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**GLOBAL RATE-SETTING:
A SOLUTION FOR STANDARDS-ESSENTIAL PATENTS?**

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**GLOBAL RATE-SETTING:
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ABSTRACT

The commitment to license patents that are essential to technical interoperability standards on terms that are fair, reasonable and non-discriminatory (FRAND) is a fundamental mechanism that enables standards to be developed collaboratively by groups of competitors. Yet disagreements over FRAND royalty rates continue to bedevil participants in global technology markets and litigation regarding compliance with FRAND commitments has led an increasing number of courts around the world to adjudicate FRAND royalty rates using very different methodologies and doctrinal approaches. The issues affecting the FRAND licensing system can be summarized as deficiencies in transparency, consistency and comprehensiveness. Together, these issues reduce the overall fairness and accuracy of the system and result in excess administrative and transactional costs.

This article, for the first time, lays out a roadmap for the establishment of an expert FRAND rate-setting tribunal that promotes the tripartite goals of transparency, consistency and comprehensiveness. This FRAND Tribunal is modelled on the U.S. Copyright Royalty Board and similar rate-setting agencies, though it is envisioned not as a governmental body, but an international non-governmental organization. The proposal calls for the modification of SDO policies either to mandate or make available the resolution of FRAND royalty disputes through this rate-setting mechanism. The FRAND Tribunal will collect all available evidence regarding the patented and unpatented technologies involved in a particular standard, determine an aggregate (top-down) royalty rate for the standard as a whole, and apportion royalties among all holders of essential patents. It is hoped that such a tribunal will bring greater predictability and stability to the technology development ecosystem while reducing inefficient litigation.

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INTRODUCTION

Technical interoperability standards lie at the heart of some of the largest litigation battles and corporate transactions in recent years. Samsung's patent infringement suits against Apple in the U.S., EU, Korea, Japan and elsewhere – fought at the height of the global smart phone wars – turned on the iPhone's use of patented 3G and 4G wireless telecommunications technology.¹ Recent takeover battles among Intel, Broadcom, Qualcomm and NXP revolve around dominance in the market for standardized networking and communications chips.²

These standards, which range from simple physical compatibility features such as the 3-pronged electrical plug to hugely complex wireless telecommunications protocols, enable products manufactured by different vendors to interface seamlessly and automatically with one another. Such standards, and the widespread product interoperability that they enable, can promote innovation, reduce development costs, increase consumer utility and produce significant market efficiencies known as “network effects.”³ The importance of standards continues to grow in today's interconnected global economy. Efforts are now under way to develop future generations of mobile broadband communications protocols known as “5G” and “6G”, as well as standards that will link a vast array of devices embedded in personal accessories, medical devices, vehicles, home appliances and the built environment: the so-called “Internet of Things.”

Most of the thousands of technical standards implemented in products today – from Wi-Fi to USB to HTML -- were developed by firms collaborating within industry associations known as standards-development organizations (SDOs).⁴ For decades, SDOs have been aware that all or portions of standards may be patented by the firms that cooperate to develop them.⁵ Many key interoperability standards, particularly in the telecommunications and computing industries, are thus covered by hundreds or thousands of patents.⁶ In order to address concerns about the

¹ See, e.g., Hitomi Iwase & Takahiro Sugauchi, *Apple v. Samsung: Enforcing a Standards-Essential Patent After a FRAND Declaration*, IP VALUE 2014 102 (2014).

² See, e.g., Danny Crichton, *The Incredible Multi-Dimension Chess of Qualcomm v. Broadcom*, TECHCRUNCH, Mar. 10, 2018, <https://techcrunch.com/2018/03/10/qualcomm-vs-broadcom/> (accessed July 13, 2018).

³ See CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 45–46 (1999), U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 33 (2007) [hereinafter DOJ-FTC ANTITRUST & IPR].

⁴ SDOs encompass a wide range of organizations, from semi-official international bodies (e.g., the International Organization for Standardisation (ISO) and European Telecommunications Standards Institute (ETSI)) to large private organizations (e.g., the IEEE Standards Association and Internet Engineering Task Force (IETF)), to smaller groups often referred to as “consortia” that focus on one or a handful of related standards (e.g., the HDMI Forum and Bluetooth Special Interest Group). See generally Brad Biddle, *No Standard for Standards: Understanding the ICT Standards-Development Ecosystem* in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 2 (Jorge L. Contreras, ed. 2017). The term SDO is often used interchangeably with the term SSO (standard setting organization). While fine distinctions can be made, for purposes of this article I treat these terms as synonymous.

⁵ In general, SDOs claim no patent rights in the standards developed under their auspices.

⁶ See Justus Baron & Tim Pohlmann, *Mapping Standards to Patents Using Declarations of Declared Standard-Essential Patents and Systems of Technological Classification* at x, Northwestern Law & Econ. Research Paper 18-10 (2018); KNUT BLIND ET AL., STUDY ON THE INTERPLAY BETWEEN STANDARDS AND INTELLECTUAL PROPERTY RIGHTS (IPRS), FINAL REPORT 62 (2011).

inordinate leverage that holders of such patents may exert after a standard is widely adopted (so-called patent “hold-up”),⁷ most SDOs have adopted policies requiring their participants to license patents that are “essential” to their standards (standards-essential patents or SEPs) on terms that are royalty-free or that bear royalties that are “fair, reasonable and non-discriminatory” (FRAND).⁸ It is widely understood that patent royalty rates that are “fair” and “reasonable” should reflect the value that a patented technology contributes to the product into which it is incorporated (sometimes referred to as the “incremental value” of the patented technology).⁹

