

Interpreting and Enforcing the Voluntary FRAND Commitment

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Introduction

A. Overview

Technical standards are far from a new phenomenon. Since the late eighteenth and early twentieth centuries, national and international bodies—in many cases purely private and voluntary bodies—have been promulgating standards in a wide array of commercially important technical fields. Over the years, thousands of such standards have been developed, approved, and used in industry. Until recently, all this was very largely the domain of engineers; until the last decade, despite their commercial and international importance, technical standards attracted very little litigation or legal commentary.

But times have changed. Now, lawyers are studying intensively each stage of the standardization process: membership rules of standards-setting organizations ('SSOs'), policies concerning disclosure of potentially relevant patents, licensing of "essential" patents, and enforcement in the case of alleged violations of SSO policies—all are now transformed into legal topics.

In this new world of standards, one of the currently most contentious issues concerns the meaning of a commitment by the holder of patents 'essential' to the practice of a standard to license such patents on 'fair, reasonable, and nondiscriminatory' (FRAND) terms and conditions. The body of legal literature addressing this question is by now substantial, and growing. While not necessarily reaching similar conclusions, a number of authors

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have addressed this issue as a question of economic theory: what limitations (if any) on the freedom of the parties negotiating a licence to essential patents will best ensure efficient outcomes?

As a response to this question, authors have variously argued that, in order to satisfy a 'fair and reasonable' commitment, a patent holder:

- Must charge no more than the incremental value of his invention over the next best technical alternative;¹
- Must not negotiate for a royalty-free cross-licence as part of the consideration for a licence;²
- Must set his royalty rate based on a mathematical proportion of all patents essential to the practice of a standard;³
- Must set his royalty rate in such a way as to prevent cumulative royalties on the standardised product from exceeding a low percentage of the total sale price of that product;⁴
- Must not raise requested royalty rates after the standard has been adopted, or after the relevant market has grown to maturity;⁵

¹ MA Lemley & C Shapiro, 'Patent Holdup and Royalty Stacking' (2007) 85 Texas Law Review, 1991, 1996; M Dolmans, 'Standards, IP, and Competition: How to Avoid False FRANDs' (2008) *Fordham IP Law Institute, Standard Setting — The Interplay With IP and Competition Laws* 12-13; J Temple Lang, 'Licensing, Antitrust and Innovation under European Competition Law' (April 13-14, 2007) *Fordham IP Property Conference* 2, 5-6 (arguing that 'the royalty for the technically better technology would tend to be driven down to a level based on its relative value, that is, how much better it was than the second-best').

² Dolmans (n 1 above) 14 (arguing that it would be 'unreasonable for a licensor to insist that licensees provide cross-licenses of (or non-assertion of patent clauses covering) their technology royalty-free or on below-competitive rates').

³ P Chappatte, 'FRAND Commitments — The Case for Antitrust Intervention' (2009) 5 European Competition Journal 319, 340; Temple Lang (n 1 above) 6 (arguing that 'fair and reasonable' requires proportionality).

⁴ Lemley & Shapiro (n 1 above) 2010-11.

⁵ Chappatte (n 3 above) 336; C Shapiro & H Varian, *Information Rules: A Strategic Guide to the Network Economy* (1999) 241 ('Reasonable *should* mean the royalties that the patent holder could obtain in open, up-front competition with other technologies, not the royalties that the patent holder can extract once other participants are effectively locked in to use technology covered by the patent.');

DG Swanson & WJ Baumol, 'Reasonable and Nondiscriminatory (RAND) Royalties, Standards Selection, and Control of Market Power' (2005) 73 Antitrust Law Journal 1, 10 ('If the primary goal of obtaining RAND licensing commitments is to prevent IP holders from setting royalties that exercise market power created by

- Is not entitled to seek injunctive relief against a standard implementer should they fail to agree on licence terms.⁶

The types of economic arguments relied on by these authors to justify these restrictive regimes may well be useful in debating public policy and the proper application of antitrust rules – although one of the present authors and others have elsewhere critiqued the merits of many of these calls for what is essentially government intervention in the private licencing process.⁷ But in this paper we step back to ask a different question: What do these arguments and proposed regimes have to do with the contract which is the source of the FRAND obligation?

This paper is divided in four Parts. Part I reviews the basic fact that a FRAND commitment is the result of a voluntary contract between essential patent holders and a standards-setting organization, with the important corollary that the meaning of that commitment must be determined through the legal methods of contractual interpretation. Using a FRAND undertaking to ETSI as an example, it identifies the main categories of

standardization, then the concept of a ‘reasonable’ royalty for purposes of RAND licensing must be defined and implemented by reference to *ex ante* competition.’).

⁶ J Farrell et al., ‘Standard Setting, Patents, and Hold-Up’ (2007) 74 Antitrust Law Journal 603, 638 ([A] patent holder that has made a commitment to license on a FRAND basis should not be able to get (or threaten) an injunction against use of the technology to comply with the standard.’); Temple Lang (n 1 above) 10 (arguing that ‘a licensor that is subject to a FRAND obligation has no right to seek an injunction against a company that is willing to take a licence on FRAND terms’).

⁷ Damien Geradin has published a series of articles in combination with other authors, including Anne Layne-Farrar, Jorge Padilla and Miguel Rato, which criticise the various arguments raised in the papers cited in the preceding footnotes on the grounds that these papers were not supported by legal and economic analysis, but instead merely reflected the policy preferences of their authors. See, eg, D Geradin & M Rato, ‘FRAND Commitment and EC Competition Law: A Reply to Philippe Chappatte’ (2009) European Competition Journal (forthcoming 2010); D Geradin, ‘Pricing Abuses by Essential Patent Holders in a Standard-Setting Context: A View from Europe’ (2009) 76 Antitrust Law Journal 329; D Geradin et al., ‘Competing Away Market Power? An Economic Assessment of Ex Ante Auctions in Standard Setting’ (2008) 4 European Competition Journal 443; D Geradin et al., ‘The Complements Problem Within Standard Setting: Assessing the Evidence on Royalty Stacking’ (2008) 14 Boston University Journal of Science & Technology Law 144; V DeNicolo et al., ‘Revisiting Injunctive Relief: Interpreting *eBay* in High-Tech Industries with Non-Practicing Patent Holders’ (2008) 4 Journal of Competition Law and Economics 571; D Geradin & M Rato, ‘Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-up, Royalty-Stacking and the Meaning of FRAND’ (2007) 3 European Competition Law Journal 101.

information potentially relevant to contract construction, including for instance the contract language itself, and the ‘negotiation history’ of the ETSI IPR Policy. Part II shows that none of these categories of information support any of the restrictive limitations listed at the opening of this introduction. On the contrary, ‘fair and reasonable’ are on their face flexible terms the specific content of which is substantially left to the negotiation between the parties. Our research also shows that all attempts made subsequent to the ETSI IPR Policy’s adoption to alter the balance of interests between essential patent holders and implementers by changing the meaning of FRAND have been rejected by the ETSI membership. Part III addresses issues regarding the judicial enforcement of a FRAND undertaking. First, we demonstrate that, when it is alleged that a patentee has failed to offer ‘fair and reasonable’ terms, the role of a court is not to determine what ‘fair and reasonable’ terms would be, but whether the terms offered, taking into account all of the specific circumstances between the parties and prevailing market conditions, fall outside the range of reasonableness contemplated by the FRAND commitment. Second, we conclude that a licensee should not be able to collaterally attack the enforceability of a licence based on a prior FRAND commitment. Third, we note that what is ‘fair and reasonable’ after full adjudication of infringement and validity may be higher than what would have been ‘fair and reasonable’ in the context of pre-litigation negotiations. Part IV offers a few observations as to the ‘intent of the parties’ with respect to the ‘non-discriminatory’ component of FRAND based on the deliberative record surrounding the adoption of the ETSI IPR policy, concluding that while the ‘ND’ of FRAND does impose requirements that in some contexts will go beyond the requirements of national competition law, it cannot be read as requiring the equivalent of universal “most favored licensee” rights for all licensees.

B. Methodology

We focus our analysis on the ETSI IPR policy for two reasons. First, the ETSI policy in particular is a subject of great economic importance and current controversy with the European Union. The WCDMA standard adopted by ETSI was, for instance, at the core

of a couple of a competition law investigations initiated by the European Commission, which ended with no finding of infringement at the end of 2009.⁸ Second, ETSI has maintained an unusually comprehensive and accessible archival history of its deliberations concerning IPR policy. ETSI was by no means the first SSO to request FRAND (or RAND) commitments from members, but it engaged in and has preserved records of meaningful discussion of its IPR policy at the time of its original adoption, and of proposed changes in subsequent years, leaving a valuable resource for those wishing to learn how industry participants actually understand FRAND – at least in the context of one major SSO.

