Chapter – 4

Standard Essential Patents (SEPs)

4.0. Introduction

Generally, a patent (a "conventional patent") grants the patent holder a right[1] to prevent third parties from infringing his patent rights. Specifically, A patent holder of a conventional patent is granted a legal right to stop others from making, using, selling, offering to sell, and importing ta product embodying a patented invention or a product made by a process protected by a patented invention. However, some characteristics of how a patent holder can use his patent rights may change if a patented invention is committed to a standard. This chapter briefy introduces the characteristics of a conventional patent and how at least some of these characteristics change when a conventional patent is committed to a standard and becomes a standard essential patent (SEP).

4.1. Nature of a conventional Patent

The holder of a conventional patent may (a) incorporate a patented invnetion into a product; or (b) maintian the patent in a patent portfolio for licensising purposes; or (c) or maintian the patent in a patent portfolio for defensive purposes; or (d) maintian a patent in the patent portfoilo for cross-licensing purposes; or (e) to sell the patent when desired and so forth. A patent holder is allowed to enjoy the patent rights without many conditions. A person (or a third

[1] Section 48 of Indian Patent Act 1970 (Amended) titled "Rights of Patentees" Subject to the other provisions contained in this Act and the conditions specified in section 47, a patent granted under this Act shall confer upon the patentee— (a) where the subject matter of the patent is a product, the exclusive right to prevent third parties, who do not have his consent, from the act of making, using, offering for sale, selling or importing for those purposes that product in India; (b) where the subject matter of the patent is a process, the exclusive right to prevent third parties, who do not have his consent, from the act of using that process, and from the act of using, offering for sale, selling or importing for those purposes the product obtained directly by that process in India: and available at http://www.ipindia.nic.in/IPActs_Rules/updated_Version/sections/ps48.html last visited on 29th March, 2016 and Article 28 of TRIPS: Rights Conferred -1. A patent shall confer on its owner the following exclusive rights: (a) where the subject matter of a patent is a product, to prevent third parties not having the owner's consent from the acts of: making, using, offering for sale, selling, or importing (6) for these purposes that product; (b) where the subject matter of a patent is a process, to prevent third parties not having the owner's consent from the act of using the process, and from the acts of: using, offering for sale, selling, or importing for these purposes at least the product obtained directly by that process, and 2. Patent owners shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts., available at https://www.wto.org/english/docs_e/legal_e/27-trips_04c_e.htm, last visited on May 16, 2016.

party) interested in procuring a license to a conventional patent may approach the patent holder with a request for grant of license. The patent holder may:

(a) grant a licnese and the terms of licnese may be agreeed upon by the patent holder ("licnesor") and the person interested ("licensee") and the agreed upon terms are written into a contract or a patent licnese agreement.

(b) refuse to grant a license to his patent.

The third party, in response to refusal to grant a license, may come-up with his/her own inventions, which may be much better alternatives to the patented invention of the patent holder. In another scenario, a third party may invent on their own and not even seek a license and may get a patent right and such invnetions. Further, the third party may seek patent protection for his alternate inventions and may then incorportae such patented inventions into his product. The patent holder who refused to grant a license to the third party has no rights to stop/prevent the third party from coming-up with alternate solutions and patenting such alternate solutions. Thus, the third party is free to invest, invent, patent, develop, and commercialize his patented invnetions. Refusal to grant a license will not harm the third party as the third party is free to develop alternate solutions and practice them. In fact, the alternate solutions so developed by the third parties can be more efficient than the prior approaches and the third parties may capture the markets by commericializing the alternate solutions. Availability of such flexibities to the third parties encourage innovation and provide legal protection to commercialize their inventions. The objective of the patent system is to protect the interests of the patent holders for a limited amount of time by providing exclusive rights, which in turn provides a motivation to innovate and commercialize.

