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The FRAND Licensing Regime in a Standard-Setting Environment: “If it ain’t broken don’t fix it”

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I. INTRODUCTION

Standard-setting activities, which aim to achieve device interoperability and product compatibility, play a fundamental role in fostering innovation and competition in a variety of markets. Such activities, typically carried out by armies of engineers, would generally not be expected to fascinate lawyers and economists. But they do - and they have recently received much attention as a result of high-profile cases,¹ complaints lodged with competition authorities,² and attempts by members of Standard-Setting Organizations (“SSOs”) to have their rules and procedures modified to prevent allegedly anti-competitive outcomes.³ There seems to be a growing perception, largely fed by certain interest groups, that current standard-setting procedures generally based on the so-called FRAND licensing regime⁴ unduly allow opportunistic holders of Intellectual Property (“IP”) embedded in a standard to extract excessive royalties from their licensees.⁵

Against this background, the objective of this paper is to demonstrate that the existing FRAND regime works. Ongoing proposals to alter it by tilting the bargaining position of licensors, in particular that of pure innovators, in favour of licensees are not only unnecessary, being based on false premises, but would also prove detrimental to investment and innovation. Fortunately, these attempts, and in particularly those to

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¹ See for instance David T. Beddow and Gregg H. Vicinanza, “FTC Charges Rambus With Abuse of Standard Setting Process”, Electronic Newsletter of the Intellectual Property Committee, American Bar Association (ABA) Section of Antitrust Law, 21 June 2002, available at http://www.abanet.org/antitrust/committees/intell_property/june21.html; For a recapitulation of the well-documented Rambus saga, see the Federal Trade Commission’s (“FTC”) decision In the Matter of Rambus, Inc., Docket No. 9302, available at <http://www.ftc.gov/os/adjpro/d9302/060802commissionopinion.pdf>.

² See for instance “European Panel Investigates DVD-Standards Rivalry”, New York Times, 9 August 2006; “Qualcomm rivals take case to EU”, Financial Times, 28 October 2005.

³ See for instance Robert McLeod, “ETSI talks failure puts onus on EC to resolve mobile telephone patent disputes”, MLex Comment, 13 November 2006.

⁴ See Part III below.

⁵ See Part IV below.

amend the rules and procedures of SSOs', have so far been unsuccessful. They remain nevertheless a constant threat.

This paper is divided in seven parts. Part II describes the main features of standard-setting processes, their significance and the strategic battles that may affect them. Part III focuses on the FRAND licensing regime traditionally prevalent in SSOs. Under this regime, owners of IPR that are essential to the standard typically commit to license such patents on "fair, reasonable and non-discriminatory terms". This Part begins by describing the scope of FRAND commitments. It then reviews the various meanings that have been attributed to the concept of FRAND and argues that a "FRAND royalty" cannot be determined in the abstract. Finally, the argument is made that, contrary to what has been suggested by a number of authors, by giving a FRAND commitment an owner of essential IPR cannot be deemed to have waived its fundamental right to seek injunctive relief in case its rights are infringed. Part IV reviews a number of academic studies which argue that the current FRAND regime has proved inadequate to prevent the emergence of a raft of perceived problems: anti-commons, patent thickets, patent hold-up, patent hold-outs, royalty stacking. It is shown that these studies have been seriously challenged and are subject to significant limitations. Moreover, it is argued that they fail to provide any empirical evidence of the problems denounced. Part V examines various proposals that have been made to reshape the FRAND regime. It shows that these proposals, most of which endorse - in one way or another - a compulsory regime of *ex ante* licensing, would create insurmountable practical difficulties and could raise serious competition law concerns. Part VI considers the applicability of Article 82 of the EC Treaty ("Article 82") to claims of excessive-pricing in the IP and standard-setting context. It shows that, should they be pursued, such claims would raise numerous conceptual and practical difficulties. Determining the competitive price of a tangible good is a notoriously complex undertaking, hence the European Commission's understandable reluctance to pursue excessive pricing cases except in a narrow set of circumstances. The potential for error will only be compounded when one deals with intangible assets. For these reasons, determination of appropriate royalty levels for valuable IP should be left to the market. Finally, Part VI contains a short conclusion.

II. GROWING IMPORTANCE OF STANDARD-SETTING PROCESSES

In this Part, we successively review the objectives and benefits of standardization (Section A), the various forms of standards (Section B), the strategic battles taking place in SSOs (Section C), and the traditional IPR policies adopted by SSOs (Section D).