For context and broader perspective, we have also looked to the IPR policy of the American National Standards Institute (ANSI), an organization founded in 1918 and a founding member of the International Standards Organization (ISO). ANSI is not itself an SSO, but rather is an organization that encourages standardization and accredits SSOs. ANSI has promulgated a patent policy since at least 1959,⁹ and requires as a condition of accreditation that an SSO comply with ANSI's patent policy.¹⁰ More than 200 SSOs (responsible for more than 9000 standards) are now accredited by ANSI and thus operate under its patent policy.¹¹ As will be seen, the ANSI IPR policy language is closely consistent with that of the ETSI policy. However, so far as we have been able to

⁸ In the *Qualcomm* case, six firms active in the mobile phone equipment sector filed complaints with the European Commission in the latter part of 2005 alleging that Qualcomm's licensing terms and conditions for its patents essential to the WCDMA standard did not comply with Qualcomm's FRAND commitment and, therefore, breached EU competition rules. 'Commission initiates formal proceedings against Qualcomm', Memo/07/389, (1 October 2007), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/389>. After a long and thorough investigation, the Commission eventually decided to close its formal proceedings against Qualcomm. 'Commission closes formal proceedings against Qualcomm', MEMO/09/516, (24 November 2009).

⁹ See ANSI Patent Policy (2 April 1959), available at <http://publicaa.ansi.org/sites/apdl/Reference%20Documents%20Regarding%20ANSI%20Patent%20Policy/02-Apr1959%2011.6PatentsASA.pdf>.

¹⁰ See ANSI Essential Requirements (January 2010), Sections 3.0, 3.1, 3.3, at <http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/2010%20ANSI%20Essential%20Requirements%20and%20Related/2010%20ANSI%20Essential%20Requirements.pdf>.

¹¹ Domestic Programs (American National Standards Overview), at http://www.ansi.org/standards_activities/domestic_programs/overview.aspx?menuid=3.

determine, ANSI has not maintained archives capturing the deliberations surrounding the original adoption of its RAND-based IPR policy.

I. The Contractual Basis of FRAND Obligations

A. FRAND As a Voluntary Contract.

The core right and definition of a patent is the power to exclude others from practicing the invention. Obviously, an agreement to licence on FRAND terms is a critical restriction of that right. What is equally obvious is that a FRAND obligation is *solely* the result of a *voluntary* contract entered into by the patent owner on an identifiable date.¹² And it is voluntary in at least two ways. *First*, a patent-holder may decline membership in an SSO, and thus have no obligations under its rules.

Second, based on our non-exhaustive review, it appears that at least most major SSOs make a FRAND commitment voluntary even for members. That is, members are requested – not required – to commit to licence patents on FRAND terms, and may elect to do so, or not, on a patent-by-patent basis. While there are SSOs that require a blanket FRAND commitment as a condition of membership, such requirements have in some instances created “nonparticipation” problems, ETSI and ANSI are representative in their explicitly voluntary policies, under which an obligation to licence a patent on FRAND terms arises not by automatic operation of the entity’s policy, but (at the earliest) only if and when the patent owner agrees, in writing, to licence on FRAND terms.¹³

¹² J Miller, ‘Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm’(2007) 40 Indiana Law Review 351 (‘The RAND promise, embedded in SSO bylaws to which participants agree, is primarily a matter of contract law.’); M Lemley, ‘Intellectual Property Rights and Standard-Setting Organizations’ (2002) 90 California Law Review 1889, 1909 (‘SSO IP rules have legal significance only to the extent they are enforceable. Because the IP policies are at base agreements by members of the SSO to abide by certain rules regarding IP ownership, their enforceability is initially a question of contract law.’).

¹³ 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 licence to those seeking

If a member patentee wishes to retain its right to exclude, and so declines to make a FRAND commitment with respect to a particular patent, then the SSO generally will simply adopt a standard that does not use that patented technology,¹⁴ leaving the SSO no worse off than if the excluded innovation had never been developed, and potentially advantaging consumers by setting up competition between standardised and proprietary solutions.

We note that the draft “Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements” (the “Horizontal Cooperation Guidelines”) recently issued by DG Comp would radically change this landscape, imposing a *de facto* requirement (on pain of competition law liability) that *all* SSOs require mandatory blanket FRAND commitments from members.¹⁵ With respect to SSO members, this policy would for the first time impose an *involuntary* termination of the basic patent ‘right to exclude’, with the only ‘voluntary’ option left being the choice to abstain from participation in the SSO. As a by-product, the ability of an SSO member to elect to compete against a standard by means of a proprietary solution would be eliminated as a practical matter.

one. Under the ANSI Patent Policy, “disclosure may be made by a patent holder or third party with actual, personal knowledge of relevant patents. Once such a disclosure is made, ANSI requires a written statement in order to determine whether the patent holder will provide licenses (a) on reasonable and non-discriminatory (‘RAND’) terms and conditions or (b) on a compensation-free basis (that may include other RAND terms and conditions). If the patent holder submits a patent statement to the effect of either (a) or (b) above, then this creates a commitment by the patent holder and third-party beneficiary rights in implementers of the standard.” ANSI, *ANSI Activities Related to IPR and Standards*, submitted to the Global Standards Collaboration -11, IPR Working Group Meeting, Chicago, June 2006 (GSC11/IPRWG(06)10) at p.4.

¹⁴ Section 8 of the ETSI IPR Policy contains a mechanism for dealing with the ‘non-availability of licences’ including a member’s refusal to licence on FRAND terms. Where an IPR owner informs ETSI of such a refusal prior to the publication of a standard, the General Assembly first tries to find a ‘viable alternative technology’. If none exists, and the IPR owner refuses to reconsider its position, there is a procedure for ETSI to decide whether ETSI ‘should pursue development of the concerned parts of the STANDARD or a TECHNICAL SPECIFICATION based on the non-available technology and should look for alternative solutions.’ (§ 8.1.3) Similarly, ANSI has said that under the ANSI Patent Policy, if “[licensing] assurances are not forthcoming or if potential users can show that the policy is not being followed, the standard may be withdrawn either by the consensus committee or through the appeals process.” GSC11/IPRWG(06)10 at p.5.

¹⁵ Communication of the Commission ‘Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements’ (5 April 2010) SEC (10) 528/2 draft para 282, available at http://ec.europa.eu/competition/consultations/2010_horizontals/guidelines_en.pdf.

B. Interpreting FRAND as a Contract.

If a FRAND undertaking is a contract, then there are legally proper methods for determining what that contract means, and they do not include lengthy flights of economic theory. On the contrary, both the Civil Law and Common Law traditions of contract interpretation and enforcement fundamentally look to discern and give effect to *the intent of the parties*.¹⁶

In that context, we note that the ‘parties’ to a FRAND undertaking are the patent owner and the SSO, while the ‘parties’ that developed and agreed upon the underlying IPR Policy were the diverse set of industry participants that make up the membership of the SSO – not academic economists or competition authorities. As a result, there is no reason at all to suppose that the ‘founding fathers’ of ETSI (for example) settled on IPR policies that are functionally interchangeable with EU competition law, as some authors more or less suggest.¹⁷ Nor is there any reason to suppose that the agreement they reached did or was intended to implement idealized economic theory.

We propose, then, to take the FRAND obligation seriously as a contract. Using a FRAND undertaking to ETSI as an example, we will ask when the contract was formed, and what the parties actually agreed to.

Acknowledging the relevance of the “intent of the parties” to the meaning of a FRAND commitment raises the possibly troubling spectre that FRAND could mean different things in different SSOs. As a theoretical matter, this is true. As a practical matter, there are good reasons to believe that the memberships of major SSOs do *not* mean different things by “FRAND”. First, the major players in major SSOs are generally multi-national

¹⁶ AL Corbin, *Corbin on Contracts* (1952) § 538. The intent of the parties also plays a fundamental role in the interpretation of contracts in Civil Law systems. See, for instance, Article 1156 of the French Civil Code whereby the judge must search for the intent of the parties when the contract was concluded or modified. Under this provision, the ‘subjective intent’ of the parties (‘what they really meant’) is more important than the literal language of the contract itself.

¹⁷ M Dolmans, ‘EC competition law and IP licensing in a standard-setting context: Are hold-up, royalty stacking and patent ambush serious concerns and, if so, what are possible responses?’ *ABA Section of Antitrust Law, IP Committee, Brown Bag on Standards and IP, Brussels* (June 22, 2007) (‘Article 82 obligations are substantially similar to the contractual obligations under FRAND commitments.’).

corporations that participate in multiple SSOs; one would expect their employees to carry a generally consistent expectation of what “FRAND” means from one context to the next. Second, as will be seen in our review below, individual SSOs have not infrequently explicitly referred to the IPR policies of longer-established SSOs as precedent to explain or justify their own IPR policies. And third, as an empirical matter to the limited extent commentary bearing on the intent of ANSI’s RAND licensing policy can be identified, it reveals no evidence of any significant divergence in intent with respect to FRAND commitments. Thus, while one must always bear in mind the possibility of divergent “intent” among different SSOs, it is considerably more likely that the record provided by the well-documented history of the ETSI IPR policy is giving us a window into how active participants in standardised high-technology industries generally understand FRAND.

C. Locating the Intent of the Parties

It is easy to refer to ‘the intent of the parties’, but in the case of a voluntary FRAND commitment, locating that intent is by no means a simple matter. A particular FRAND obligation comes into existence as the last step in a lengthy history. Taking ETSI as our working example, the relevant terms of the ETSI IPR Policy were fixed by vote of the ETSI membership in 1994.¹⁸ However, the adoption of the ETSI IPR Policy did not create any FRAND commitment; it merely set out the terms under which ETSI may (if it follows its rules) consider member-owned IPR for inclusion in standards. No contract is formed, no FRAND commitment is created, until a patent holder voluntarily submits a written agreement to licence identified patents (whether identified individually or categorically) on FRAND terms. Certainly it is this written agreement or ‘undertaking’ that is the contract (in the words of ANSI, it is the written undertaking that ‘creates a commitment by the patent holder and third-party beneficiary rights in implementers of the standard’¹⁹), but since such undertakings commonly repeat or refer to the ‘fair, reasonable, and nondiscriminatory’ terminology of the pre-existing IPR Policy, and are

¹⁸ A current version of the ETSI IPR Policy is <http://www.etsi.org/WebSite/document/Legal/ETSI_IPR-Policy.pdf> accessed on 7 March 2010.