4.2. A Patent to a Standard Essential Patent (SEP)

An SEP is a patent, which is ***necessarily infringed*** when ***implementing***

a standard*[2]*. Consequently, ***anyone*** (standards implementer) making ***a product implementing a standard*** needs ***to take a license to SEPs*** and the **SEP holder** is under ***a FRAND obligation to grant such licenses*** to ***anyone.***

An SEP is characterized by the degree to which the issued claims in an SEP read on the relevant portions of a Standard. An issued claim in a patent must correspond to the standard. Please refer to Fig. 2 below to see a high – level claim chart, which depicts how elements (A), (B), (C), and (D) in an issued claim read on the relevant portions of standard specification.

A patent is a SEP if the claim elements in the patent read on relevant portions of the standard specification. The standards implementer implementing a standard has to mandatorily practice such claim elements. However, the SEP holder may not be burdened with providing such claim charts or claim mapping while declaring a patent as a SEP to a SSO. Such claim charting and deeper analysis, anyway, are required if the SEP is a subject matter of a litigation and the SEP holder is under an obligation under the order of a court to provide such claim charts.

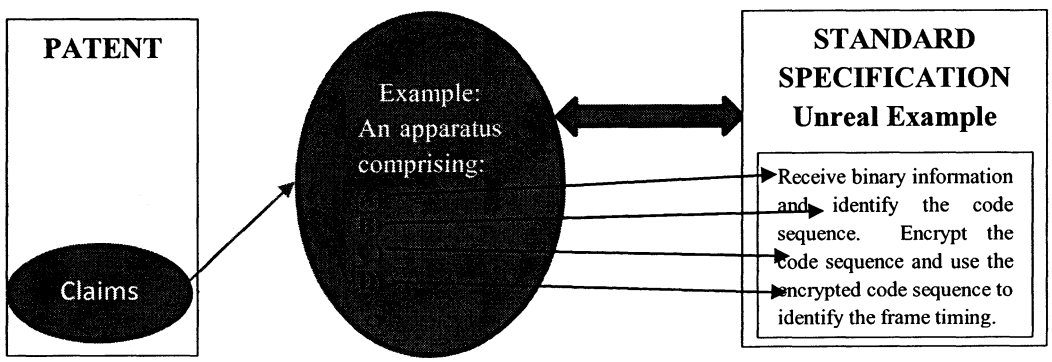

FIG. 2: A Patent to SEP

Fig. 3 provides a detailed example claim chart[3], which depicts the mapping of claim elements to portions of a standards. In FIG. 3, a US patent

[2] The Role of IPR in a competitive LTE market – Erik Ekudden, Kasim Alfalahi, and Gustav Brismark, available at http://www.ericsson.com/res/investors/docs/2011/110323_lte_ipr_ctia2011.pdf, last visited on 6th April 2016.

[3] Ibid 146 at P. 25

(US 5930366)[4] titled "Synchronization to a Base Station and Code Acquisition within a Spread Spectrum Communication System" assigned to Telefonaktiebolaget LM Ericsson was declared as a SEP to ETSI. The Claim Chart provides a mapping of the claim elements to relevant portions of the 3GPP standards specification. As can be seen each element in the claim (in the left column) has a corresponding equivalent in the right column (3GPP standards specification). The preamble of the claim (in the left column) refers to a format of code division multiple access (CDMA) and the presence of WCDMA in the right column provides support for use of CDMA in the 3GPP standard specification. Similarly, the elements repeating frame, primary synchronization code, secondary synchronization code use to identify a timing frame and a synchronization code is taught in the 3GPP standards specification as well. As every element in the claim is taught by the 3GPP standard specification it is clearly evident that the 590 patent should be practiced by anyone who practices/manufactures a standard compliant product. Thus, a patent becomes a SEP if every part (or element) of the patent claim must be found in the standard. A SEP, therefore, claims a mandatory portion of a standard.

