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A practical guide to determining FRAND in the telecommunications industry

By David Kennedy and **Larry Tedesco**, Berkeley Research Group, LLC

Debate in the telecommunications industry has been growing over the application of the fair, reasonable and non-discriminatory (FRAND) licensing requirements related to licensing commitments entered into by owners of standard-essential patents (SEPs). This debate has grown in recent years as an increasing number of manufacturers have entered the mobile handset market, many of which have made little, if any contribution to the development of mobile communication technology and standards. Some of those companies have captured a significant market share without licensing the standardised technology underlying their products, leaving innovative SEP portfolio owners without compensation for the decades spent investing in and creating essential mobile technologies. In an economic sense, these new-entrant manufacturers are sometimes referred to as 'free riders'. Often, the innovators which are otherwise willing to license on FRAND terms have no choice but to turn to expensive and protracted litigation against unwilling, free-riding manufacturers. This chapter addresses several current FRAND issues and challenges facing licensing professionals during the process of negotiating and completing license agreements to SEPs in the telecommunications industry.

Overview of technical standards

Standard-setting organisations (SSOs) are organisations whose primary activities are developing, implementing and maintaining technical standards that are intended to address the needs of a wide base of users. Technical standards are important across many different technologies, to enable the interoperability of systems and devices such as mobile phones. One of the most well-known SSOs is the European Telecommunications Standards Institute (ETSI), which develops worldwide standards for information and mobile communication technologies. Similar to a number of SSOs, ETSI has a policy under which rights holders can voluntarily commit to license their SEPs on FRAND terms.

The FRAND commitment

As a general rule, when patented technology is adopted into telecommunication standards set by ETSI, the use of the patent becomes essential to implementing the standard and the patent is referred to as an SEP. Since manufacturing a product that complies with that standard without practising the patent becomes impossible, ETSI requires that the patent holder agree to license its SEPs on FRAND terms. However, what is FRAND to one party or in one situation may be perceived as unfair, unreasonable and discriminatory to others or in a different situation. Although ETSI has never defined 'FRAND' and there is no universally accepted definition of the term, it is well accepted that the FRAND commitment does not require a licensor to offer the exact same terms and conditions to every licensee. This point was recognised by the International Trade Commission when it noted that: "The FRAND nondiscrimination requirement prohibits 'unfair discrimination,' but it does not require uniform treatment across licensees, nor does it require the same terms for every manufacturer or competitor." Unsurprisingly, there has been, and continues to be, a great deal of debate over the definition of these terms.

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'Ex-standard' value

One of the most controversial current issues with FRAND licensing is whether the licence price should include the value that a patent gains by being adopted into an industry standard. This value is sometimes referred to as 'hold-up' value, because it refers to the ability of an SEP holder to demand much higher royalties after the industry becomes 'locked in' to using a standard than it could have obtained through licensing the patent before the standard's adoption. A number of US court decisions over the past few years have focused on the need to apportion the intrinsic value of patented technology from any hold-up value that patented technology derives through its adoption into industry technical standards. For example, in *CSIRO v Cisco* the Federal Circuit stated that there are "unique considerations that apply to apportionment in the context of a standard-essential patent", and that methodologies used to arrive at a reasonable royalty for an SEP must "capture the asserted patent's value resulting…only from the technology's superiority" and "not from the value added by the standard's widespread adoption".

This apportioned value of patented technology is at times referred to as the '*ex-ante*' value. The'*ex ante*' concept is temporal and has been historically used in SEP patent damages cases to define an appropriate date for a hypothetical negotiation between a patent holder and an infringer at a historical point in time – specifically, right before a patent was incorporated into an industry standard. However, a pure *ex-ante* value (before the standard value) does not necessarily capture the relevant value for determining FRAND at the time the licence offer is extended by the patent owner. The FRAND evaluation of an offer should account for facts and circumstances unique to the parties, current economic data and the value of the technology at the time of the offer, not at the time the patent is incorporated into a standard, which in many cases takes place many years before the technology advances to commercial application and value. Therefore, to avoid confusion, we refer to the value of essential patented technology, which does not include the value resulting from incorporation of the patented technology into the standard at the time an offer is made by the patent owner, as the 'ex-standard' value.

'Ex-standard' technical analysis

When evaluating the royalty rates in FRAND offers, an in-depth ex-standard technical analysis and valuation of an SEP can, depending on the facts and circumstances of the situation, be a useful tool for licensing professionals to measure and understand an SEP's true inherent value. This analysis is split into two phases. The first begins with a rigorous study performed by or assisted by technical experts and those most familiar with the technology surrounding the SEP to isolate specific technical benefits provided by the SEP and determine how those benefits are different from, and more valuable than, the best available non-infringing alternative technologies that could otherwise have been included in the standards. Once technical experts have identified those benefits, licensing experts or economists can perform the second phase of the process, which is to determine an economic value that is tied directly or attributable to the technical benefits at or near the time of negotiating an appropriate royalty rate. One method to accomplish this is to rely on previous conjoint studies tied directly to the technical benefits or to design and perform a study if available studies are not on point. 'Conjoint studies' are a statistical survey technique used to determine how people value different attributes that make up products or services. Typically, information is compiled from consumers through a market survey and then analysed with a variety of different econometric and statistical methods. This process yields information such as what a consumer is willing to pay for specific attributes. Armed with a 'consumer's willingness to pay' (CWTP), a licensing professional or economist can evaluate whether the CWTP is in excess of the royalty rates offered by the patent owner and as a result truly represents an ex-standard value.

