

3G Patent Platform

The third-generation (3G) mobile communication system, referred to as International Mobile Telecommunications-2000 (IMT-2000) and developed by the International Telecommunication Union (ITU), was commercially launched in Japan in May 2001, before any other country in the world. The standard specifications comprising IMT-2000 adopted technologies proposed by many organizations, many of which have been patented by companies that developed the constituent technologies. From a commercial point of view, studies have been conducted the framework for on licensing these patents efficiently.

This article reviews the current state of the 3G Patent Platform, a organization to rearize the comprehensive licensing of IMT-2000 patents.

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1. Introduction

The 3rd-Generation (3G) mobile communication system referred to as International Mobile Telecommunications-2000 (IMT-2000) is a standard developed by the International Telecommunication Union (ITU), consisting of five radio interface specifications, two core network specifications and a single network-to-network interface. These standard specifications are adopted from technologies proposed by many organizations and their construction technologies are patent applied and registered by companies that developed them.

While standardization activity is aimed at broadening the use of certain technical specifications to the greatest degree possible, a patent has an aspect that severely restricts a third party from using it, for being an exclusive, monopolistic right. Therefore, it is necessary for industry to strike a balance between the two.

As shown in **Figure 1**, if the amount of the cumulative royalty (the payment for patent license) is substantial because of the large number of licensors (patent holders

who grant patent licenses to third parties), it will be very difficult to provide services and products to users at a reasonable price, due to increased product costs incurred by the licensee (the party who obtained a patent license from the licensor) and heavier investment required for communication carriers involved in sales and facility construction of the product. If the sales volume of the product decreases, the aggregate amount of royalties collectable by the licensor from the product will fall. The issue of maintaining the amount of royalty at an acceptable level to licensees is important not only for manufacturers and communication carriers but also for patent licensors.

In January 2003, 3G Patents Limited (hereinafter referred to as "3G Patents") was commercially launched as a management company of the 3G Patent Platform, an approach for efficiently evaluating, certifying and licensing IMT-2000 Essential Patents*. This article reviews the current state of the 3G Patent Platform (hereinafter referred to as "Platform") [1], [2], [3].

2. Platform Formation Background

In the mobile communication sector, the need to deal with Essential Patents for standard specifications has existed since the days of the second-generation (2G) digital mobile communication systems. In Japan, for example, most companies holding Essential Patents had declared to grant royalty-free licenses to an unrestricted number of applicants if they were adopted in standard specifications towards the communications publicity; thus, the problem