¹⁹ GSC11/IPRWG(06)10 at p.4.

written against the background of that policy, such an undertaking cannot be construed as a free-standing document, but must be construed (as it was written) with reference to the IPR Policy.

In sum, we identify four main categories of information potentially relevant to contract construction: (i) the contract language itself; (ii) information as to the pre-existing ‘understanding of the industry’ as to what a FRAND undertaking to an SSO meant, at the time the FRAND concept was incorporated into the SSO IPR Policy; (iii) information concerning the actual deliberation and debate by the ETSI members at the time the policy was adopted; and (iv) subsequent comment and action relating to the meaning of FRAND by the relevant SSO.

The specific language of a particular declaration made by a patent holder would of course also be relevant. However, since this class of evidence of intent would by its nature pertain only to individual declarations, we will not give it any further consideration in this discussion of general principles.

It is indeed possible that economic theory might make additional contributions by enabling us to better *understand* the course of the contract negotiations, or the contemporaneous industry practices, but nothing in either the Civil Law or Common Law tradition could permit economic theory to *substitute* for or overrule evidence of the actual intent of the parties. Further, if one did wish to use economic theory to predict or better understand the IPR Policy compromises actually reached by the members of ETSI or any other SSO, one would need to look to game theory models that take into account the institutional interests and bargaining power of the member organizations, and we have not seen that complicated game attempted.

II. The Contractual Meaning of “Fair and Reasonable”

In this Part, we look to the main categories of information potentially relevant to contract construction identified above to determine the meaning of ‘fair and reasonable’ in

connection with the ETSI IPR policy in particular. On occasion, we also cite to ANSI materials as well for broader industry context.

A. The Plain Language

The starting point of any contract interpretation must be the language of the contract itself. The terms ‘fair and reasonable’ are on their face terms implying wide latitude; they are permissive words to which there is even conceptually no one right answer.²⁰ For example, in connection with the sale of a relatively illiquid property such as a house or a tract of real estate, negotiations between the seller and one or more potential buyers could result in a considerable range of prices (perhaps differing depending on the urgencies of the parties), any one of which the outside observer would have to concede to be at least ‘fair’ or ‘reasonable’. The same is surely true of prices and terms for patent rights.

But we can say more. When a patent holder commits to licence on ‘fair, reasonable, and nondiscriminatory’ terms in response to and pursuant to Section 6.1 of the ETSI IPR Policy, it is appropriate that, when considering the ‘plain meaning’, we look to what was before the declarant: the ‘plain meaning’ of FRAND as it appears in context within the IPR Policy.

²⁰ See for instance Case C-336/07 *Kabel Deutschland* [2008] ECR I-10889 para 46 (discussing the notion of ‘reasonable’ ‘must carry’ obligations that may be imposed by EU Member States upon cable operators on the basis of the Universal Service Directive).

The ETSI IPR Policy states as its ‘Policy Objectives’ the following:

‘3.1 It is ETSI’s objective to create STANDARDS and TECHNICAL SPECIFICATIONS that are based on solutions which best meet the technical objectives of the European telecommunications sector, as defined by the General Assembly. In order to further this objective *the ETSI IPR POLICY seeks to reduce the risk to ETSI, MEMBERS, and others applying ETSI STANDARDS and TECHNICAL SPECIFICATIONS, that investment in the preparation, adoption and application of STANDARDS could be wasted as a result of an ESSENTIAL IPR for a STANDARD or TECHNICAL SPECIFICATION being unavailable.* In achieving this objective, 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 IPRs.

3.2 IPR holders whether members of ETSI and their AFFILIATES or third parties, *should be adequately and fairly rewarded for the use of their IPRs* in the implementation of STANDARDS and TECHNICAL SPECIFICATIONS.

3.3 ETSI shall take reasonable measures to ensure, as far as possible, that its activities which relate to the preparation, adoption and application of STANDARDS and TECHNICAL SPECIFICATIONS, *enable STANDARDS and TECHNICAL SPECIFICATIONS to be available to potential users* in accordance with the general principles of standardization.’ (emphasis added)

The above language makes clear that the rationale behind the FRAND commitment – and the ‘fair and reasonable’ terms that are part of it – is twofold: (i) 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 (ii) making certain that holders of those IPR are able to reap *adequate and fair rewards* from their innovations.

The fact that IPR holders should be ‘adequately’ rewarded is listed as the first criterion, and is by no means a synonym of ‘fair’. One may ask, ‘adequate for what purpose?’ In the context of the wireless industry in which continual innovation is the lifeblood of the entire industry, the answer is utilitarian and reasonably clear: ‘adequate to motivate the investment and risk necessary to create the next generation of innovation’.

This is as one would expect: the goal to motivate future investment lies at the heart of the patent system, and is essential to the success of the standards enterprise. A Communication of the European Commission issued in 1992 – just at the time ETSI began developing its IPR policy – emphasized the prospective, motivational imperative specifically in the standards context:

‘[T]he incentive to develop new products and processes on which to base future standardization will be lost if the standard-making process is carried out without due regard for intellectual property rights.’²¹

Recent (2006) commentary from ANSI highlights the same policy goal of motivating new R&D investment:

‘In return for “sharing” its patented technology (including making it available to competitors), the patent holder may receive reasonable compensation from implementers of the standard in a non-discriminatory manner. The patent laws were designed in part to *stimulate innovation and investment in the development of new technologies*, which can be shared at reasonable rates with all those wishing to implement a standardized solution to an interoperability or functionality challenge.’²²

Given a goal of compensation that will ‘adequately’ motivate next-generation innovation, the ETSI IPR Policy’s reliance on the undeniably loose terms ‘fair and reasonable’ will be seen as inevitable rather than a ‘defect’. The reason is that the circumstances surrounding the negotiation of particular licencing agreements differ widely;²³ the scale of R&D investment which must be induced in order to bring in the next generation of innovation in a timely fashion may escalate from one generation to the next; the

²¹ Communication of the Commission ‘Intellectual Property Rights and Standardization’ (27 October 1992 COM (92) 445 final para 1.1.1.

²² GSC11/IPRWG(06)10 at p.3 (emphasis added).

²³ Not all standard implementers seeking to obtain a license from a given essential patent holder will be similarly situated. Generally, a range of variables will traditionally be negotiated between licensors and licensees, all of which may be of appreciable value, such as cross-licencing, volume of licensed products, exhaustion of patent rights, technology transfer, technical support, upfront fees, jurisdiction, scope of license (eg, products, territory, have made rights, etc.), possible product purchases, the formation of broader business relationships and cooperation, etc. Granting a license cannot be confused with selling a product at a standard price (which would be the royalty). Because licensors and licensees seek to exchange a potentially diverse assortment of ‘value’ (the royalties being just one possible elements of consideration), any interpretation of a FRAND commitment as ‘dictating or specifying a particular licencing result’ would prove a Procrustean bed.

investment-discouraging risk that R&D investment will result in failure may vary from one setting to the next. Given this radical and irreducible variability in the real world, only flexible terms such as ‘fair and reasonable’ – the precise content of which is left to negotiation between the parties on a case-by-case basis – can ensure the widest availability of the technology embodied in the standard in the widest possible variety of circumstances, without unduly diminishing the innovation incentives that patent law was designed to create.²⁴ Thus, as pointed out by the European Commission in its Communication on ‘Intellectual property rights and standardization’ that was issued while the ETSI IPR Policy was being negotiated, beyond the broad goal that essential technology be *available*, ‘it is not feasible or appropriate to be more specific as to what constitutes “fairness” or “reasonableness” since these are subjective factors determined by the circumstances surrounding the negotiation.’²⁵

By contrast, the above extracts of the ETSI IPR Policy do not contain any language hinting at *any* of the very specific and restrictive limitations listed at the opening of this paper, which other authors attempt to read into ‘fair and reasonable’.²⁶

²⁴ In this respect, FRAND is very much akin to a general clause, albeit a contractual one. ‘General clauses or standards (‘Generalklauseln’, ‘clauses générales’) are legal rules which are not precisely formulated, terms and concepts which in fact do not even have a clear core. They are often applied in varying degrees in various legal systems to a rather wide range of contract cases when certain issues arise such as abuse of rights, unfairness, good faith, fairness of duty or loyalty or honesty, duty of care, and other such contract terms not lending themselves readily to clear or permanent definition.’ S Grundmann & D Mazeaud (eds), *General Clauses and Standards In European Contract Law – Comparative Law, EC Law and Contract Law Codification* (2006).

²⁵ Communication of the Commission ‘Intellectual Property Rights and Standardization’ (27 October 1992) COM (92) 445 final para 4.3.3.