Comparable licence agreements

In addition to determining the true ex-standard value, licensing professionals can utilise previously executed licence agreements to help determine a FRAND-compliant royalty rate for subsequent licensees. A bilaterally (or arm's-length) negotiated licence agreement adjusted for comparability is the best indication of the true market value of the patented technology. This process is also widely recognised by legal precedent. In *D-Link*, the Federal Circuit affirmed that "licenses may be presented to the jury to help the jury decide an appropriate royalty award". In *CSIRO*, the Federal Circuit reiterated its "prior approvals of a methodology that values the asserted patent based on comparable licenses", and explained that "[s]uch a model begins with rates from comparable licenses and then 'account[s] for differences in the technologies and economic circumstances of the contracting parties.' Where the licenses employed are sufficiently comparable, this method is typically reliable because the parties are constrained by the market's actual valuation of the patent".

'Unpacking' licence agreements to determine true comparability

Determining comparability is often a difficult task and requires a significant amount of analysis and financial modelling. The structure and terms of a licence, including compensation, can vary significantly. Licences can be based on running royalty payments, lump-sum payments, cross-licence value, non-cash consideration or some combination of one or more of these and potentially other components. Additionally, running royalties can be calculated on a percentage of sales basis, on a dollar-per-unit basis or as a 'hybrid' using percentage of sales combined with dollar-per-unit royalty caps and floors. As such, the most important aspect of a licence agreement for licensing experts when evaluating the comparability of licence agreements is to identify what a licensee really paid for a licence converted to current dollars for comparison. In order to do this, it is often necessary to 'unpack' licence agreements to determine the true value and the effective royalty rate that the parties agreed to. The unpacking process is similar to a hypothetical negotiation in IP damages evaluation, in that it involves placing yourself in the shoes of the parties at the time they were originally negotiating the licence to determine the true value that each party agreed to. This includes understanding things such as:

- the sales projections that the parties were expecting;
- the strength and make-up of their respective SEP portfolios; and
- the average selling price (ASP) of their licensed products.

When evaluating cross-licences between large SEP portfolio owners, it is often also necessary to consider the relative strength of the party's portfolios and calculate a portfolio strength ratio (PSR), which can be used to compare the value of one portfolio to the other. The most important aspect of the unpacking process is to convert royalties expected to be paid over the term of the licence agreement into a present value and further in to a per-unit amount. Simply stated, a lump sum of $1 million paid upfront for an anticipated 1 million royalty-bearing units (or $1 per unit) is not the equivalent of a running royalty of $1 per unit. Market risk is distributed differently between the two agreements. While the former structure eliminates payment risk for the licensor for 1 million units, it incorporates market risk for the licensor that the licensee may actually sell 2 million units and thus only collect an effective royalty rate of $.50 per unit. Many licensors attempt to hedge the above risks by incorporating terms such as minimum payments, per-unit maximums (or caps) as a trade for per unit minimums (or floors). There are countless variations to the above and, therefore, there is significant need for a rigorous analysis of licences and the application of adjustments for comparability.

Dollar-per-unit versus percentage of sales royalty rates

When a comparison is being made to licensees with significantly different ASPs, as is often the case in the telecommunications industry, determining an SEP royalty rate only as a percentage of sales may not allow for true comparability. For instance, two licensees could be paying a 3% royalty to the same licensor for rights to the same SEP portfolio; but if Licensee A has

Table 1. Impact of varying ASPs on dollar-per-unit royalties

	Licensee A	Licensee B
ASP	$600	$200
3% royalty rate	$18.00	$6.00

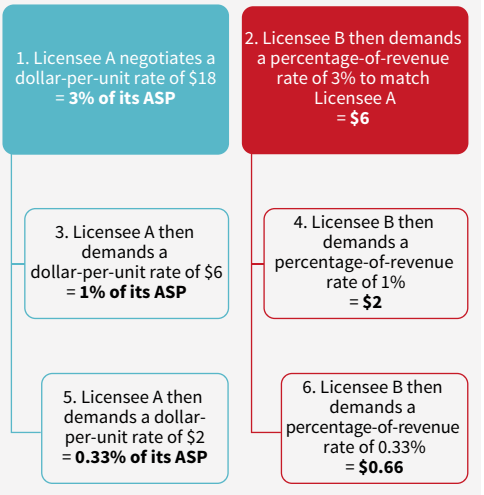
David Kennedy
Managing director
dkennedy@thinkbrg.com

David Kennedy is a certified public accountant and an expert in IP licensing, valuation, analysing claims of economic damages related to IP infringement damages and negotiating the economics of patent sales and licensing agreements. Over 30 years, he has served as the lead negotiator in more than 100 IP-related transactions and performed patent portfolio valuations in a variety of industry segments for investor groups, large public companies and patent holding companies. He has served in International Chamber of Commerce international arbitration and litigation matters as an expert in determining fair, reasonable and non-discriminatory (FRAND) royalty rates. Mr Kennedy has testified in the Court of Federal Claims and in state, federal and bankruptcy courts regarding patent values, royalty rates, lost profits, trade secrets and other forms of economic damages.