A. Objectives and Benefits of Standardization

Industry standards ensure that products from multiple vendors are compatible and interoperable. A standard can be defined as a set of technical specifications which seeks to provide a common design for a product or process.⁶ The welfare benefits deriving from the existence of standards are obvious. By allowing complementary or component

⁶ See Herbert Hovenkamp, Mark D. Janis & Mark Lemley, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law*, (2003-04 Supplement) at 35.1.

products from different manufacturers to be combined or used together, they increase consumer choice and convenience, and reduce costs.⁷ For instance, amongst other practical benefits, they allowed the authors of this paper to connect wirelessly to the Internet from different locations in search of relevant materials.⁸ These consumer benefits can be especially important in network markets, i.e. where the value of a product or a service to a particular consumer increases with the number of consumers using the same product or service.⁹ Examples of such markets abound in the information and communications technology (“ICT”) sectors, where protocols allowing devices to communicate seamlessly and networks owned by different providers to interconnect are essential.

In today’s technology-driven world, the importance of industry standardization, device interoperability and product-compatibility have become critical to promoting innovation and competition.¹⁰ Standardization has been one of the key factors explaining the significant growth in innovation and product differentiation, which has arisen in the ICT sector. Of course, achieving product compatibility through standardization usually entails making choices, the effects of which will represent a cost. Standardization may at some point and to some extent constrain a variety of technological options by reducing competition between rival technologies.¹¹ As will be seen below, it may also raise issues related to access where, as is generally the case, the standard embodies proprietary technology covered by intellectual property rights (“IPR”).¹²

B. Various Forms of Standards

Standardization may arise under three distinct sets of circumstances. First, a particular product or technical specification may evolve into a *de facto* standard through market dynamics, as a result of widespread adoption by consumers. This was the case, for instance, of the first commercially successful spreadsheet, Lotus 1-2-3. Second, in certain cases public authorities (governments, agencies or supra-national entities such as

⁷ See Amy A. Marasco, “Standards-Setting Practices: Competition, Innovation and Consumer Welfare”, testimony before the Federal Trade Commission and Department of Justice, available at <http://www.ftc.gov/opp/intellect/020418marasco.pdf>, p.3 (“Standards do everything from solving issues of product compatibility to addressing consumer safety and health concerns. Standards also allow for the systemic elimination of non-value added product differences (thereby increasing a user’s ability to compare competing products), provide for interoperability, improve quality, reduce costs and often simplify product development. They also are a fundamental building block for international trade.”)

⁸ Shapiro illustrates the benefits of standardization with the following anecdote: “during the great Baltimore fire of 1904, fire fighters called in from neighboring cities were unable to fight the blaze effectively because their hoses would not fit the Baltimore hydrants. The following year, national standards for fire hoses were adopted.” Carl Shapiro, “Setting Compatibility Standards: Cooperation or Collusion?”, in Rochelle Dreyfuss, Diane Zimmerman & Harry First, Eds., *Expanding the Bounds of Intellectual Property*, Oxford University Press, 2001 at Section I.

⁹ See Mark Lemley, “Intellectual Property Rights and Standard-Setting Organizations”, 90 (2002) *California Law Review*, 1889.

¹⁰ See Marasco, *supra* note 7.

¹¹ On the other hand, standardization promotes competition within a standard, i.e. between products implementing the standard. See David Teece & Edward Sherry, “Standards Setting and Antitrust”, (2003) 87 *Minnesota Law Review*, 1913, at 1915.

¹² See Shapiro, *supra* note 8, at Section III.

the EU) will specify that certain products or processes must comply with a standard and thus compel manufacturers to adopt it. These are usually referred to as *legal* standards. Third, private organisations, often congregating dozens of member companies and individuals, may cooperatively agree on a standard. Such private Standard Setting Organisations (“SSOs”) may adopt a variety of structures and decision-making processes, and some will be formal whilst others will rely on informal method of cooperation. Their creation will often be prompted or supported by public bodies.¹³ In this paper, we will focus on *SSO*-generated standards, as they are the most significant and raise the most important issues.

Standard-setting taking place in SSOs is typically open to all interested parties and is designed to foster consensus.¹⁴ Participation is voluntary and the policies and decision-making procedures of formal SSOs endeavour to ensure that standards are developed in an open environment. Membership, however, implies accepting the terms and conditions set out in SSOs’ bylaws. Where these are perceived as burdensome or unfair, they will deter technology developers from joining. As a rule, each participating member has the opportunity to contribute to the scope of the standard, participate in its development, take part in the “consensus-driven” approval process, and make its positions known. Moreover, even once it is determined within an SSO that a particular process or technology should be standardized, the majority of SSOs allow for appeals by dissenting members.¹⁵ These policies and procedures aim to allow the most appropriate technology to become standardized, based upon technical merit and other relevant factors and to ensure that no single participant can manipulate or abuse the standard-setting process. In that sense, their nature is often quasi-legislative. While firms compete to have their technologies included in a standard, checks and balances are generally built within the SSOs’ decision making procedures to ensure that the best technological option succeeds.