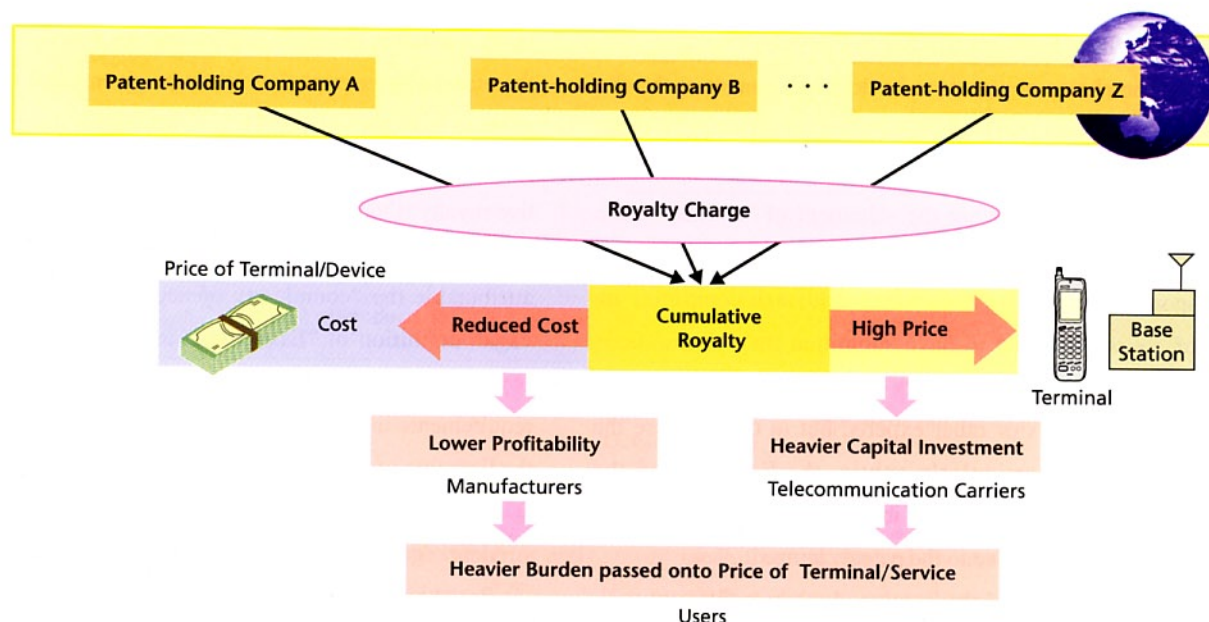


Figure 1 IMT-2000 Patent Problems

never surfaced to the same extent. However, some companies began to impose royalties as a condition in the standardization process, towards the worldwide trend to attach greater importance to intellectual property.

Efforts to solve the patent problem in 3G mobile communication system date back to 1998. In January 1998, at the European Telecommunications Standards Institute (ETSI) SMG 24 bis meeting, an agreement has reached on adopting Wideband Code Division Multiple Access (W-CDMA) and Time Division Code Division Multiple Access (TD-CDMA) for UMTS Terrestrial Radio Access (UTRA) in the Universal Mobile Telecommunication System (UMTS). At the same time, 29 companies confirmed to establish guidelines for handling the Essential Patents for the UTRA specifications, in order to keep manufacturing costs at a reasonable level.

In February 1998, the UMTS Intellectual Property Association (UIPA) was formed, and its UMTS Intellectual Property Rights (IPR) Working Group was commissioned to study the solutions to intellectual property problems. In October 1998, the Working Group released an interim report titled "Third Generation Mobile: The Way forward for IPR," which considered several licensing schemes based on a 'pool' format and a 'forum' format, other than leaving the problem to negotiation between companies based on ETSI's IPR policies. Ultimately, the best features of a 'pool' and a 'forum' were combined leading to the definition of the 3G Patent Platform

idea.

In January 1999, a study was ultimately launched regarding the basic framework and functional definition of the 3G Patent Platform proposed by the Working Group and the 3G Patent Platform was approved by the UIPA General Assembly on June 30, 1999. In October 1999, the 3G Patent Platform Partnership (3G3P) was formed as a successor to UIPA with the task of implementing the Platform specification. Since then, 3G3P has held a series of discussions on the concrete organizational structure and functions of an efficient license management platform and eventually issued a revised Platform specification [3].

3. Patent Problems relating to IMT-2000 Standard Specifications

This section provides some background on the nature of the problems concerning standard specifications and patents.

For the IMT-2000 standards, companies are required to declare the licensing terms and conditions relevant to their own Essential Patents, before they are to be adopted in standard specifications by ITU, ETSI, Association of Radio Industries and Businesses (ARIB), Telecommunication Technology Committee (TTC) and other standardization bodies.

As an example, **Figure 2** shows the percentage of patent holdings declared to ARIB regarding W-CDMA and cdma2000. In recent years, most companies that hold technologies adopted in standard specifications declare that they "shall grant a license

under (fair,) reasonable and non-discriminatory terms and conditions to licensees (RAND or FRAND)”

The choice of patents to be declared is made at the discretion of each company, and is not certified by a third-party organization. Evaluation by an expert is required, in order to check whether the statement of “claims” in the patent description really matches the content of the corresponding standard specifications. Although companies are of course believed to have submitted their declarations after undergoing preliminary evaluation by their contract patent attorneys or other experts, but in cases where the judgment is particularly subtle, the licensor and the licensee may have different interpretations of the standard specifications relative to the patent claims.

The licensor and the licensee also take a different position with respect to “reasonable terms and conditions.” Particularly, negotiations to settle on the royalty are extremely time-consuming. Furthermore, even if the offered royalty seems to be reasonable for one patent, when there are many patent holders, the cumulative royalty might be cost-ineffective and the company might be forced to abandon its plan to enter the market. Intrinsically, IMT-2000 is a standard specification adopted by an international

organization based on contributions from many government agencies, research organizations and companies; therefore, many companies should be given equal opportunities to enter the market. There is a problem if some companies cannot enter the market simply because the cumulative royalty is too expensive.

As described above, the patent problem is essentially attributable the “complexity of negotiations” due to the vague definition of “Essential Patents” and “reasonable royalty.” It is indispensable to satisfy the following requirements in order to solve this problem and facilitate the licensing of Essential Patents.