[4] A US granted patent titled "Synchronization to a Base Station and Code Acquisition within a Spread Spectrum Communication System" assigned to Telefonaktiebolaget LM Ericsson and available at *https://patentimages.storage.googleapis.com/pdfs/US5930366.pdf last visited on 6th April, 2016*

CLAIM CHART SUPPORTING ESSENTIALITY

U.S. PATENT NO. 5,930,366	3GPP SPECIFICATIONS: 3GPP TS 35.211 V3.12.0 (2002-09) 3GPP TS 25.213 V3.9.0 (2003-12) 3GPP TS 25.214 V3.12.0 (2003-03)
1. A format for a code division multiple access downlink synchronization code transmission, comprising:	WCDMA in general.
a repeating frame comprising a plurality of slots;	3GPP TS 25.211, Sec. 5.3.3.5, Synchronisation Channel (SCH). Fig. 18 shows a repeating frame comprising a plurality of slots.
a primary synchronization code C_p repeated in each slot of the repeating frame; and	3GPP TS 25.211 Fig. 18 shows a primary synchronization code C_p repeated in each slot of the repeating frame.
a secondary synchronization combined code $C_{sch,i}$ providing information useful in a process for identifying both a frame timing and a scrambling code for the downlink transmission.	3GPP TS 25.211 Fig. 18 shows a secondary synchronization combined code C_{sch}^{i}. This code sequence provides information useful in a process for identifying both a frame timing (see 3GPP TS 25.213, Sec. 5.2.3.2 Code Allocation of SSC: "*The 64 secondary SCH sequences are constructed such that their cyclic-shifts are unique, i.e. a non-zero cyclic shift less than 15 of any of the 64 sequences is not equivalent to some cyclic shift of any other of the 64 sequences. Also, a non-zero cyclic shift less than 15 of any of the sequences is not equivalent to itself with any other cyclic shift less than 15.*") and a scrambling code (see 3GPP TS 25.211, Sec. 5.3.3.5: "*Each SSC is chosen from a set of 16 different codes of length 256. This sequence on the Secondary SCH indicates which of the code groups the cell's downlink scrambling code belongs to.*") for the downlink transmission.

FIG. 3: Claim Chart of US patent 5930366 reading on 3GPP Specifications

4.3. Nature of SEPs

Generally, the participants in the Standard Setting Organizations ("SSOs") may be broadly categorized as technology contributors (eventually may become SEP holders and then licensors) and technology implementers (eventually may become standards implementers and licensees). Several technology contributors contribute their technology solutions (S1, S2, S3,... S10) to form standards, however, among the several technology solutions (S1 to S10) provided by the technology contributors, some technology solutions ("winning technology") may be chosen (S4 may be chosen as a winning technology) to be a part of the standard. The technology contributors may already have granted patents or pending patent applications to cover the inventions embodied in the winning technology. Those patents protecting the winning technology which are essentially required to practice a standard may be referred to as standard

essential patents (SEPs) and the technology contributors who are the owners of such SEPs may be referred to as "SEP holders".

It is important to note that the winning technology (S4 in the above example) is a chosen technology solution from among several available technology solutions (S1 to S10). After the winning technology is declared as a standard or portion of a standard, the other technology solutions (i.e., S1 to S3 and S5 to S10) may have very little relevance or possibility of adaption of such other technology solutions, irrespective of their technical merits. Thus, the winning technology (S4) is locked into a standard and is therefore provided a wide market power, which the other available technology solutions (i.e., S1 to S3 and S5 to S10, those not chosen to be part of the standard) do not have. Therefore, the SEP holders ***have an exclusive and wider market access.*** This exclusive and wider market access allows a SEP holder to attain a dominant position and in exchange for attaining the wider market access, the SEP holder, voluntarily, agrees to license the SEP on FRAND terms to all license seekers without any selective refusals.

This is in contrast to a conventional patent, which does not necessarily provide a wider market access. As described above, in case of a conventional patent, a license seeker may approach the patent owner (of the conventional patent) seeking a license and the patent owner may deny granting a license. On such denial, the license seeker may approach another proprietary patent owner for licenses or come-up with alternate solutions. In fact, these alternate solutions may be an improved version over the proprietary patents and these alternate solutions may be patented as well, subject to satisfying the patentability criteria. Thus, a license seeker has several alternative options; however, a standards implementer has "no choice" or "no alternate" other than to obtain licenses to SEPs or opt out from implementing standards as the alternate solutions ("non-winning technologies") may not have acceptance in the market. The very fact that the standards implementers have "no choice" gives SEP holders an enormous power, which may be abused by at least some SEP holders.

