

NTT DOCOMO Patent Filing Activities

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NTT DOCOMO continues to acquire intellectual property rights such as patents, designs and trademarks so that users can continue using our services safely and securely. As well as reporting on the state of patent filings and so forth, this article also introduces results released for LTE-related patent examinations.

Figure 1 shows the number of patent applications filed by NTT DOCOMO from FY 2006 to FY 2010. NTT DOCOMO's patent applications in Japan have increased firmly with filings reaching 1,000 or more per year since FY 2009. These Applications have been mainly related to mobile wireless communication systems, with core network, handset and service related applications also being filed. NTT DOCOMO is also proactively engaged in patent filing in other countries for communications and audio-visual encoding technologies that would be adopted as standardized specifications.

NTT DOCOMO achieved 42nd place in international patent filing rankings under the Patent Cooperation Treaty (PCT), announced in 2011 by The World Intellectual Property Organization (WIPO) (with 323 filings, an increase of 25

on the previous year) [1].

Other companies that rated higher than NTT DOCOMO are mainly manufacturers in various countries and so forth. However, among telecommunications carriers, NTT DOCOMO achieved the No. 1 position for patent filings.

Figure 2 shows the trends in the number of NTT DOCOMO's annual registrations and rights that we retained. Similar to the number of applications, the number of registrations has also firmly increased.

“Xi” (Crossy), a commercial service launched in December of 2010, is a service that adopts LTE systems. Work to standardize these LTE systems began with 3GPP in 2005.

Many patent filings in the LTE field have come from a range of related companies working to formulate and establish specifications, including NTT DOCOMO. NTT DOCOMO has filed approximately 1,800 patents in this field. Because standardized technologies have been adopted, essential patents (patents enforced whenever a product or service is produced that meets certain standards) must be declared as “Fair, Reasonable and Non-Discriminatory (FRAND)^{*1}” to

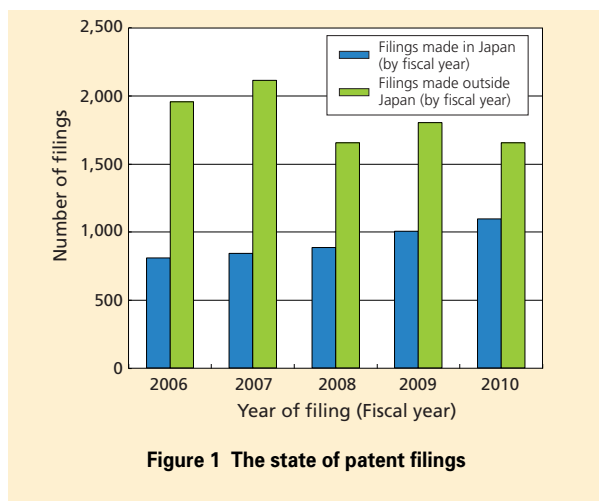


Figure 1 The state of patent filings

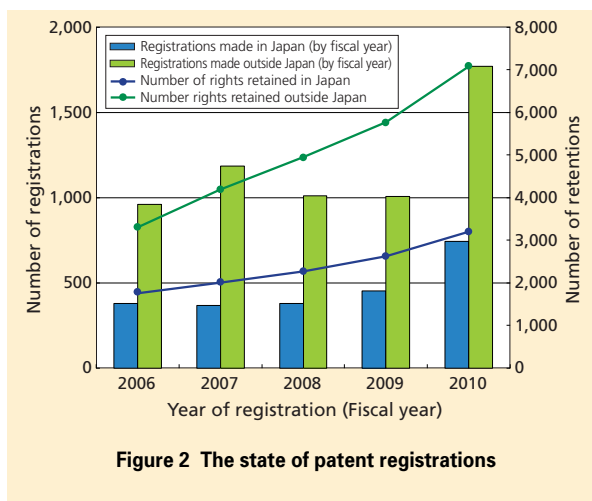


Figure 2 The state of patent registrations

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*1 **FRAND**: A term used by standardization organizations etc to describe licensing policies for patents etc. It indicates that licensing is fair, rational and non-discriminatory. “RAND” is another term with a similar meaning.

the organization responsible for standardization.