- ① Essential Patents must be identified by a fair, independent organization;
- ② Royalties must be set within reasonable rates to prevent barriers to market entry; and
- ③ Negotiation rules must be clarified to ensure that Essential Patents are definitely licensed in a short period of time.

4. Framework of Platform

The Platform is a framework for evaluating and certifying Essential Patents for member licensors, and for assuring the licensing of Essential Patents to licensees at a reasonable royalty in a short period of time. This enables licensees to launch business at low cost, and licensors can expect a stable royalty income. The Platform obliges members to conclude a framework agreement including the terms and conditions set forth below.

- ① Members shall be bound by the application of the Standard Royalty Rate (SRR) and the Maximum Cumulative Royalty Rate (MCR) set forth in the Standard License Agreement (SLA).
- ② Members shall license Essential Patents within their holdings to licensees based on the SLA. However, a bilateral license agreement other than the SLA may voluntarily be concluded if so desired, but in this case an Interim License Agreement (ILA) basically consisting of the same terms and conditions as the SLA shall be concluded until the bilateral license agreement becomes effective.
- ③ All Essential Patents of the IMT-2000 specification shall be submitted to the Platform.

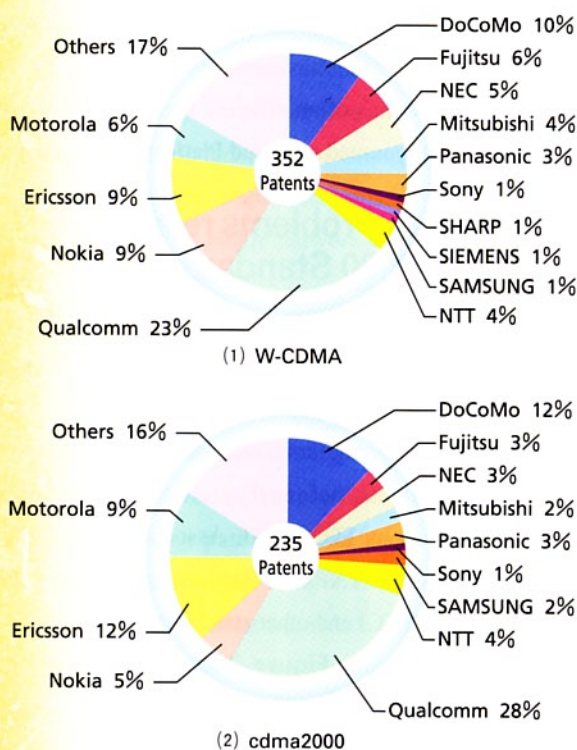


Figure 2 Number of Patents declared to ARIB and TTC

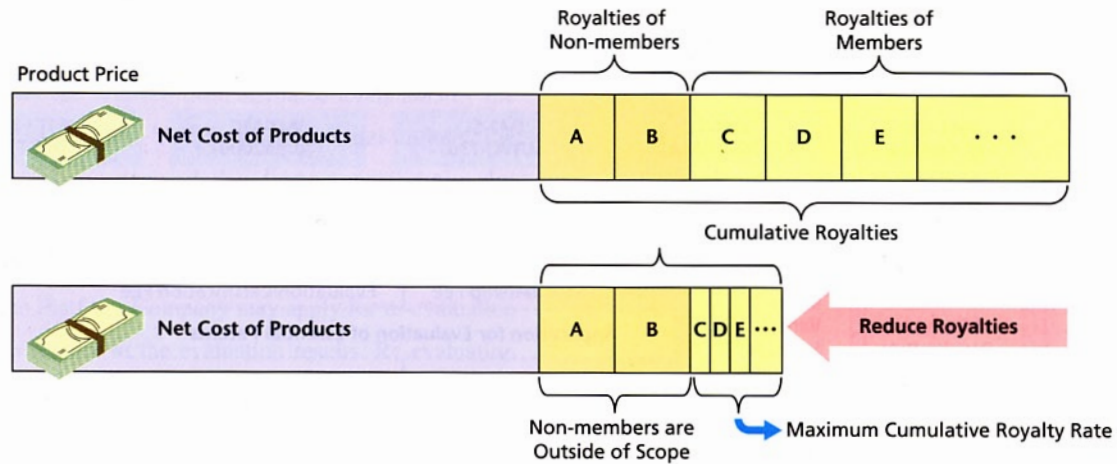


Figure 3 Reduction of Royalty Rate

The following is an additional explanation to the terms and conditions referred to in ① and ②.