4.4. SEP definition in IPR policies

Here, in this section, an attempt is made to understand the definitions of SEPs as defined in at least some Patent policies of SSOs.

JEDEC's patent policy [5] defines "Essential Patent Claims" means those Patent claims the use of which would be necessarily infringed by the use, sale, offer for sale or other disposition of a portion of a product in order to be compliant with the required portions of a final approved JEDEC Standard. Essential Patent Claims do not include Patent claims covering aspects that are not required comply with a JEDEC standard, or are required only for compliance that are marked "example", "non-normative" or otherwise indicated as not being required for compliance, or related to underlying enabling technologies are manufacturing techniques not specified in the Standard. "Essential Patent" means a Patent containing one or more Essential Patent Claims.

IEEE's Patent Policy[6] defines an essential patent claim means any Patent Claim (including claims in issues patents or pending patent applications) the use of which was necessary to implement either a mandatory or optional portion of a normative clause of the IEEE standard when, at the time of IEEE standard's approval, there was no commercially and technically feasible non-infringing alternative implementation method for such mandatory or optional portion of the normative clause. An Essential Patent Claim does not include any Patent Claim that was essential only for enabling technology or any claim other than that set forth above even if contained in the same patent as the Essential Patent Claim.

ETSI's Patent Policy[7] defines Essential., as applied to IPR, means that it is not possible on technical (but not commercial) grounds, taking into account normal technical practice and the state-of-the art generally available at the time of standardization, to make, use, sell, lease, otherwise dispose of, repair, use or

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[5] JEDEC's Patent Policy, Sec 8.2, definition of Essential Patent Claims and Essential Patent, available at http://www.jedec.org/sites/default/files/JEDEC%20Patent%20Policy_050310.pdf, last visited on April 11, 2016.

[6] IEEE-SA Standards Board Bylaws, available at http://standards.ieee.org/develop/policies/bylaws/sect6-7.html, last visited on April 18, 2016.

[7] ETSI's Intellectual Property Rights (IPRs) Policy, available at http://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf, last visited on April 18, 2016.

operate Equipment or Methods which comply with a standard without infringing that IPR. For the avoidance of doubt in exceptional cases where a standard can only be implemented by technical solutions, all of which are infringements of IPRs, all such IPRs shall be considered Essential.

TSDSI's Patent Policy[8] defines Essential., as applied to IPR, means that it is not possible on technical (but not commercial) grounds, taking into account normal technical practice and the state-of-the art generally available at the time of standardization, to make, use, sell, lease, otherwise dispose of, repair, use or operate Equipment or Methods which comply with a standard without infringing that IPR. For the avoidance of doubt in exceptional cases where a standard can only be implemented by technical solutions, all of which are infringements of IPRs, all such IPRs shall be considered Essential.

4.5. Conclusion

There is a pressing need to bring about a balance between the powers or rights of the SEP holders and the standard implementers. SEPs should be considered as a special group of patents and should be treated slightly differently compared to conventional patents by amending the patent laws to provide provisions under patent act. SEPs are being used by SEP holders to hold-up and extract higher royalties. All the incumbents in the telecommunication domain have used SEPs to extract higher royalties. The royalties sought by the SEP holders and what ultimately was decided as reasonable by the courts are hugely apart. In one case, the royalty determine d by court was approximately 100 times lesser (SEP holder expected as max of 9 USD per unit and the court decided 0.0347 USD as the reasonable royalty per unit). In another case, the SEP holders expected royalty was 3.3 USD to 36.90 for its FRAND encumbered patents but, the court decided that 0.0956 USD is the reasonable royalty per wireless chip.

[8] Intellectual Property Rights Policy, available at http://www.tsdsi.org/media/Help/2014-12-17/TSDSI-PLD-40-V1.0.0-20141217.pdf, last visited on April 18, 2016.