²⁶ For instance, nothing can be read in such extracts as suggesting that FRAND imposes any specific and concrete obligations on the owner of standard essential patents with regard to the actual level of royalties or any other terms and conditions provided for in licencing agreements. Nokia’s Vice President for Intellectual Property Rights, Dr. Ilkka Rahnasto, makes a similar observation. He 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 licencing transaction to find their own interpretation of “fair and reasonable”.’ I. Rahnasto, *Intellectual Property Rights, External Effects and Anti-trust Law* (OUP, 2003) 4.105. 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.’ *Ibid* 6.34. ‘Fair and reasonable’ licencing terms would therefore consist of those terms determined through fair, bilateral negotiations between individual IPR owner and standard implementer in accordance with the market conditions prevailing at the time of such negotiations.

Also in at least potential contrast to the pragmatic and prospective policy purposes embodied in the goal of ‘adequate’ compensation to IPR owners found in Section 6.1 of the ETSI IPR Policy is the Horizontal Cooperation Guidelines’ proposal to measure what is ‘fair and reasonable’ by reference to ‘the economic value of the patents’²⁷. While ‘economic value’ could be defined so many ways that it may in practice be as open as ‘fair and reasonable’, on its face it introduces terminology foreign to the IPR policy of ETSI (and that of ANSI), and suggests a retrospective focus (on the ‘value’ of past innovation) rather than the prospective and motivational focus that is native to the theory of patents. Certainly the ‘plain language’ of the ETSI IPR Policy does not point in that new direction.

B. ‘Fair and Reasonable’ in the Standards Context Prior to the ETSI IPR Policy

While focusing on the ETSI IPR Policy in our discussion above, we have also cited to ANSI-related sources where available as providing a separate ‘datapoint’. However, the IPR policies of major SSOs are in truth not ‘independent’. No SSO IPR policy adopted in recent decades has arisen *ex nihilo*; quite the contrary, they are adopted by sophisticated industry participants against a global background of decades of successful precedent. In the case of ETSI, the framers of its IPR policy very explicitly picked up the ‘FRAND’ concept from the pre-existent ‘RAND’ policy of the International Standards Organisation (ISO). For example, a document submitted by the ETSI Technical Assembly Chairman in 1991 proposed that ‘The licens[or] is required to grant licences on fair and reasonable non discriminatory terms as for the ISO policy.’²⁸ Similarly, the ETSI Director submitted the ETSI Annual Report to the 12th ETSI General Assembly in 1992, which stated that ETSI was ‘developing a policy, based on that of the International Standards Organisation (ISO) and the International Electrotechnical Commission (IEC)’.²⁹ IPR policies very similarly worded to that of the ISO were at that time already

²⁷ Horizontal Cooperation Guidelines para 284.

²⁸ 12 TA TD 7 4 (attached to ETSI/GA11(91) TD 20). (We use the ETSI nomenclature to identify ETSI documents. Thus, this ETSI Technical Assembly (‘TA’) document was attached to ‘Temporary Document’ number 20, submitted at the 11th ETSI General Assembly meeting in 1991.).

²⁹ ETSI/GA12(92)TD 15 6.

in place at other internationally important SSOs as well. It is reasonable, then, to suppose that the understanding of technology industry companies as to what ‘fair and reasonable’ meant in this context was informed by the usage in those other SSOs.

One could review that context at length, but we will limit ourselves here to only a few illustrations. For instance, an ISO document circulated by the ISO/IEC Secretariat in 1999 stated that, even by that date, ‘ISO has no guidelines as to what constitutes ‘reasonable’ since each patent holder sets its own fee which is based upon commercial considerations at the time.’³⁰ Similarly, the patent policy of the International Telegraph and Telephone Consultative Committee (CCITT) (now known as ITU-T) in place in 1994 aimed to ensure that patentees ‘would be willing to negotiate licences with other parties on a non-discriminatory basis on reasonable terms and conditions’, but emphasized that the ‘detailed arrangements arising from patents (licencing, royalties, etc.) are being left to the parties concerned, as these arrangements might differ from case to case.’³¹ Finally, in a 1992 letter to ETSI, ANSI noted that ‘under the ISO/IEC and ANSI policies licensors remain free to negotiate such license terms as they may deem appropriate so long as such licenses are fair and non-discriminatory’.³² Obviously, by the time ETSI set out to adopt its own IPR policy, the ISO, ITU, and ANSI between them had (or their members had), promulgated numerous economically important standards which had been widely and successfully implemented, within the framework of this generally consistent and unrestrictive conception of ‘F/RAND’.

Here again, what our research has *not* found is any indication, by the time ETSI adopted its current FRAND policy in 1994, that ‘fair and reasonable’ in the context of the ISO – or other SSOs – had ever been held by the ISO or by any court to imply *any* of the detailed restrictions recently hypothesized by various authors.

³⁰ ‘Issues Relating to Patents – SC17’s Patent Policy’ (Sept. 21, 1999) ISO/IEC JTC1/SC17 N 1585.

³¹ ETSI/GA15(93)18 (enclosure to letter dated 29 October 1992 from CCITT to Eurobit). (We use the ETSI nomenclature to identify ETSI documents. Thus, this document was ‘Permanent Document’ number 18, submitted at the 15th ETSI General Assembly meeting in 1993; ‘Temporary Documents’ are given a ‘TD’ designation.).

³² ETSI/GA12(92)TD3 4.

C. ‘Negotiation History’ of the ETSI IPR Policy

As we have noted, the relatively recent history of the adoption of ETSI’s IPR policy is well documented, and key points in the negotiation and adoption of that policy may also shed light on what ETSI members (including major multi-national technology companies³³) understand that they are agreeing to when they make a FRAND undertaking.

ETSI as an organization was established in 1988, by the European Conference of Postal and Telecommunications Administrations (‘CEPT’). As discussed in the previous section, when it set out to adopt an IPR policy in the early 1990s, ETSI looked to the ISO IPR policy in general, and in particular with respect to FRAND licensing. However, in other respects ETSI’s draft policy initially aimed at what the ETSI Technical Assembly Chairman believed would be an ‘advance’ over the ISO IPR policy.³⁴ This proposed package of heightened restrictions on IPR owners included what became referred to as an ‘automatic licencing’ or ‘licencing by default’ provision, a requirement of advance declaration of maximum royalty rates, a rule precluding required cross-licences, and a mandatory arbitration requirement.³⁵

Commencing at the 12th ETSI General Assembly meeting in April 1992, fierce controversy broke out over these proposed heightened restrictions. We find in this debate an interesting intersection of ETSI and ANSI, as ANSI submitted to ETSI a letter containing strong warnings about the impact of the proposed restrictions on licensing freedom on incentives for innovation:

‘If holders of IPRs are deprived of the ability freely to determine the terms and conditions upon which they will (or will not) make their IPRs available to others, the incentive for investing in innovative research and development will be significantly compromised. Furthermore, the

³³ For example, an ETSI Special Committee on IPR appointed in 1994 to propose provisions for an IPR policy included representatives of AT&T, Bosch, IBM, Motorola, Nokia, Philips, and Siemens, in addition to a number of less multi-national corporations. See ETSI/GA 20(94)2, ANNEX IV, at 89.

³⁴ 12 TA TD 7 3.

³⁵ ETSI/GA12(92)3.

incentive for leaders in the development of technological advancements to participate in the ETSI standardization process will be dramatically undermined.’³⁶

Nevertheless, at the March 1993 15th ETSI General Assembly, an IPR Policy and Undertaking including some of the novel provisions noted above was approved over heated opposition including threats by some participants to withdraw from ETSI.³⁷

However, following the approval, even louder opposition broke out. Several important IPR owners objected strongly to the ‘automatic licencing’ provision, and the Computer and Business Equipment Manufacturers’ Association (‘CBEMA’) filed a complaint with the European Commission asserting that novel aspects of the policy (including the requirement of advance disclosure of royalty rates) were anticompetitive. Important participants threatened to withdraw from ETSI if the policy was implemented;³⁸ so serious was the dissention among the membership that the ETSI Technical Assembly Chairman warned that ‘other entities with simpler rules may have ambitions to take over ETSI work and ETSI could be out of business in five or ten years’.³⁹ On 22 July 1994, the ETSI General Assembly voted to ‘abandon the IPR Undertaking as adopted by the General Assembly meeting during its meeting on 18 March 1993’.⁴⁰ The 1993 draft IPR

³⁶ ETSI/GA12(92)TD3 4.

³⁷ For example, IBM called the proposal ‘a source of deep divisions within the ETSI membership’ and stated that for ‘many members it is the company’s strategic assets and policies which are at stake’. ETSI/GA15(93)26. IBM said ‘IBM has to evaluate now its future involvement in ETSI’. ETSI/GA15(93)6. Other companies said words to the same effect. ETSI/GA15(93)23.

³⁸ EJ Iversen, ‘Standardization and Intellectual Property Rights: ETSI’s controversial search for new IPR-procedures’ (September 1999) (Paper presented at the first IEEE conference on standardisation and innovation in information technology, Aachen, Germany) (‘ETSI received between 12-14 letters from parties . . . who threatened to pull out of ETSI if it implemented the 1993 Policy.’).