- Application of SRR and MCR: Notes on ①

Products subject to royalty payment are divided into five categories: base station type equipment; radio network control type equipment; terminals; testing equipment; and miscellaneous. A patent holder participating in the Platform is required to grant a license at SRR per patent in each product category. However, if the cumulative royalty rate incurred by the licensee exceeds MCR, the royalty rate per patent is reduced at a certain rate, thereby adjusting and making the cumulative royalty rate equal to MCR (**Figure 3**). If $SRR=0.1\%$ and $MCR=5\%$, and 50 Essential Patents are licensed to the licensee, a royalty rate of 0.1% per patent must be paid per patent to each patent holder. However, if the number of licensed patents subsequently increases to 100, the royalty rate payable to each patent holder is reduced to 0.05% . The terms and conditions of licensing including SRR and MCR are decided by the Platform Company, which is described below.

- Ensuring Flexibility of Licensing Structure/Terms: Notes on ②

In Patent Pools, all patents are collectively licensed at a fixed royalty. As a result, companies who are licensors as well as licensees must pay the licensing fee to the pooling agency once, and then receive payment from the same agency, which is a redundant process. In contrast, on the Platform, it is the rule for licensors to license patents under the SLA based on the terms and conditions of the Platform. However, if the companies concluding a license agreement have a bilateral relationship and are able to reach an agree-

ment, they are allowed to conclude an agreement other than the SLA as long as the terms and conditions are fair and reasonable. For example, cross-license agreements, based on which companies offset each other's royalties, are permissible. However, the Platform obliges the companies to conclude the ILA—which basically consists of the same terms and conditions as the SLA—until negotiations are completed, in order to prevent licensors from exploiting their strong position to unduly delay the negotiations.

5. Organizational Structure and Functions

Figure 4 shows the organizational structure of the Platform. The Platform consists of Platform Companies, which decide the terms and conditions of licensing and administer licensing operations, and a Management Company, which evaluates and certifies patents and promotes the overall Platform concept within the industry. 3G Patents Limited, which was commercially launched in January 2003, is the Management Company.

A Platform Company is established corresponding to each of the five types of standard specifications for IMT-2000 radio interfaces approved by ITU. Membership is limited to licensors who hold the Essential Patents in the respective specifications. Members can appoint a director, and the board of the directors decides the terms and conditions of licensing. By separating the Platform Companies in this manner for each specification, each company can change the terms and conditions of licensing flexibly according to the proliferation rate and the market demand, which promotes competition between standard specifications as well.