C. Strategic Battles in SSOs

The significance of the outcome of the debate over the most suitable technologies to be incorporated into any given standard have occasionally severely strained the process. This is the result of the inevitable tension between the incentives that every firm has to promote its own proprietary technology as part of the standard and the need for SSO members to work together to develop, establish, endorse, and promote those standards.¹⁶ This tension can be exacerbated by what may be a “winner-take-all” nature of standardization in sectors with significant network externalities such as the ICT sector.

¹³ For instance, the European Telecommunications Standards Institute (ETSI), headquartered in Sophia Antipolis, France, was formed in 1988 by the European Conference of Postal and Telecommunications Administrations (“CEPT”) and is officially recognized by the European Commission as the organization responsible for standardization of information and communication technologies within Europe. Its mission is to “develop globally applicable deliverables meeting the needs of the Information and Communications Technologies (“ICT”) community.” See generally Lemley, *supra* note 9.

¹⁴ See Shapiro, *supra* note 8, at 4.

¹⁵ See, for instance, Telecommunications Industry Association (TIA) Engineering Manual, Art. 13.2 and Annex A, Section A5, available at <http://www.tiaonline.org>

¹⁶ See Shapiro, *supra* note 8, at 1.

Another factor contributing to the tensions that may arise in standard-setting processes, but also more generally in the interpretation of the IPR policies of SSOs (see below) relates to the fact that firms involved in standard-setting often wear different “hats” corresponding to the fundamentally different business models they adopt.¹⁷ A distinction may be made between the following categories: (i) pure innovators or upstream-only firms (i.e., firms which develop technologies and earn their revenues solely by licensing them); (ii) pure manufacturers or downstream only firms (i.e., firms which manufacture products based on technologies developed by others but which have no relevant IPR); (iii) vertically-integrated firms (i.e., firms which develop technologies and manufacture products based on those technologies and the technologies of others; these firms may either license their technologies for revenue or choose not to engage in other than defensive licensing activities with their own IPR); and (iv) firms which do not create technologies or manufacture products, but buy products which are manufactured on the basis of patented technologies. These different firms operate in either the downstream product market, the upstream technology market or in both. As a result, their incentives are asymmetric, and their behaviour in the standard-setting context diverges accordingly, as explained below.

While there is a certain degree of fluidity between these categories, the following structure of incentives can be identified:

- Pure innovators are entirely dependent on licensing revenues to continue their operations. These revenues should be sufficient to cover the costs incurred in developing the technologies they seek or hope to license (including the costs of failed projects), as well as to give them sufficient incentives to engage in complex and risky projects.
- Pure manufacturers have converse incentives. As royalties represent a cost (not revenue) they have every incentive to reduce them. The lower the level of royalties payable to holders of IPR essential to the standards they practice, the higher their potential level of profits.
- Vertically-integrated firms that both develop technology and sell products have mixed incentives. On the one hand, they can draw revenue from their IPR if they so choose. On the other hand, they will have to pay royalties to other firms holding IPR essential to the standard for the products they manufacture. Since the bulk of the revenues (and profits) of these firms is generally made downstream, through product sales, they are much less dependent than pure innovators on revenues generated by royalties. In their licensing negotiations with other firms, they may well be more interested in protecting their downstream business from litigation than in charging royalties. They will therefore have a much stronger incentive to cross-license their own essential IPR in exchange for essential IPR held by other firms than in seeking royalties.

¹⁷ See Teece & Sherry, *supra* note 11, at 1929.

- The immediate incentives of buyers of products implementing standards relying on patented technologies are generally in line with manufacturers. They may consider that the royalties which manufacturers pay to IP holders will increase the price of the products they buy from such manufacturers. This will, however, only hold true if the product market is competitive. As will be seen below, the extent to which royalty savings are passed on to buyers will vary depending on the state of competition in the downstream market. If that market is not competitive, royalty savings are unlikely to be passed on.