³⁹ ETSI/GA20(94)22 Rev.1 4. The threats of participants such as IBM to withdraw from ETSI, and the Chairman’s comment quoted above, raise the interesting point that an SSO—even an SSO such as ETSI which has been granted a supposed monopoly position by law or regulation—does not have an unconstrained ability to set restrictive IPR policies. Development of successful next-generation standards in high technology fields can only be accomplished through the intensive efforts of the industry leaders, and unpalatable SSO IPR policies may cause key players to channel those efforts through other SSOs. See also Communication of the Commission ‘Modernising ICT Standardisation in the EU - The Way Forward’ (3 July 2009) Com (09) 324 final para 1 (noting the emergence of global for a and consortia as “world-leading [Information and Communication Technology] standards development bodies,” and stating that “the EU risks becoming irrelevant in ICT standard setting”).

⁴⁰ ETSI/GA20(94)20; ETSI/GA20(94)22 Rev.1.

Policy and Undertaking was never actually implemented by ETSI, and following the July 1994 vote ETSI was again without an IPR policy.

Finally, at the 21st ETSI General Assembly in November 1994, the ETSI membership approved an IPR policy from which the heightened restrictions described above had been removed, placing ETSI's IPR policy squarely in the main stream of the policies of other major international SSOs.⁴¹ The 1994 policy remains in effect today, with minor changes.

What this history documents is that not merely was FRAND a concept borrowed in its inception from prior use by the ISO, but that the ETSI membership did not pour *new* meaning into FRAND, as all attempts to do so were rejected. Thus, any one who wishes to argue some restrictive or idiosyncratic meaning for an *ETSI* FRAND undertaking, whether based on economic argument or idiosyncrasies of EU or French law, should face a substantial burden of proof as a matter of contract interpretation.

D. Post-1994 ETSI Comment on the FRAND Undertaking

Post-adoption ETSI commentary and actions establish that the ETSI membership has consistently rejected subsequent efforts to alter the balance of interests between IPR owners and licencees by changing the meaning of FRAND.

In 2003, a number of ETSI members promoted an effort to make FRAND less flexible and discretionary by defining or giving examples of practices that would violate FRAND. The ETSI General Assembly authorized the creation of an Ad Hoc Group (AHG) to consider and report on such proposals.⁴² During this process, multiple participants in the ETSI AHG noted their understanding that the meaning of FRAND was a matter of global consensus, not an ETSI question. A representative of Microsoft observed that 'FRAND is a standard principle throughout all SDOs', while a representative of Motorola asserted

⁴¹ ETSI/GA21(94)3; ETSI/GA21(94)39 Rev.2 17-18.

⁴² ETSI/GA42(03)20.

that the ‘FRAND term is identical in ITU policy, Japan SDO, US SDO . . . and this [“FRAND”] is the standard way to express it’.⁴³

But even if FRAND had historically been a global concept, other AHG participants argued that ETSI should nevertheless endorse new specific restrictions under the FRAND umbrella for its own purposes. Proposals included prohibitions on licences that require a royalty-free cross licence, prohibitions on requiring ‘grantbacks’ of rights to improvements, and prohibitions on licencing for certain regions of the globe at rates different from those charged for other regions. But none of these restrictions ever were agreed to, whether by the AHG or by the ETSI General Assembly. Instead, the AHG reported to the ETSI General Assembly that ‘The ETSI IPR Policy does not define FRAND’, and that ‘The ad hoc group was unable to define FRAND conditions’.⁴⁴ Further, it reported that ‘holders of big IPR portfolios’ ‘saw no sense in . . . attempts’ ‘to indirectly define FRAND conditions by giving several examples of bad practices’.⁴⁵ The AHG provided with its report an ‘Annex A’ that contained a list of supposed ‘bad practices’ that had been proposed by those members who advocated additional restrictions, while noting that these had *not* been agreed to by the AHG. The ETSI GA, while accepting the report itself, went farther and deleted this Annex A entirely.⁴⁶

In 2006 another effort to tighten the permissive nature of ‘fair and reasonable’ was made within ETSI, with Nokia and two other manufacturers advocating that ETSI should ‘make changes to the [ETSI] IPR regime and practices’ by ‘introduc[ing] the principles of AGGREGATED REASONABLE TERMS and PROPORTIONALITY into the

⁴³ ETSI/GA/IPR02(03)05 3.

⁴⁴ ETSI/GA42(03)20 8.

⁴⁵ Ibid 9.

⁴⁶ ETSI/GA42(03)20 Rev.1; ETSI/GA42(03)34 4-5.

FRAND definition’.⁴⁷ The proposal was once again intensely controversial within ETSI, and was not adopted by the General Assembly.⁴⁸

Thus, any party contemplating making a FRAND commitment that looks to the ETSI record to understand what such a commitment would mean will find the ETSI membership *declining* to approve restrictions or interpretations identical or analogous to many of those advocated today by the proponents of the restrictive FRAND regimes.

Most recently, ETSI’s ‘Guide on IPRs’, published in 2007, once again specifically disclaims any notion that ETSI does or intends to impose any more specific (and therefore more restrictive) definition of FRAND terms and conditions, stating instead that ‘such commercial terms are a matter for discussion between the IPR holder and the potential licensee, outside of ETSI’ (§2.2), and ‘Specific licensing terms and negotiations are commercial issues between the companies and shall not be addressed within ETSI’ (§4.1).

III. Enforcing FRAND Contractual Commitments

A. Who Decides, and How? The Role of Courts

Business people—those who actually develop and use standards—inhabit a world ruled not by theoretic constructs, but by interests, negotiation, and endless and thoroughly pragmatic compromise. But lawyers, academics, and regulators breathe different air, and have a strong desire for certainty and consistency: What exactly constitute FRAND license terms? What formula or rule may we use to determine whether offered terms are or are not FRAND? Are particular terms for a particular portfolio FRAND, or are they not?

⁴⁷ ETSI/GA/IPRR01(06)08 2-3. For a discussion of this proposal and the negative impact it would have had, see D Geradin, ‘Standardization and Technological Innovation: Some Reflections on Ex-ante Licensing, FRAND, and the Proper Means to Reward Innovators’ (2006) 29 World Competition 511.

⁴⁸ ETSI GA/IPRR06(06)24 Rev.1 14.

This desire for clear rules is understandable, but it cannot be reconciled with the concept of FRAND as adopted and understood by the industry participants who use it. The terms “fair and reasonable” are on their face terms of wide latitude and discretion, and as we have seen, that latitude has been emphasized rather than restricted by commentary from multiple SSOs, and the membership of ETSI has more than once rejected efforts to add more specific and therefore more constricting limitations into the meaning of FRAND.

Given the endless and wide variety of market and technological circumstances in which FRAND commitments are made, it may well be that any less flexible obligation would prove a procrustean bed, potentially discouraging SSO participation, or damaging incentives for beneficial R&D investment. But whether or not this is true as a policy matter, the fact remains that the meaning of FRAND (if construed as a voluntary contract) is such that there *can be* no mathematical rules for determining what is or is not FRAND, because there is not and was not intended to be a precise answer to that question.

If FRAND is intended to provide wide latitude to be resolved by individual parties in individual negotiations (as SSOs have repeatedly stated), two questions naturally arise: (1) Does a FRAND commitment really mean anything at all? and, (2) Who decides what it means? The answer to the first question is “yes”, and the two questions are importantly related. It is only by careful attention to the question of process, the question of “who decides, and how?”, that one can preserve both the intended reality and the intended flexibility of a FRAND commitment.

A legal dispute concerning compliance with a FRAND commitment is most likely to arise on one of two ways. If an essential patent holder and a standard implementer⁴⁹ are unable to agree on licencing terms, the standard implementer, once accused of

⁴⁹ The intended beneficiaries of a FRAND declaration appear to be any parties who wish to perform actions identified in Paragraph 6 of the ETSI IPR Policy with respect to a standard-compliant product. This includes those who wish to ‘manufacture, including the right to make or have made customized components and sub-systems to the licensee’s own design for use in manufacture’. The ability of intended third party beneficiaries of a contract to enforce their rights under that contract is well recognized within the Common Law Tradition, while Civil Law jurisdictions provide comparable enforcement rights under (in the case of France, for example) the doctrine of ‘*stipulation pour autrui*’. Fr. Civil Code Art. 1121.

infringement, may simply wait and assert defensively that the IP owner has failed to satisfy its obligation to offer fair and reasonable terms, or possibly (depending on the procedures available in a given jurisdiction) could seek a determination through a breach of contract action that FRAND terms have not been offered, and an order requiring compliance with that obligation.⁵⁰

As we have seen, however, a court confronting such a claim radically misunderstands the FRAND commitment that the IP owner has made, and misunderstands the court's own role, if it seeks to answer the question 'What is the reasonable royalty for this IPR?' In agreeing to licence on FRAND terms, the IP owner has not agreed to constrain its licencing terms more tightly than the 'range of reasonableness'. Thus, if an offer has been made and refused, then the only contractual question to be adjudicated is whether the terms offered, taking into account all of the specific circumstances between the parties and prevailing market conditions, fall outside the *range* of reasonableness contemplated by the FRAND commitment.

This type of analysis is not foreign to courts. Under US patent law, for example, after a jury has awarded 'reasonable royalty' damages, the appeals court does *not* seek to second guess that decision and substitute its own view of what is 'most reasonable'. Rather, the appeals court engages in a deferential review, asking only whether the jury's award falls outside the range of what could be considered reasonable.⁵¹ Similarly, European courts⁵² use a 'going rate' or benchmarking method to identify a range of reasonable royalty rates that can serve as the basis for the calculation of damages after a finding of patent

⁵⁰ Geradin & Rato (n 7 above) 119.