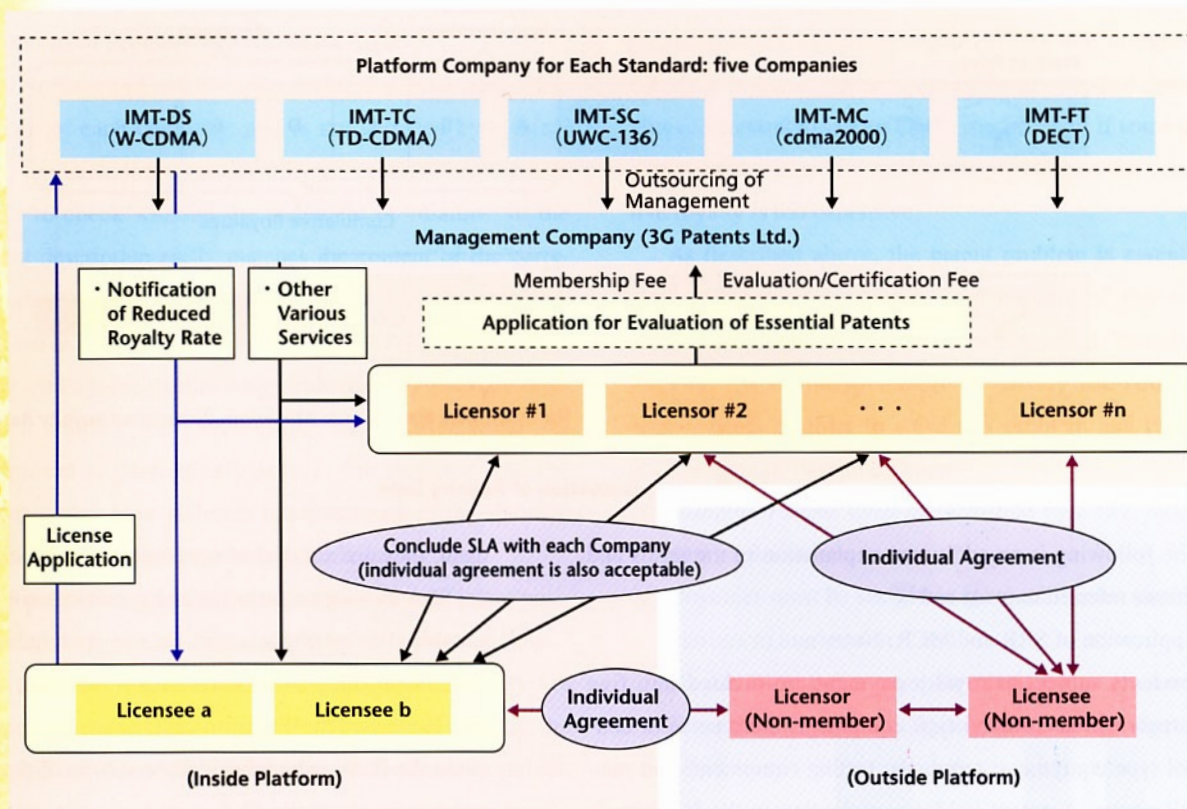


Figure 4 Framework of Platform

In principle, there is no membership limitation for registering with the Management Company; participation is broadly accepted from the industrial world. The board of directors of the Management Company consists of up to 12 directors appointed by registered members, and the directors are elected as fairly as possible from different regions. Also, each Platform Company can appoint a non-voting representative to the board of directors. The Management Company takes partial charge of the application, evaluation, certification, notification of results and approval relating to the evaluation of Essential Patents and markets the Platform worldwide. The Management Company outsources the evaluation of Essential Patents to the Evaluation Administrator, and the general administrative procedures for licensing to the Licensing Administrator which undertakes the reception of applications from licensees, the revised notification, reduced royalty rates in cases where the number of Essential Patents has increased, the production of SLA, etc. The Management Company is financed based on annual membership fees paid by industry members, a service fee for the evaluation of Essential

Patents, a service fee for the certification of Essential Patents, and a nominal service fee determined in advance with Platform Companies, and has no directly association with licensing income. Its impartiality and fairness in evaluation and various procedures is maintained by preventing licensing income from having any impact on its operating income.

6. Evaluation Process of Essential Patents

Figure 5 shows the patent evaluation process. Patent evaluation must be performed by patent attorneys in major countries upon whom Platform participants have agreed. For this purpose, the International Patent Evaluation Consortium (IPEC) was established, comprising a grouping of patent law firms including approved patent attorneys from the countries in which patents have been filed. IPEC undertakes operations as 3G Patents' Evaluation Administrator. 3G Patents maintains the evaluation quality by managing the adequacy of evaluation by the Evaluation Administrator. In consideration of the technical field and

the patent-issuing country, one Lead Evaluator and two Assistant Evaluators, all Patent Attorneys, who comprise the Evaluation Panel, are selected from affiliated Evaluators by the Evaluation Administrator. The Evaluation Panel collates the patent subject to application with the standard specification and determines whether it is essential or not within 10 weeks or so. In response to the evaluation results, the evaluation applicant or a member of the Platform Company may apply for re-evaluation only once with respect to the evaluation results. Re-evaluation is performed by an Evaluation Panel consisting of Evaluators different to the first evaluation.

Prior to commercial service launch, an operation test was conducted on the evaluation process using patents provided by members on a voluntary basis, one each from Japan, the U.S. and Europe. From Japan, one patent by NTT DoCoMo has been provided towards the operation test.

7. Clearance by Antitrust Regulatory Authorities

If an organization is to be established for licensing patents of multiple holders collectively, antitrust concerns cannot be avoided.

The basic rule is that a patent holder must exercise his/her right within its scope. Third parties who are not licensed to use the patent must either develop a technology to by-pass it, or obtain a license from a holder of a patent that renders by-pass possible, in an effort to enter the market. However, if a third-party organization gathers different patent rights from more than one patent holder and exercises the rights, those on the receiving end would have difficulties in finding alternative technologies and might not be able to enter the market, which hinders industrial progress as a result. If several companies share patents and exercise the patent rights for the purpose of blocking a third party from entering the market, most countries with antitrust laws would be inclined to review such conduct carefully to ensure that it is pro-competitive.