Larry Tedesco
Director
ltedesco@thinkbrg.com

Larry Tedesco provides financial damages, valuation, licensing and expert witness services in litigation matters. Over 18 years, Mr Tedesco has monetised intellectual property as an owner and on behalf of clients in a wide range of industries. He has also negotiated more than 75 patent and software licence agreements. Mr Tedesco's experience includes strategic advisory services to IP owners and companies of all sizes, providing multiple levels of IP damages assessments for plaintiffs and defendants in significant IP disputes, evaluating licensing terms and the intent of parties in patent licensing litigation and calculating reasonable royalty rates for standard-essential patents subject to FRAND commitments. Mr Tedesco is a Certified Licensing Professional and a Certified Valuation Analyst.

FIGURE 1. The 'race to the bottom'



an average ASP of $600 and Licensee B has an average ASP of $200, then Licensee A is paying three times as many dollars in a royalty than Licensee B.

Since in this situation both licensees are paying for rights to the same SEP portfolio, and thus the same technology, it is not hard to imagine that Licensee A might believe that the royalty rate it is paying is not fair or reasonable. Some difference in ASP may not relate to the overall cellular capabilities (assuming that both the $600 phone and the $200 phone have the same ability to initiate and receive 2G, 3G and 4G calls made possible by SEPs); instead, a portion of the ASP can relate to value unrelated to the standards, such as additional features, design value and licensee pricing strategies. Further, if Licensee A is competing in the same market as Licensee B, Licensee B could have a pricing advantage over Licensee A if the royalty were determined as a

percentage of ASP and not adjusted for other factors. In these situations one effective way to establish true comparability and the fairness and reasonableness of SEP licence offers related to the foundational technology that all licensees need to include in their products regardless of ASP is also to calculate and consider the 'implied' dollar-per-unit rate for each licensee.

Understanding 'implied' dollar-per-unit royalty rates can not only make comparisons between licensees clearer, but also help to avoid a potentially dangerous cycle that can be described as a 'race to the bottom', or a downward royalty spiral in which royalty rates are continuously driven down through a series of alternating negotiations between FRAND licensors and licensees with significantly different ASPs. Manufacturers with a high ASP would likely prefer to structure a royalty on a dollar-per-unit basis established by licence agreements with lower-priced manufacturers that are actually calculated on a percentage of the sales price; while manufacturers with a low ASP would likely prefer to structure a royalty on a comparable percentage-of-revenue basis established by a calculation of what a high ASP licensee is paying. The problem is that if both high-ASP and low-ASP licensees typically interchangeably (and perhaps understandably) argue for a beneficial royalty structure based on their own needs, in only a few rounds of back-and-forth negotiations and executed licences, both dollar-per-unit and percentage-of-revenue rates would be driven down to *de minimis* rates. An example of this using Licensee A and Licensee B from the above example is set out in Figure 1.

As illustrated above, after only a few rounds of negotiating and re-negotiating running royalty rate agreements with Licensees A and B based on alternating complaints of discrimination, the FRAND licensor could be facing almost no royalty payment. If left unchecked, this cycle could upset the existing balance between economic returns to innovators and manufacturers inherent in the standards-setting innovation ecosystem, driving FRAND royalty rates to negligible levels. Judge Holderman highlighted this potential problem in *In re Innovatio*, finding that "it is implausible that in the real world, patent holders would accept effectively nothing to license their technology" and further noting that "such a low return would discourage future innovators from investing in new technology and from contributing their technology to future standards". Considering the actual dollar-per-unit based royalty rates paid by licensees protects SEP licence holders from *de minimis* returns while providing all potential licensees with a fair and reasonable royalty rate structure, regardless of manufacturers' pricing strategies, premium-priced handsets and other non-SEP patented technologies.

Conclusion

Royalty rates – whether structured as dollar per unit, percentage of sales or lump sums – cannot be used for comparative purposes in a vacuum. It is imperative, however, that the central focus of successful FRAND licence negotiations incorporate returns for SEP owners to maintain an economic incentive to continue to innovate while allowing new market entrants access to SEPs needed to produce products that comply with industry standards and allow a competitive return. *iam*

Berkeley Research Group, LLC
12600 Deerfield Parkway
Suite 100
Alpharetta GA 30004
United States
Tel +1 678 229 2778
Fax +1 678 550 6818
Web www.thinkbrg.com