

## Preparations for a Future of IoT, AI and 3D Printing

### I. First Steps: The IoT Patent Classification System

In November 2016, the Japan Patent Office (JPO) announced the formation of a new patent classification system designed for IoT. At present, IoT is an amorphous concept and the direction(s) in which it will radiate in the future cannot be accurately predicted. The JPO deemed that the traditional IPC, F1, and CPC classification systems would be wholly insufficient to categorize IoT, as IoT will more than likely bridge numerous fields as it develops.

In order to more accurately classify IoT inventions, the JPO christened a new FACET indication with the somewhat unfortunate 3-letter classification, ZIT. It was also announced that this new classification category would be greatly expanded and sub-divided in the future as necessitated by the advent of new technologies.

ZIT is the world's first classification system that will allow for a proper search of patent applications related to IoT inventions using terms such as "for health care" or "for communication" to span several fields with the same general search criteria. (Detailed information in both Japanese and English regarding the new ZIT classification may be found on the Ministry of Economy, Trade, and Industry (METI) website [http://www.meti.go.jp/english/press/2016/1114\\_01.html](http://www.meti.go.jp/english/press/2016/1114_01.html))

### II. Second Steps

METI released a report in April 2017 summarizing the initial steps that both the Japanese government and industry should consider taking in order to better prepare for the new industrial revolutions that will undoubtedly be brought about by developments in IoT, AI and 3D printing.

The development of new data structures, which are technological operating systems-in-development and/or systems which have yet to be imagined will be the tools driving advances in IoT, AI and 3D printing in the future (and vice versa) and will require intellectual property protection, especially when a newly developed data structure becomes the new standard through which a preponderance of new technologies are operated.

The manner in which Standard Essential Patents (SEPs) relating to these burgeoning fields are managed will clearly have to evolve to include new processes and laws governing how licenses are issued and how disputes arising therefrom are resolved. The desire to move away from expensive and time-consuming litigation will hopefully foster changes in how infringement cases are handled. Potentially, governments could set limits on licensing fees associated with SEPs which would limit the malignant effect that non-practicing entities (i.e., patent trolls) have on the progress of technological advancement. This expansion of FRAND would benefit Small and Medium-sized Enterprises (SMEs) who cannot afford expensive lawsuits, but desire easier access to SEPs. Additionally, private arbitration firms may be used as a cheaper solution (Alternative Dispute Resolution (ADR)) to settle licensing fee disputes. This would be of particular interest to SMEs and start-ups which generally, do not have the financial resources to enter protracted litigation with larger firms who have considerably deeper pockets. Currently, the Japan Intellectual Property Arbitration Center exists for such cases and while their role is anticipated to expand in the future, discussions into implementing an ADR system have been halted at least for the meantime, and will not be included in the guidelines regarding license negotiations for SEPs that will be submitted to the Japanese Parliament for approval in 2018.

The METI report also postulated that given the eventual growth of IoT, AI and 3D printing, different industries will

eventually have to cooperate with each other in order to create and adopt new standards, business practices and create further business opportunities in the future. This will produce one substantially difficult problem for Japanese industry to overcome, as traditionally, there have been few incentives which encourage and foster cooperation between seemingly disparate industries, and cooperation among various industries and the public in Japan has only recently begun to be addressed. Clearly, any company which clings to the old business models will find it difficult to adapt to a new global system that operates based on the expansion of integrated services and rapid interconnectivity for the sharing of data in order to respond to the demands of customers faster, more economically, and with less waste of resources.

The promotion of cooperation and collaboration between larger established companies and SMEs and/or start-ups must also be encouraged, as such cooperation and collaboration will undoubtedly lead to new research and development methods which allow for the faster implementation and the promotion of new business models utilizing the new technology and the promotion of international standardization.

### III. Step Three: New JPO Guidelines

On September 29, 2017, the Japanese government held meetings with several Japanese business federations which represent IoT-related industries for the purpose of discussing the future of SEP licensing. The main topics covered in these meetings included

- 1) What actions constitute appropriate negotiation practices, and
- 2) What constitutes a reasonable royalty and/or licensing fee when licensing an SEP.

In late January 2018, the JPO announced that a series of guidelines would be published in Spring 2018. These guidelines would focus on how licensing in the newly developing field of IoT

would be handled at least in the short-term with regard to SEPs. The guidelines will be designed to assist companies regarding remedies in the case that licensing negotiations were not being conducted in good faith and efficiently based on the duration of the negotiations, how each party has behaved in prior negotiations, etc.

The guidelines will be designed to assist companies regarding reasonable royalty payments and will attempt to provide some examples of the current market values and potential costs associated with the licensing of the technology protected by an SEP. These royalty rates and/or licensing fees will also be designed based on the degree to which the invention, as a standard, contributes to sales and to industry and its development, as well as the cumulative value of the SEP to the applicant, manufacturers, suppliers, etc., the cumulative royalty rates, the patent portfolio strength including other SEPs held by the applicant, and other aspects.

In addition, the guidelines will request that the owners of the SEP and the companies or manufacturers to which the SEPs are being licensed have a complete understanding of the manner in which the licensed SEP technology is to be used, including restrictions on the use thereof. Lastly, the guidelines will require the owners of the SEP to provide concrete explanations as to how they arrived at the royalty rate and/or licensing fees that they wish to receive in exchange for licensing their SEP technology to another company or manufacturer.

The JPO realizes that as IoT, AI and 3D printing are rapidly emerging technologies, the guidelines must also evolve in accordance with future advances in these fields.

Japan's manufacturing infrastructure and high speed internet should be and undoubtedly will be used to improve R&D; reduce the costs associated with the production and delivery of

products and services; increase the variety of products and services in accordance with customer demands and as a reaction to evolving markets; bundle products and services, and ultimately, reduce both waste and the time required for a product to get from the drawing board to the marketplace. With the plethora of data which will be provided by the new interconnectivity, decisions and the delivery of goods and services to customers will be performed more rapidly. While Japan is technologically ready for the rapid advances that will be brought about by IoT, AI and 3D printing, many aspects regarding how these advances will be handled in terms of personal privacy, intellectual property, licensing, and international standardization have only begun to be addressed.