D. Traditional IPR Policies Adopted By SSOs

Most formal SSOs have procedures, usually referred to as IPR policies, the primary goal of which is to address the two fundamental issues arising in standard-setting, i.e. disclosure and licensing of IPR incorporated into a proposed or adopted standard.¹⁸ Although their scope may vary significantly, these procedures seek to encourage IPR owners to make their proprietary inventions available for standardization and use without imposing on them undue obligations. At the same time, SSOs' IPR policies strive to accommodate the interests of implementers to obtain access to the standardized technology, by avoiding situations where IPR owners refuse to license their technology essential to the implementation of a standard to protect, for example, their positions in downstream markets.¹⁹

Most SSOs encourage IPR owners involved in standardization to disclose upfront, i.e. prior to the adoption of a standard, the IPR that they consider may be "essential" for its implementation.²⁰ Early disclosure of patents, for instance, "is likely to enhance the efficiency of the process used to finalize and approve standards" and "permits notice of the patent to the standards developer [...] in a timely manner, provides participants the greatest opportunity to evaluate the propriety of standardizing the patented technology, and allows patent holders and prospective licensees ample time to negotiate the terms and conditions of licences [...]."²¹

However, as a rule SSOs do not impose an obligation on IPR owners to conduct a search for, or guarantee the disclosure of, all IPR that may be essential to a given standard. This would prove extremely difficult, as it would require the complex determination of whether a patent or pending patent application reads on a proposed standard. Indeed, this determination may not be feasible as the scope of a standard evolves through its development or, if the relevant IPR is a pending patent application, as claims are modified during prosecution. Moreover, it is generally recognized that a

¹⁸ See Lemley, *supra* note 9, at 21 et. seq.

¹⁹ See, e.g. ETSI Guide on IPR, Art. 1 ("The ETSI IPR Policy seeks a balance between the needs of standardization for public use in the field of telecommunications and the rights of the owners of IPR").

²⁰ ETSI defines "Essential IPR" as meaning "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] comply with a standard without infringing that IPR." ETSI IPR Policy (version of 23 November 2005) at Art. 15.

²¹ See Guidelines for Implementation of the ANSI Patent Policy, at 3, available at <http://www.ansi.org/>

search obligation would be especially onerous for the owners of large patent portfolios.²² The fact that the scope of such disclosure and the obligations imposed on IPR owners by the IPR policies of some SSOs have in certain instances been the subject of conflicting and ambiguous interpretations has led some commentators to decry “the inadequacy of typical SSO disclosure policies.”²³ As will be shown below, these concerns are generally misplaced.

Once disclosure is made, or contemporaneously with disclosure, IPR owners are typically asked to provide an assurance or commitment that, should their IPR be essential for a standard, they will license them on fair, reasonable and non-discriminatory (FRAND) terms to members of the SSO and outsiders.²⁴ As will be seen below, the IPR policies of most SSOs do not oblige owners of essential IPR to grant irrevocable licences thereto on FRAND terms. This would amount to compulsory licensing and would deter many owners of valuable technology from joining. But the owner of the IPR has an incentive to make such a commitment voluntarily. In essence, if the owner of essential IPR seeks to have its technology included in a standard, there is an incentive but no obligation to provide the SSO with the contemplated assurance that it will license on (F)RAND terms. Given the fundamental importance of FRAND commitments, Part III of this paper explores in greater details the concept of FRAND in the context of IP licensing.

III. IP LICENSING UNDER FRAND COMMITMENTS

This Part successively reviews the traditional model of bilateral negotiations between potential licensors and licensees (Section A), the rationale behind FRAND commitments (Section B), and the various meanings that have been given to FRAND (Section C). It finally shows that FRAND works (Section D).

A. The Traditional Model of Bilateral Negotiations Between Potential Licensors and Licensees

Standards typically include technologies protected by IPR. IPR are legitimate exclusive rights, which confer upon their owners two basic prerogatives: (i) the right to prevent any third party from applying or using the subject-matter of the IPR;²⁵ and,

²² See Teece & Sherry, *supra* note 11, at 1947 (“An obligation to search for “implicated” IP can be extremely onerous. It is a major task to search a patent database and to compare it against the proposed standard. Patent searching is especially problematic when the standard evolves over time. Further, it is often difficult to know whether a patent “reads on” a proposed standard, as that may entail a major effort at claims construction and interpretation. A search requirement is especially onerous for IP owners who have substantial numbers of patents. Many firms in high-tech industries have thousands of patents, hundreds of which may be potentially relevant to a proposed standard.”).

²³ See Robert Skitol, “Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard-Setting”, (2005) *Antitrust Law Journal* 727.

²⁴ See Lemley, *supra* note 9, p. 26.