⁵¹ *Micro Chem., Inc. v Lextron, Inc.* 317 F 3d 1387, 1394 [Fed Cir 2003] [a lower Federal court case] (discussing the differences between the experts' opinions regarding royalty rates and affirming jury's determination as reasonable); *Rite-Hite Corp v Kelley Co., Inc.* 56 F 3d 1538, 1554-55 [Fed. Cir. 1995]. (noting range of possible royalties and affirming lower court's determination of royalty rate as reasonable); *Monsanto Co. v Ralph* 382 F 3d 1374, 1383 [Fed. Cir. 2004] (giving deference to jury's determination of royalty rate based on expert testimony regarding *Georgia-Pacific* factors).

⁵² It must, however, be noted that in Europe, by contrast with the United States, injunctive relief is considered the primary remedy for patent infringement, over and above monetary compensation. Moreover, any damages awarded must only be compensatory in nature and may not have a punitive character. For these reasons, many cases are settled out of court after a finding of patent infringement and the existing case law on the calculation of damages is therefore very sparse.

infringement, and the trial court enjoys significant judicial discretion in its appraisal. Where a decision awarding damages is appealed, the task of the appeals court is not to determine *ex novo* what the ‘reasonable rate’ and resulting damage award is, but only to examine whether the lower court exceeded its considerable discretion in awarding reasonable damages.⁵³

In the case of FRAND licencing, the initial discretion as to what is ‘reasonable’ is entrusted to the negotiating parties or, in the absence of agreement, to the IP owner. If the would-be licensee ‘appeals’ to a court, that court’s task is comparable to that of the appeals court in the US and European patent systems. And, as the party advancing the proposition that specific offered terms fall outside the range of reasonableness and thus do not satisfy the FRAND commitment, one would expect that the burden of proof would rest with the potential implementer. This allocation of burden is perhaps all the more reasonable given that, even with this ‘procedural safeguard’ against aggressive manufacturers, the FRAND commitment represents a very significant concession by the IPR owner as compared to the pre-existing statutory right to exclude inherent in its patent.

In order to determine whether offered terms and conditions pass this ‘range of reasonableness test’, while there can be no mathematical rules, there is no reason that courts should not make use of analytical tools already existing in the law. For instance, while the question of what is ‘reasonable’ continues to be a flexible inquiry, the much-cited *Georgia-Pacific* case identifies a (non-exhaustive) list of 15 specific factors that US courts routinely consider,⁵⁴ and the factors from the *Georgia-Pacific* list have been invoked as useful in other jurisdictions. Interestingly, in one discussion paper created by

⁵³ Cour de Cassation (Ch. Comm.) (France), *Sté Ets Delaplace et Sté Sicma c. Sté Van Der Lely*, 19 February 1991, [1991] *Annales de la Propriété Industrielle*, 4 (noting that the lower court had correctly exercised its judicial discretion in determining the royalty rate serving as the basis for damages after a finding of patent infringement); T Sampson, ‘The “Adjusted Future Free Income Ratio”: A New Methodology for Determining IPR Royalty Rates?’ [2007] 371 *European Intellectual Property Review* 377. See also the example given of a ‘notional’ royalty rate set by the UK Court of Appeal in a copyright case: *Nigel Christopher Blayney (t/a Aardvark Jewellery) v (1) Clogeau St Davids Gold Mines* [2003] F.S.R. 19.

⁵⁴ *Georgia-Pacific Corp v US Plywood Corp*. 318 F Supp 1116 1120-21 [SDNY 1970] [a lower Federal court]. The non-exhaustive list of 15 factors identified by the *Georgia Pacific* court is provided in Annex I.

the ETSI General Assembly Ad Hoc Group in 1993, the reporters (themselves representatives of RIM, not a US corporation) wrote that ‘If one were to read the important “*Georgia-Pacific*” case cited in United States law as a method to determine a “reasonable royalty”, it can readily be seen to be a test that closely parallels the concept of “fair, reasonable, and non-discriminatory” license obligations.’⁵⁵

Of course other important jurisdictions use different language, but we believe that they fundamentally agree that, when a court must determine a royalty rate, it may and should consider the wide range of information that would be relevant to a business decision-maker confronting the same question.⁵⁶ Similarly, we believe that non-US jurisdictions can also find within their own structures examples of the type of deferential review that is appropriate where a court is tasked not to decide what the ‘right’ answer is, but to decide whether terms offered fall entirely outside the *range* of possibility contemplated by the word ‘reasonable’.⁵⁷

Not all of the *Georgia-Pacific* factors will necessarily be relevant to the question of whether proffered licence terms are within the range of reasonableness, and peculiarities of a particular industry or standardised industries in general may properly enter into the equation. Nevertheless, a court may well find that the *Georgia-Pacific* list provides a useful framework or starting point for the inquiry.⁵⁸ Notably, royalties received under prior and existing licences for the very patents being litigated often represent the most

⁵⁵ ETSI GA/IPR02(03)05 1.

⁵⁶ *General Tire & Rubber Co. v Firestone Tyre & Rubber Co.* [1975] F.S.R. 273 (H.L.) (‘[E]vidence may consist of the practice, as regards royalty, in the relevant trade or in analogous trades; perhaps of expert opinion expressed in publications or in the witness box; possibly of the profitability of the invention; and any other factor on which the judge can decide the measure of loss.’); *Cofrinex v Helary*, Paris Court of Appeal 12 July 1977; Sec. 139 Para. 2 German Patent Act (royalty rate of a hypothetical license agreement must be determined in the light of all relevant circumstances).

⁵⁷ *Flint v Lovell* [1935] 1 K.B. 354 (CA) (Greer, L.J.) (explaining that an award of damages is reversible only if ‘the amount awarded [is] an entirely erroneous estimate of the damage to which the plaintiff is entitled’).

⁵⁸ At least one US court has adopted the *Georgia-Pacific* factors to assess the reasonableness of a licencing offer challenged on FRAND grounds. *ESS Tech., Inc. v PC-Tel, Inc.*, No. C-99-20292, 2001 WL 1891713, 3–6 [N.D. Cal. Nov. 28, 2001] [a lower Federal court].

influential factor in determining “reasonableness” under the *Georgia-Pacific* framework, and should arguably have the same role in the context of FRAND litigation.

B. FRAND Commitments and Challenges to Executed Licences

If a would-be licensee refuses offered terms and objects that those terms do not satisfy the patent owner’s agreement to offer FRAND terms and conditions, then the court must undertake the analysis discussed above. However, *after* the parties have negotiated and executed a licence agreement, a complaint by the licensee that the terms of that licence are not FRAND presents very different issues.

While the doctrinal description will differ in different jurisdictions, the point is not complicated: It cannot be proper for a party, aware of rights it is entitled to claim under an existing contract (here, the FRAND commitment), to negotiate and sign a licence, enjoy the benefit of that licence for as long as it pleases, and then collaterally attack the licence as unenforceable (and perhaps claim past damages) on the theory that the licence terms violated the preceding contractual commitment. Within the Common Law tradition, this is a result of the doctrine of integration,⁵⁹ or alternatively of the rule that, even in the absence of complete integration, a collateral contract may not be used to contradict the terms of a subsequent agreement.⁶⁰

An extremely important economic truth underlies this principle. It is widely understood that uncertainty itself imposes an economic cost; accordingly, businesses often use the ‘stabilizing force of contracts’⁶¹ to reduce or eliminate unpredictability. For this reason, companies commonly negotiate long-term licence agreements at fixed royalty rates, giving the two parties predictability as to revenues and costs, respectively. As the US

⁵⁹ *Restatement (Second) of Contracts* (1981) § 213 (‘(1) A binding integrated agreement discharges prior agreements to the extent that it is inconsistent with them. (2) A binding completely integrated agreement discharges prior agreements to the extent that they are within its scope. (3) An integrated agreement that is not binding or that is voidable and avoided does not discharge a prior agreement. But an integrated agreement, even though not binding, may be effective to render inoperative a term which would have been part of the agreement if it had not been integrated.’).

⁶⁰ RA Lord 11 *Williston on Contracts* (4th ed 2009) § 33:26 (‘[E]vidence of a collateral agreement is not barred by the parol evidence rule if such evidence does not contradict the written contract.’).

⁶¹ *NRG Power Marketing v Main Public Utilities* 558 US ___, 130 S. Ct. 693, 696 [2010].

Supreme Court has explained, ‘Markets are not perfect, and one of the reasons that parties enter into . . . contracts is precisely to hedge against the volatility that market imperfections produce.’⁶² Private parties are of course free to negotiate short-term licence agreements, or agreements under which the royalty rate is subject to frequent re-negotiation, or periodic modification based on some external criteria. But they don’t do this, precisely because predictability is extremely important to many aspects of the conduct of a business, including, eg, decisions about investments in research and development. As a result, uncertainty relating to ‘contract sanctity can have a chilling effect on investments and a seller’s willingness to enter into long-term contracts and this, in turn, can harm customers in the long run.’⁶³ Yet, a rule that would permit a licensee to collaterally attack a licence agreement—potentially years after the fact—on the theory that its terms violate a prior FRAND commitment, would make it *impossible* for licencing parties to negotiate for long-term predictability.