The European Telecommunications Standards Institute (ETSI)^{*2} is a European standardization body responsible for the standardization of telecommunications technologies. Because Europe is a large market with many companies participating, many companies from outside Europe also declare essential patents to ETSI. Therefore, the number of essential patent declarations made to ETSI can be used as one type of index to indicate “patenting power” regarding LTE technology development. However, since the essential patent declarations made to ETSI also conform to the policies of individual companies, they cannot necessarily be regarded as objective.

This section introduces the results of LTE patent examinations released [2] after essential disclosure to ETSI from the Cyber Creative Institute Co., Ltd. in December 2011. The report includes numbers of patents declared as essential, evaluation of compliance with standards, and estimations of the number of essential patents. Essential declaration lists include various categories such as divisional applications and applications made in each country. In this examination, to prevent duplication of the numbers, patents with the same content are summarized into patent families^{*3}, and compliance with standards for patents declared as essential are evaluated.

Firstly, essential patents are summarized as 2,999 patent family items. Sampling is then performed among those families to confirm compliance with standards, enabling an estimate of compliance for the entire family. Values shown in **Figure 3** are estimates of the number of essential patents for each company derived from results of evaluating these patent families for duplication and essentiality, which are calculated from the rate of compliance with standards (the percentage of invention details that comply with standard specification details in patents declared as essential by each company) and the number of essential declarations (the patent family base) for each company.

Once an essential declaration is registered, it can be seen as having no variation in the rate of compliance. However, the Patent Office might limit claims^{*4} in the process of examination and treat pending items as having a lower rate of compliance.

Results of this analysis reveal Qualcomm in first place (approx. 14 % with 240 items), followed by ZTE (approx. 12 % with 189 items), Ericsson (approx. 9% with 159 items), InterDigital (approx. 9 % with 149 items), Samsung (approx.

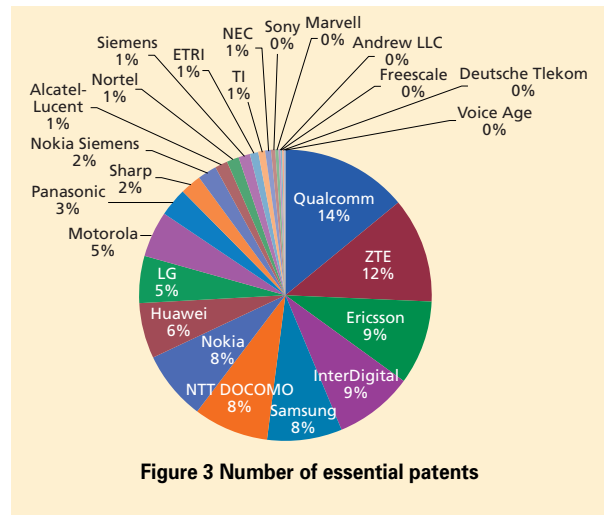


Figure 3 Number of essential patents

8 % with 142 items), NTT DOCOMO (approx. 8 % with 142 items), Nokia (approx. 8 % with 132 items) and Huawei (approx. 6 % with 105 items).

Regarding NTT DOCOMO, the report states that by focusing on patent filings after 2005, NTT DOCOMO has made declarations in 2009 and 2010. NTT DOCOMO has a high percentage of applications that go through to registration, with a very high rate of compliance with standards. In other words, NTT DOCOMO is able to retain a comparatively large number of essential patents that are already registered, which can be seen in the company’s high ranking shown in Fig. 3 (at position No. 5).

Regarding shares of LTE related essential patents, Qualcomm holds the largest share with approximately 14%, while other top ranking companies hold between 8 -12%. NTT DOCOMO is also among these top ranking companies, and the results show that NTT DOCOMO has patent power in the same league as major manufacturers. This is the result of the initiatives that NTT DOCOMO has taken in its LTE technology related R&D and standardization activities through partnerships with leading global corporations.

As a unique telecommunications carrier having large-scale research and development organizations, we plan to continue turning our R&D achievements into intellectual

*2 **ETSI:** European Telecommunications Standards Institute. A European standardization body engaged in the standardization of telecommunications technologies. Headquartered in Sophia Antipolis, France.

*3 **Patent family:** A collection of patent applications filed in various countries using patent priority rights, or resulting from certain patent applications that have been split up for filing.

*4 **Claims:** The scope of patent claims that are described in the patent specification.

properties and putting those intellectual properties to work.

REFERENCES

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