²⁵ See Gerald F. Masoudi, Deputy Assistant Attorney General, Antitrust Division, U.S. Department of Justice, “Intellectual Property and Competition: Four Principles for Encouraging Innovation”, Digital Americas 2006 Meeting, Intellectual Property and Innovation in the Digital World, São Paulo, Brazil, 11 April 2006, p. 3 (“In the world of physical property, enforceability means the right to exclude: for example, the ability to evict a person from your land. In the world of intellectual property, the fundamental

correlatively, (ii) the right to set the conditions of a licence in consideration for use of the IPR and as a reward for the innovative contribution made. Except for certain exceptional circumstances,²⁶ a patent owner may therefore decide not to grant any third party a licence to practice the invention. These exclusive rights are recognized in all patent laws as well as in the TRIPS agreement.²⁷

SSOs generally do not force their member IPR owners, in the ICT sector usually patentees, to grant a licence for their patents. The ETSI IPR policy, for instance, does not contain any obligation to license essential IPR. Rather, it provides that a standard or specification may not be approved unless the owner of essential IPR provides an assurance of its intentions. For example, Section 6.1 of ETSI's IPR Policy provides that when essential IPR is disclosed, ETSI will request – but not oblige – the owner of the IPR to undertake in writing that it is prepared to grant irrevocable licences on FRAND terms and conditions, and as such to waive its right to refuse to offer a license to those seeking such. A FRAND undertaking also constitutes a waiver by the IPR owner of its right under patent law to grant exclusive licenses. Each of these waivers reflects a willingness by the patentee to forego some of its rights in exchange for the opportunity to have its patented technology included in a standard.

Even if the owner of an essential IPR decides not to make a FRAND commitment, it does not necessarily follow that the relevant IPR will be excluded from the standard. Under Article 8.1 of ETSI's IPR Policy, ETSI's General Assembly will examine whether alternate technical solutions exist. Where it concludes that this is not the case, the Director General may request the owner of the IPR to reconsider. However, the latter is not under an obligation to agree to license.²⁸

Consistent with a FRAND assurance is the need for standard implementers to still enter into a licence agreement with the IPR owner. In other words, a FRAND assurance is not, itself, a licence. Rather, in consideration for the IPR owner's willingness to forego

right is similar: an enforceable IP right means the right to exclude others from using your intellectual property right at all”).

²⁶ The ECJ, for instance, has held that such exceptional circumstances may occur where the refusal to license cannot be objectively justified and would eliminate all competition, in a downstream market, for a new product for which there is customer demand not offered by the owner of the IPR. See *inter alia* Case 238/87 *Volvo* 1989 4 CMLR 122, para. 8; Joined Cases C-241/91 P and C-242/91 P *RTE and ITP v Commission* ('*Magill*') [1995] ECR I-743, para. 50; Case C-418/01 *IMS Health GmbH & Co. OHG v NDC Health GmbH & Co. KG*, paras. 35 and 52

²⁷ Article 28 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS agreement.), Annex 1C to the Marrakech Agreement Establishing the World Trade Organization, signed in Marrakech, Morocco on 15 April 1994.

²⁸ This was recently confirmed by a Working Committee of the International Association for the Protection of Industrial Property (AIPPI) which stated the following with regard to the relationship between technical standards and patent rights: “The owner of a relevant patent can, in principle, not be forced to grant licenses to other members of the organization or to outsiders. Only in a few exceptional cases should compulsory licences be admissible according to the conditions of Art. 31 TRIPS or the respective national laws” and “(...) A patent right whether owned by a member of the organization or a third party, which has been identified as relevant for a ‘de jure’ standard, may be used in the standard only with the consent of the owner.” Summary Report on Question Q157 “The Relationship between Technical Standards and Patent Rights”, AIPPI Congress Melbourne, 2001, paras. 3.2 and 4, available at <http://www.aippi.org>.

certain of its exclusive rights, the standard implementer must obtain a grant to use the technology covered by IPR. Licensing negotiations between IPR holders and potential licensees, however, are conducted outside SSOs. For example, ETSI makes clear that such discussions will not take place under its standard development activities, as it takes the view that its role is directed to technical rather than commercial issues.²⁹ The “reasonable” and “non-discriminatory” character of any licence must be addressed in a commercial context outside the standards-setting environment. Recent proposals made by some members of ETSI to revise its current IPR policy in order to introduce the principles of “aggregated reasonable terms” and “proportionality” into the definition of FRAND did not succeed.³⁰ No consensus as to the need for or desirability of the proposed reform could be achieved among ETSI members as to these issues.