C. What Is ‘Fair and Reasonable’ Will Be Higher After Adjudication of Infringement and Validity

US courts and commentators routinely recognize that a ‘reasonable royalty’ will be higher after a patent has been held valid and infringed in court than it was before that adjudication.⁶⁴ Providing empirical and theoretical support for this judicial view, Lemley and Shapiro have demonstrated that nearly half of patents litigated to a final determination in the US are held invalid, while a significant number of those held valid

⁶² *Morgan Stanley Capital Group, Inc. v Public Utility District 1 of Snohomush County* 128 S Ct 2733, 2746 [2008].

⁶³ Ibid 2749 (quoting *Market Based Rates*, para. 6, 72 Fed. Reg. 33906-33907).

⁶⁴ *Maxwell v J. Baker, Inc.* 86 F 3d 1098, 1109-10 [Fed. Cir. 1996] [a lower Federal court] ([T]hat an infringer had to be ordered by a court to pay damages, rather than agreeing to a reasonable royalty, is also relevant’ to ‘an amount sufficient to adequately compensate the patentee for the infringement’); *Stickle v Heublein, Inc.* 716 F 2d 1550, 1563 [Fed. Cir. 1983]; *Endress & Hauser, Inc. v Hawk Measurement Sys. Pty. Ltd.* 892 F. Supp 1123, 1130 [S.D. Ind. 1995] (‘Although courts employ the ‘willing licensor/willing licensee’ model as the basis for determining a reasonable royalty, they do so with the understanding that a ‘reasonable’ royalty after infringement is likely to be higher than that arrived at between truly willing patent owners and licensees.’); VE O’Brien, ‘Economics & Key Patent Damages Cases’ (2000) 9 University of Baltimore Intellectual Property 1, 19 & 20 n.70 (observing that ‘the hypothetical negotiation already has a built-in bias toward a royalty rate that is higher than those observed in practice’ and that the Federal Circuit often sustains awards ‘based on a royalty several times that observed in the real world’).

are held to be not infringed.⁶⁵ They report in a later paper that average ‘reasonable royalty’ damage awards set rates more than *double* estimated average negotiated patent royalties, and conclude that this difference is at least in part attributable to the uncertainty surrounding the strength and value of untested patents.⁶⁶

Shapiro points out that, in light of these facts, what is ‘fair and reasonable’ in the context of an offer to licence patents that have not been tested in litigation should be something lower than would be awarded after adjudication of infringement and validity, because of the uncertain strength of the patents.⁶⁷ But the reverse is equally true: After a patent has been tested and the uncertainty eliminated, then what is ‘fair and reasonable’ no longer needs to include any ‘uncertainty discount’, and should be substantially *higher* than would have been the case pre-litigation.

This ‘that was then, this is now’ aspect of FRAND is not only theoretically correct, it stands as a critically important deterrent to excessive litigation. Lemley and Shapiro have also noted that, in the ordinary licencing context, the risk of injunction and complete exclusion from the market motivates prospective infringers to obtain a licence instead of litigating.⁶⁸ However, if an infringer of essential patents is entitled to the *same* terms after unsuccessful litigation as he was entitled to before, then this incentive disappears; the infringer will have strong incentives to litigate even a weak case in the hopes of ‘getting lucky’ with an invalidity or non-infringement ruling, and will face no downside risk beyond attorneys’ fees. The former Chief Judge of the Federal Circuit has noted exactly this incentive problem in the context of *Georgia-Pacific* royalty determinations, explaining that an infringer who, after unsuccessful litigation, ‘could count on paying only the normal, routine royalty non-infringers might have paid . . . would be in a “heads-

⁶⁵ MA Lemley & C Shapiro, ‘Probabilistic Patents’ [2005] *Journal of Economic Perspectives* 75, 80; Lemley & Shapiro (n 1 above) 2019-2020.

⁶⁶ Lemley & Shapiro (n 1 above) 2032-2033.

⁶⁷ J Farrell (n 6 above) 637 n.134 (citing to and discussing Shapiro).

⁶⁸ Lemley & Shapiro (n 57 above) 75, 80.

I-win, tails-you-lose” position’.⁶⁹ Thus, a static definition of ‘fair and reasonable’ unaffected by litigation would expose FRAND declarants to a much greater risk of non-meritorious litigation than faces parties unconstrained by FRAND. It is unlikely that any standards-setting organization intended, by requiring FRAND declarations, to create this perverse incentive to attack rather than to pay for the intellectual property of its members.

D. ‘Durable FRAND’: Can FRAND Commitments Survive the Sale of Patents?

Some commentators have raised the spectre that to acknowledge the contractual nature of a FRAND commitment could enable such a commitment once made to be evaded by selling the patent to a third party. However, despite decades of SSO operation in reliance on contractual FRAND commitments, the only three instances we are aware of in which a purchaser of patents has claimed not to be bound by a prior FRAND (or similar) commitment are (a) the position taken but more recently abandoned by IPRCom in connection with patents purchased from Bosch,⁷⁰ (b) N-Data’s attempt to ignore a prior owner’s agreement to license certain essential patents for \$1000,⁷¹ and (c) an effort by Funai Electronic Co. to charge “non-FRAND” royalties for patents purchased from Thomson Licensing⁷².

None of these efforts appear to have succeeded, and more than one theory provides protection against ‘FRAND evasion’ while respecting the contractual nature of a FRAND

⁶⁹ *Panduit Corp v Stahl Bros. Fibre Works* 575 F 2d 1152, 1158 [6th Cir 1978] [a lower Federal court] (Markey, J.) (quoting *Troxel Mfg. Co. v Schwinn Bicycle Co.* 465 F 2d 1253, 1257 [6th Cir 1972]).

⁷⁰ See ‘Antitrust: Commission welcomes IPRCom’s public FRAND declaration’ (European Commission welcoming ‘the public declaration by German IP licensing company IPRCom, following discussions with the Commission, that it is ready to take over Bosch’s previous commitment to grant irrevocable licenses on fair, reasonable and non-discriminatory (FRAND) terms to patents held by IPRCom which are essential for various standards set by the European Telecommunications Standard Institute (ETSI) and Universal Mobile Telecommunications System (UMTS)’), MEMO/09/549, Brussels (Dec. 10, 2009) <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/549&format=HTML&aged=0&language=EN> accessed on Mar. 7, 2010.

⁷¹ See *Re NEGOTIATED DATA SOLUTIONS LLC*, Complaint, No. C-4234 para 28 [Sept. 22 2008] <http://www.ftc.gov/os/caselist/0510094/080923ndscomplaint.pdf> accessed on May 30, 2010 (describing demands for ‘licensing fees [that] represent a substantial increase over [N-Data’s predecessor’s] commitment to license the . . . technology for a one-time fee of one thousand dollars’).

⁷² *Vizio Inc. v Funai Elec. Co.* No. CV-09-0174, 2010 U.S. Dist. LEXIS 30850 [C.D. Cal. Feb. 3, 2010] [a lower Federal court case].

commitment. First, an argument can be made that, given the on-line publication of FRAND declarations by major SSOs and the sophistication of participants in such industries, a purchaser of a patent which has been made subject to a FRAND declaration takes with either actual or constructive notice of that declaration and can be presumed to have negotiated a price taking that ‘encumbrance’ into account, and should therefore be equitably estopped from asserting the patent in a manner inconsistent with that undertaking. This was essentially the result reached by the FTC in the N-Data case.⁷³ Second, the court in *Vizio v. Funai* held that an allegation that Thomson sold patents to Funai as part of an *intentional* ‘scheme to circumvent Thomson’s FRAND commitment’ stated a claim for unlawful conspiracy under Section 1 of the Sherman Act.⁷⁴ Of course, the details of such approaches must be worked out within the legal doctrines of particular jurisdictions.

The draft Horizontal Cooperation Guidelines provide that, in order to fall outside the scope of the prohibition contained in Article 101(1) of the Treaty on the Functioning of the European Union (which prohibits anti-competitive agreements), all SSOs should require that members (who under the Guidelines’ proposed structure would be subject to mandatory FRAND obligations) ‘take all necessary measures to ensure that any [entity] to which the IPR owner transfers its IPR . . . is bound by that commitment’.⁷⁵ Given the experience and theory reviewed above, this requirement would possibly be harmless, but certainly addresses a ‘problem’ which thus far has been solvable with existing legal tools.

IV. Non-Discrimination: The Other Half of FRAND

We have focused in this paper on the ‘fair and reasonable’ component of FRAND, because the meaning of ‘fair and reasonable’ has attracted far more controversy than the meaning of ‘non-discriminatory’. But important questions remain in this area as well. Most significantly, one may ask whether the ‘ND’ in FRAND really adds any obligation

⁷³ Re NEGOTIATED DATA SOLUTIONS LLC, Order and Decision, No. C-4234 [Sept. 22 2008] <http://www.ftc.gov/os/caselist/0510094/080923ndsdo.pdf>> accessed on Mar. 7, 2010.

⁷⁴ *Vizio Inc. v Funai Elec. Co.* 2010 U.S. Dist. LEXIS 30850, 17-19.

⁷⁵ Horizontal Cooperation Guidelines para 286.

as a practical matter, or whether it is instead a platitude that imposes no obligations over and above what the competition law of most jurisdictions – such as the Robinson Patman Act in the United States or Article 102(c) of the Treaty on the Functioning of the European Union – would require in any case. Or, conversely, one may ask whether the ‘ND’ imposes the same sort of obligations that are created by the type of ‘Most Favored Licensee’ (MFL) clause that parties commonly include in licenses by agreement.