In order to solve this problem, 3G3P held a series of discussions and developed the Platform specifications [3], and ultimately requested formally clearance from the antitrust regulatory authorities in Japan, the U.S. and Europe.

On December 14, 2000, the Japan Fair Trade Commission (JFTC) publicly expressed its view that there are no antitrust concerns with the Platform framework in relation to the

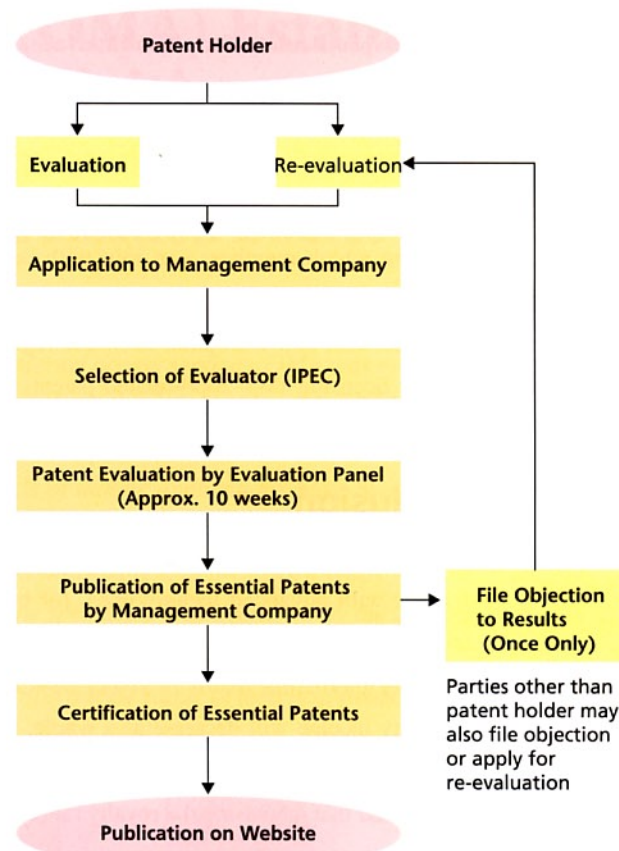


Figure 5 Evaluation Process

Antimonopoly Act [4] and, following modifications to the Platform specification in May 2002, the JFTC re-confirmed their acceptance Platform of the in June 2002. Subsequently, the U.S. Department of Justice (DoJ) Antitrust Division made a public announcement indicating antitrust clearance of the Platform and sent a Business Review Letter dated November 12, 2002 to the Platform's counsel, stating that there are no legal concerns [5]. The European Commission also approved the Platform framework on the same date as the Antitrust Division [6]. In conclusion, all antitrust regulatory authorities consider that the Platform is beneficial as it makes it easier to obtain licenses not only for existing communication-related companies but also for prospective market entrants, by identifying the Essential Patents and alleviating the workload on negotiations with individual patent holders, thereby promoting new entrants into the IMT-2000 mobile communication systems. The authorities also point out that competition is not restricted, as participation in the Platform is voluntary and non-participants to the Platform are not restrained from concluding agreements with third parties. Further, the DoJ recognizes that the

Platform Companies, which are established with respect to each standard specification for radio interface, do not restrict competition between the five IMT-2000 defined radio interfaces and are arranged in such a manner that collusion will not occur between licensees.

As explained above, the 3G Patent Platform has an environment in which members can join with peace of mind, as the world's first organization with clearance from Japanese, American and European antitrust regulatory authorities for licensing IMT-2000-related patents collectively.

8. Conclusion

Royalty income by providing technology is important for companies with advanced technologies, for building their financial portfolio. However, if higher costs attributable to royalty payments result in fewer new market entrants, royalty income will decrease as a whole. In consideration of the balance between demand and supply, it is easy to understand that increasing the royalty rate is not the only way to raise profits. The commercial launch of this Platform is expected to help the promotion of IMT-2000 on a global scale, by giving many companies the opportunity to enter the IMT-2000 market and realize various kinds of services.

In the future, the issue will be to expand the Platform

by encouraging non-member patent holders actively to participate in the Platform.

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*** Essential Patent:** A patent of which use cannot be avoided when adopting a standard specification in proprietary products and systems.