B. Rationale behind FRAND Commitments

The rationale behind the FRAND commitment is to ensure dissemination of the essential IPR contained in a standard, thereby allowing it to remain available for adoption by members of the industry, whilst at the same time making certain that holders of those IPR are able to reap adequate rewards from their innovations. The ETSI IPR Policy, for example, provides that IPR holders should be rewarded properly, explicitly recognizing that patent holders “should be adequately and fairly rewarded for the use of their IPR”.³¹

The terms and conditions of any licence arising from a FRAND commitment are the result of a normal process of commercial negotiations between the licensor and the licensee. A commercial market-driven negotiation of licence terms is not only what FRAND suggests but is also justified from an economic perspective, as it supports dynamic competition and provides incentives to innovate. Firms engaged in the development of innovative technologies “must not be restricted in the exploitation of intellectual property rights”³² lest their incentives to innovate be hindered. SSOs recognise that an IPR owner must be free to seek compensation that is sufficient to maintain investment incentives.

²⁹ ETSI’s Guide on IPR provides that “specific licensing terms and negotiations are commercial issues between the companies and shall not be addressed within ETSI. Technical Bodies are not the appropriate place to discuss IPR issues. Technical Bodies do not have the competence to deal with commercial issues. Members attending ETSI Technical Bodies are often technical experts who do not have legal or business responsibilities with regard to licensing issues. Discussion on licensing issues among competitors in a standards making process can significantly complicate, delay or derail this process.” ETSI Guide on IPR, Section 4.1.

³⁰ Pursuant to this proposal, called “Minimum Change, Optimal Impact”, Aggregated Reasonable Terms would mean that “in the aggregate the terms are objectively commercially reasonable taking into account the generally prevailing business conditions relevant for the standard and applicable product, patents owned by others for the specific technology, and the estimated value of the specific technology in relation to the necessary technologies of the product.” In turn, proportionality would mean that “compensation under FRAND must reflect the patent owner’s proportion of all essential patents.” See “Vendors Seek Compromise on LTE”, *Informa Telecoms and Media*, 20 March 2006.

³¹ See ETSI IPR Policy, Article 3.2.

³² See the European Commission’s “Guidelines on the application of Article 81 of the EC Treaty to Technology Transfer Agreements” [2004] OJ C 101/2, at para. 8.

Furthermore, given the voluntary nature of participation in SSOs, allowing IPR owners to seek adequate compensation is paramount to ensuring that those who own valuable proprietary technology remain involved in the standard-setting process.³³ Securing the participation of holders of valuable IPR allows SSOs to adopt standards based upon the best technological solutions. The adoption of a standard incorporating second-best technology would have potentially damaging consequences negating the purpose of standardization itself.³⁴ It would thwart the standard's acceptance by industry and consumers alike and lead to the development of incompatible products based on conflicting technologies.

The ability to license IPR on FRAND terms is, in this respect, a flexible tool which secures the availability of essential IPR without unduly constraining licensors.

C. Meaning(s) of FRAND

Despite its prevalence in the IPR policies of the majority of SSOs, virtually no SSO policies define the FRAND commitment as specifying or dictating a particular licensing result.³⁵ There is a regular refrain in the literature that the meaning of (F)RAND is unclear and that SSOs do too little to explain the scope and nature of the concept. Whilst recognizing that the “non-discriminatory” aspect of the FRAND promise is straightforward, certain authors have cast doubts on the intelligibility and therefore

³³ “Given the consequences of SSO rules and the nature of voluntary participation, SSOs must tread warily. IP holders must believe that their interests will be protected in the standards-setting process, or they may choose not to participate. Indeed, the proliferation of voluntary special-purpose consortia in many technological areas means that a number of different SSOs, to a greater or lesser extent, “compete” with one another to develop standards. Thus, IP holders that believe that a particular SSO does not adequately protect their interests may be in a position to leave that SSO and participate in another SSO that provides better protection for their IP rights”, See Teece & Sherry, *supra* at note 22 , p.3.