Perhaps because it has not been at the center of much controversy, we have found far less documentary history in the ETSI archives relating to the meaning ‘non-discriminatory’ than exists with regard to the meaning of ‘fair and reasonable’, but there is enough to offer a few observations about the ‘intent of the parties’ with respect to ‘non-discriminatory’ in the ETSI context.

A. The ETSI IPR Policy Was In Significant Part Designed to be ‘Non-Discriminatory’ as to Nationality and Membership-Based Discrimination.

It is clear that from the start, one class of ‘discrimination’ about which ETSI and stakeholders were concerned was classic protectionist discrimination, which might erect ‘barriers to trade’,⁷⁶ and even violate the then called ‘GATT obligations’ of the European Community member states.⁷⁷ Emphasis was also put on the need to ensure that license terms did not discriminate in favour of ETSI members and against non-members.⁷⁸

⁷⁶ See ETSI/GA11(91)8, an agreement between ETSI and the Standards Institution of Israel approved at the 11th ETSI General Assembly in 1991.

⁷⁷ See ETSI/GA12(92)TD 16 3 (expressing concerns that ETSI standards ‘must in principle be made available on a national treatment basis in order to meet the Community’s international obligations’); ETSI/GA12(92)TD 3 2 (ANSI submission expressing concern that ‘ETSI members have the apparent ability to decline to license IPRs to certain manufacturers . . . based on the manufacturer’s country of residence or the origin of the manufactured goods’); ETSI/IPR/GA(92)TD 5 3 (Statement of Commission Representative emphasizing that, under the Technical Barriers to Trade Agreement, ‘the parties to that Agreement are entitled to treatment equal to that given to Community nationals and to equal treatment as between one another.’).

⁷⁸ See ETSI/GA12(92)TD 19 5 (Submission of the Chairman of the ETSI Technical Assembly, asserting that, under the then-proposed policy, ‘In particular members and non members within the Community are treated the same.’); ETSI/IPR/GA(92)TD5 3 (Statement of the Commission of the European Communities (‘CEC’) noting that ‘there is the question of the position of non-ETSI members’, and asserting that ‘standards, including IPR’s, must be available to all potential users within the Community on equivalent or comparable terms . . .’); ETSI/GA14(92)TD 20 3 (Letter of the CEC to ETSI stating, ‘The Commission

These goals were stated repeatedly during the development of the initial ETSI IPR policy, and attracted no significant disagreement then or in later disputes about IPR policy within ETSI, so far as we find in the records. It is also the case that we do not find any sign in these records – nor are we aware from any other source – of any later incident in which an ETSI member was alleged to have discriminated in its licensing terms based on the nationality of the licensee, or based on its status as a non-member of ETSI. Whether credit belongs to the ‘non-discriminatory’ clause of the FRAND commitment or to market forces is an open question—although one suspects the latter, since where rules and market forces are at odds, one would expect to find telltale signs of ongoing controversy and ‘cheating’. Be that as it may, in the case of ETSI standards, these leading goals of the ‘non-discrimination’ requirement appear to have been achieved.

B. ‘Non-Discriminatory’ Is Not the Equivalent of a ‘Most Favoured Licensee’ Guarantee.

Interestingly, the first IPR Policy adopted by ETSI – the 1993 policy adopted but then withdrawn amidst controversy, as reviewed previously (in section II(C), above) – went beyond the ‘non-discriminatory’ requirement inherited from the ISO precedent by including, as part of an ‘Undertaking’ that each member was to sign, what was in essence a rather straight-forward ‘MFL’ requirement, requiring that licenses (at least licenses to other parties to the Undertaking)

‘include a clause requiring the licensor to *promptly notify* a licensee of any license granted by the it to a third party for the same IPRs under comparable circumstances giving rise to terms and conditions that are clearly more favourable, in their entirety, than those granted to the licensee and *allowing the licensee to require replacement of the terms and conditions of its license, in their entirety, either with those of the third party license, or with such other terms and conditions as the parties may agree.*’⁷⁹

considers that non-members of ETSI should not receive less favourable terms merely because they are not members.’).

⁷⁹ ‘ETSI Intellectual property Rights Undertaking’, ETSI/GA15(93)TD 25 para 3.1 (emphasis added).

However, the IPR policy that was finally adopted and made effective in 1994 did not include the undertaking, nor anything similar to the MFL requirement quoted above, and we find no suggestion in the records of discussions of IPR policy within ETSI, at any time after the rescission of the 1993 policy, that any member argued that the ‘notice’ and ‘substitution of terms’ rights that had been contained in the Undertaking remained implicit in the ‘non-discriminatory’ requirement. Given this history, we conclude that any attempt to equate the ‘non-discriminatory’ component of an ETSI FRAND commitment with thoroughgoing ‘Most Favoured Licensee’ obligations would be mistaken as a matter of intent-based contract interpretation.

C. ‘Non-Discriminatory’ Does Not Require Identical Terms.

In fact, when the ETSI membership turned to developing the replacement policy that was ultimately adopted in 1994, the conversation turned in quite a different direction. Where the Undertaking had specified that similarly situated licensees had a right to *identical* terms, the final text of the “Common Objective” document annexed to the final report of the Special Committee on IPR stated, under the heading ‘Concerns about most favoured licensee provision,’ that while ‘License terms and conditions should be non-discriminatory,’ ‘this does not necessarily imply identical terms’. Instead, under the heading ‘Commercial freedom’, the document asserted, ‘Licensing terms and conditions should allow normal business practices for ETSI members. ETSI should not interfere in licensing negotiations.’⁸⁰ Indeed, in subsequent discussion in which the members of the Special Committee were divided into four groups to report views on various issues, three out of the four groups reported agreement that non-discriminatory ‘does not necessarily imply identical terms’, and the fourth group did not comment on that topic.⁸¹

The sum of these observations is not dramatic. On the one hand, the ‘non-discriminatory’ component of FRAND is more than merely an affirmation of national competition law, because such law may indeed permit outright discrimination in certain

⁸⁰ ETSI/GA 20(94)2 (SC Final Report), ANNEX XII.

⁸¹ ETSI/GA 20(94)2 (SC Final Report), ANNEX XVIII, at 4-5.

circumstances – for example, in favour of exclusive or preferred distributors.⁸² On the other hand, in the case of ETSI at least⁸³ ‘ND’ clearly means less than a Most Favoured Licensee clause, with an MFL clause having been explicitly repealed, and comment at the time of adoption of the present policy signalling an intention to leave members wide flexibility in agreeing to particular terms with particular licensees depending on the commercial circumstances.

Conclusion

The effort to conflate a contractual FRAND commitment with either idealized economic theory or the competition law of any jurisdiction is ill-conceived. In short, a FRAND commitment and the limitations that competition law may impose on intellectual property rights are simply two separate things, and intellectual clarity requires that each be considered in its own right, and according to the analytical methods appropriate to it.

Our research shows that, if a FRAND commitment is taken seriously as a contract – as it should be – then efforts to look to FRAND as a source of cumulative royalty caps, particular formulas for calculating or apportioning royalties, or limitations on remedies against unlicensed infringers are not only without basis, but are contradicted by the ordinary methods of contract interpretation.

⁸² See, e.g., *Volvo Trucks N. Am., Inc. v. Reeder-Simco GMC, Inc.*, 546 U.S. 164 176 [2006] (approving preferred dealership discounts); *E & L Consulting, Ltd. v. Doman Indus. Ltd.*, 472 F.3d 23 29 [2d Cir. 2006] [a lower Federal court case] (‘It is not a violation of the antitrust laws, without a showing of actual adverse effect on competition market-wide, for a manufacturer to . . . appoint an exclusive distributor.’ (internal quotation marks and citation omitted)).

⁸³ However, in this respect the ETSI reading of ‘non-discriminatory’ appears to be consistent with that of ANSI, which has said explicitly that “RAND does not mean that each licensee will receive exactly the same set of terms and conditions because other considerations (such as reciprocal cross-licensing) may be a factor.” GSC11/IPRWG(06)10, at p.7.

Annex I

The *Georgia-Pacific* court listed the following as ‘the factors *mutatis mutandis* seemingly more pertinent to the issue’ of what royalty is reasonable:

- ‘1. The royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty.
2. The rates paid by the licensee for the use of other patents comparable to the patent in suit.
3. The nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold.
4. The licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention or by granting licenses under special conditions designed to preserve that monopoly.
5. The commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter.
6. The effect of selling the patented specialty in promoting sales of other products of the licensee; that existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sales.
7. The duration of the patent and the term of the license.
8. The established profitability of the product made under the patent; its commercial success; and its current popularity.
9. The utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results.
10. The nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention.
11. The extent to which the infringer has made use of the invention; and any evidence probative of the value of that use.

12. The portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions.

13. The portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer.

14. The opinion testimony of qualified experts.

15. The amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee- who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention- would have been willing to pay as a royalty and yet be able to make a reasonable profit and which amount would have been acceptable by a prudent patentee who was willing to grant a license.’¹

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¹ *Georgia-Pacific Corp v US Plywood Corp*. 318 F Supp 1116 1120-21 [SDNY 1970] [a lower Federal court].