

An overall picture of the revision is as follows .



With this change, procedures are expected to be more efficient and quicker to be processed.