³⁴ See James C. DeVellis, “Patenting Industry Standards: Balancing the Rights of Patent Holders with the Need for Industry-Wide Standards”, (2003) 31 *AIPLA Q.J.* 301, 343 (“A simplistic view of the standardization conflict -- one that views the choice among patent policies as a choice between favoring patent holders and serving the public -- overlooks the fact that all sides will suffer if the standardization process fails to attract the best, most innovative technologies. If a standard-setting organization adopts an inferior standard because someone owns a patent on a superior technology and refuses to make it available on RF [royalty-free] terms, the standard-setting organization runs a real risk that the chosen standard will not be widely adopted. Certainly, the patent owner would not adopt the RF-based standard for itself, and other market participants may be willing to pay a licensing fee to access the superior technology. The inferior standard will thus compete with the patented technology, dividing the market, reducing that market's network effects, and working against the very reasons standard-setting organizations were created.”) and 344 (“The patent policy of a standard-setting organization may affect members' motivation for innovation. In the absence of an incentive allowing a patent holder to recover development costs, it is improbable that research and development will occur at the highest level in technological fields. ... Because patents frequently represent extensive research efforts and are expensive and time consuming to obtain, it is likely that if companies perceive that participation in the standard-setting process threatens patent portfolios, there will be a significant reluctance to participate in the process. Under a RAND system, a company has an incentive to compete for the adoption of its (often patented) standard. This competition in the standard-setting process leads to innovation and adoption of the optimal standard among the various options in the market.”).

³⁵ See Lemley, *supra* note 9, at 38.

effectiveness of the notions of “fair” and “reasonable” terms.³⁶ Others have gone so far as arguing, albeit without concrete support, that the supposedly vague (F)RAND promise is a “tool for misuse”.³⁷

As explained above, the fact that FRAND is not further defined cannot be viewed as a shortcoming of SSOs IP policies. Much to the contrary, it is the very absence of a definition mechanically translatable into concrete terms that bestows on the FRAND commitment the suppleness required to achieve one of the fundamental aims of standardization, i.e. to ensure the widest availability of the technology embodied in the standard in the widest possible variety of circumstances. In this respect, FRAND is very much akin to a general clause. It is to be shaped and given meaning by reference to concrete objective and subjective circumstances. The specific meaning of FRAND can only be established in concrete situations, in particular taking into account the positions of the licensor and the licensee. In the following sections we try to flesh out the meaning of the FRAND commitment and examine its different elements.

1. *Willingness to negotiate in good faith/no constructive refusal to license*

A FRAND commitment is intended to prevent an outright refusal to license or the setting of royalty rates and other terms and conditions so high as to suggest an intent by the IPR owner to do indirectly what it has committed not to do directly: refuse to license its essential IPR to other firms (i.e. a constructive refusal to license). It therefore entails a promise by the IPR owner that it is prepared to engage in good faith negotiations with any company wishing to implement the standard with a view to reaching a licensing agreement that will be defined in light of all circumstances present between the two parties at the time of the negotiations.

2. *Fairness and reasonableness*

The question of the meaning of the terms “fair” and “reasonable” contained in the FRAND promise has absorbed the attention of several legal and economic commentators in the last few years. Most of the literature does not distinguish between “fair” and “reasonable”, in part due to the fact that the term “fair” is specific to the EU context (US-based SSOs tend to refer to the concept of RAND as one variant, not FRAND). Various meanings have been given to these terms.

Several economists suggest that a reasonable royalty is the royalty that the essential patent holder could have obtained *before* a standard was adopted, i.e. on an *ex ante* basis. For example, Shapiro and Varian state that “[r]easonable should mean the royalties that the patent holder could obtain in open, upfront competition with other

³⁶ See Daniel Swanson & William Baumol, “Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power,” 73 *Antitrust L.J.* 1, at 3 (“[a] RAND commitment is of limited value in the absence of objective benchmarks that make clear the concrete terms or range of terms that are deemed to be reasonable and nondiscriminatory”); Lemley, *supra* note 9, at 127 (“It is all well and good to propose that SSOs require licensing on reasonable and nondiscriminatory terms. But without some idea of what those terms are, reasonable and nondiscriminatory licensing loses much of its meaning”).

³⁷ See Skitol, *supra* note 23, at 2.

technologies, not the royalties that the patent holder can extract once other participants are effectively locked in to use technology covered by the patent.”³⁸ Similarly, Swanson and Baumol argue that “[i]f the primary goal of obtaining RAND licensing commitments is to prevent IP holders from setting royalties that exercise market power created by standardization, then the concept of a ‘reasonable’ royalty for purposes of RAND licensing must be defined and implemented by reference to ex ante competition, i.e., competition in advance of standard selection.”³⁹ This position, however, is based on the unsupported premise that standardization necessarily establishes market power beyond the “power” conferred by the patent itself. As will be seen below, this is not certain.

In our view, the question of what “reasonable terms” may consist of goes back to the second prerogative of the patent owner, i.e. its right to be rewarded for the innovative contribution made and to ask the price that the market is willing to pay for its IPR (i.e. how valuable the IPR is to others). As noted above, standardization does not deprive a patent owner of this prerogative. The only material consequences of making a FRAND commitment is that the IPR owner waives its rights to refuse to engage in good faith negotiations to license and to grant an exclusive licence. The specific terms of any such licence, however, are left to be determined by the parties to the negotiation.

Thus, FRAND does not impose any specific and concrete obligations on the licensor with regard to the actual level of royalties or any other terms and conditions provided for in licensing agreements, outside of the context of a constructive refusal to license. Rahnasto, for instance, explains that “the [FRAND] rule leaves the determination of exact terms for the parties to decide. This case-by-case determination allows parties to a particular licensing transaction to find their own interpretation of ‘fair and reasonable’.”⁴⁰ He further adds: “In connection with standardization, the term ‘fair and reasonable’ is usually understood as a reference to the economic reality. Generally, a licence is fair and reasonable if the terms would be acceptable in arm’s-length-negotiations.”⁴¹

“Fair and reasonable” licensing terms would therefore consist of those terms determined through fair, bilateral negotiations between individual IPR owner and standard-adopter in accordance with the market conditions prevailing at the time of such negotiations.

3. *Non-discrimination*

Most authors consider that the “non-discriminatory” element of the (F)RAND promise is straightforward, requiring that IPR owners license similarly situated adopters

³⁸ See Carl Shapiro & Hal Varian, *Information Rules: A Strategic Guide to the Network Economy*, Boston: Harvard Business School Press, 1999, at 241.

³⁹ See Swanson & Baumol, *supra* note 36, p.5.

⁴⁰ See Illka Rahnasto, *Intellectual Property, External Effects and Anti-trust Law*, Oxford University Press, 2003, para.4.105.

⁴¹ *Id.* at para. 6.34.

on the same terms.⁴² Discriminating between similarly situated competitors active in the markets for the product incorporating the standardised IPR would hinder the competitive process, as would allowing licensees to mix and match various provisions of individual licence agreements that reflect trade-offs between the original parties.

Another interpretation has been suggested by Swanson and Baumol, who argue that an SSO participant that competes downstream with other adopters in the market for the standardized product must treat its adopter-licensees no less favourably than it treats itself. In other words, it should charge licensees what it “implicitly charges itself for use of the [intellectual] property.”⁴³ Swanson and Baumol also suggest a principle for determining license fees based on the “efficient component pricing rule” (ECPR), which they claim is “both necessary and sufficient for a license fee to be competitively neutral in downstream markets and, therefore, at least on that basis, a necessary condition for that fee to be non-discriminatory. That is to say, any license fee that substantially departs from the ECPR level can be deemed to violate the RAND requirement of non-discrimination.”⁴⁴

4. *What is a FRAND royalty? Can it be determined in abstract?*

The semantic concern with the meaning of the FRAND promise is usually linked to the more practical question of how to determine whether a specific royalty level complies with a FRAND commitment. In our view, the answer to this question turns on the merits of the long-established model of bilateral negotiations between IPR owner and standard-adopter.

As seen above, a licence can be deemed fair and reasonable if its terms would be acceptable in arm’s-length-negotiations. These terms can therefore not be determined in a vacuum, without subjective reference to specific IPR owner and standard adopter. Moreover, royalties are but one element of the consideration agreed upon between the parties. It is therefore unfortunate that the misleading term “FRAND royalty” has become shorthand for the more accurate “Royalty rate established under an agreement negotiated in accordance with a FRAND commitment” Other elements susceptible of pecuniary valuation, such as a cross-licence to the licensees’ IPR or an upfront fee, are

⁴² Interestingly, Teece & Sherry have argued that the problem of non-discrimination should in theory be of greater importance to firms than the issue of fairness: “[F]irms would prefer not have to pay royalties, just as they would prefer not to have to pay their rent or their income taxes. But so long as every firm must pay, then the cost of the royalties can be built into the price of the product being sold, just as the cost of the raw materials and labor needed to make and sell the product is likewise built into the price. That is, prospective licensees may rationally be far more concerned about the ‘non-discriminatory’ aspect of the RAND requirement than they are about the ‘reasonable’ aspect. This, in turn, implies that from an economic and organizational behavior perspective, it is quite rational for SSOs to pay much more attention to the requirement that licenses be available on (unspecified) RAND terms than they pay to the question of what the ‘reasonable’ royalty rates should be.” See Teece & Sherry, *supra* note 11, at note 149.

⁴³ See Swanson & Baumol, *supra* note 36, p. 11.

⁴⁴ *Id.*