Commitments to license SEPs at rates that are no higher than FRAND have been recognized as important to standardization by antitrust and competition authorities around the world.¹⁰ The need for such commitments is reflected in the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement¹¹ and the SDO accreditation requirements of the American National Standards Institute (ANSI).¹² As a result of these and other factors, most SDOs around the world require some form of licensing commitment for patents that are necessary to implement their standards, often on terms that are FRAND.¹³

But despite the widespread imposition of FRAND commitments by SDOs, there is little consensus regarding the methodology for determining what royalty rates should be considered

⁷ See, generally, Norman V. Siebrasse, *Holdup, Holdout and Royalty Stacking: A Review of the Literature* in PATENT REMEDIES AND COMPLEX PRODUCTS: TOWARD A GLOBAL CONSENSUS, Ch. 7 (C. Bradford Biddle et al, eds., 2019, forthcoming).

⁸ SDOs that require royalty-free licensing of SEPs generally also require that non-royalty terms be fair, reasonable and non-discriminatory. However, for purposes of this article, I use the term FRAND to refer to royalty-bearing licenses. In addition, following customary practice, the terms FRAND and RAND (reasonable and nondiscriminatory) are used interchangeably. See U.S. DEP’T OF JUSTICE & U.S. PATENT & TRADEMARK OFFICE, POLICY STATEMENT ON REMEDIES FOR STANDARDS-ESSENTIAL PATENTS SUBJECT TO VOLUNTARY F/RAND COMMITMENTS 1 n.2 (2013) [hereinafter DOJ/PTO POLICY STATEMENT] (noting equivalence of these terms).

⁹ See, e.g., NATIONAL RESEARCH COUNCIL (NRC), PATENT CHALLENGES FOR STANDARD-SETTING IN THE GLOBAL ECONOMY 61 (Keith Maskus & Stephen A. Merrill eds., 2013) [hereinafter NRC REPORT] (“Competition authorities and a number of scholars have endorsed the principle that a “fair and reasonable” royalty should reflect its incremental value relative to the next-best alternative assessed before firms and consumers make investments specific to the technology” (citing U.S. FTC and European Comm’n)).

¹⁰ See Jorge L. Contreras, *Origins of FRAND Licensing Commitments in the United States and Europe*, in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 9 (Jorge L. Contreras, ed., 2017).

¹¹ World Trade Org., Agreement on Technical Barriers to Trade (1995).

¹² AM. NAT’L STANDARDS INST., ANSI ESSENTIAL REQUIREMENTS: DUE PROCESS REQUIREMENTS FOR AMERICAN NATIONAL STANDARDS § 3.1.1, at 10–11 (2018) (an SDO must conform to the ANSI Essential Requirements in order to be recognized as a developer of American National Standards).

¹³ See Baron & Pohlmann, *supra* note 6, at Table 5; Rudi Bekkers & Andrew Updegrave, A Study of IPR Policies and Practices of a Representative Group of Standards Setting Organizations Worldwide 89 tbl.13 (2012), http://sites.nationalacademies.org/xpeditio/groups/pgasite/documents/webpage/pga_072197.pdf (of ten major SDOs studied, eight specify FRAND licensing as an option in their IPR policies); Brad Biddle, Andrew White & Sean Woods, *How Many Standards in a Laptop? (And Other Empirical Questions)*, 2010 INT’L TELECOMM. UNION SEC. TELECOMM. STANDARDIZATION, KALEIDOSCOPE ACAD. CONF. PROC. at 3 & fig. 2 (75% of the laptop computer standards studied were subject to a RAND commitment and 22% were royalty-free); Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CALIF. L. REV. 1889, 1906 (2002) (of 36 SDO policies studied, 29 required, and 3 encouraged, FRAND licensing).

“fair” and “reasonable” in any given instance.¹⁴ No SDO defines, even broadly, how to calculate royalty rates that are FRAND, and many SDOs expressly disclaim any role in establishing, interpreting, or adjudicating FRAND royalty rates.¹⁵ Though some commentators (including the author) have argued that SDOs can and should play a greater role in defining the nature and scope of their FRAND commitments,¹⁶ concerns arising from antitrust law, complexity, efficiency, cost and member pressure have led some SDOs to prohibit outright any discussion of royalties and other licensing terms at SDO-sponsored activities.¹⁷

With little guidance from SDOs and regulatory authorities, SEP holders and manufacturers of standardized products are left to determine FRAND royalty rates in private negotiations. But given the complexity of these transactions, the large sums at stake, and the legal uncertainty that pervades this area, an increasing number of disputes have arisen regarding the appropriate level of FRAND royalty rates. It is now routine for manufacturers of standardized products to claim that SEP holders seek royalties that are in excess of FRAND limits and are thereby violating their FRAND commitments. By the same token, it has become commonplace for SEP holders to claim that manufacturers are dragging their feet in negotiations, intentionally stalling so as to avoid paying royalties that are fair and reasonable (a practice referred to as “holdout” or “reverse hold-up”). In both cases, courts around the world have been called upon to adjudicate the level of royalties that

¹⁴ See, e.g., Kai-Uwe Kühn, Fiona Scott Morton & Howard Shelanski, *Standard Setting Organizations Can Help Solve the Standard Essential Patents Licensing Problem*, 3 CPI ANTITRUST CHRON. 1, 16 (2013) (“SSOs typically specify very little as to the meaning of ‘fair’ or ‘reasonable’”); FED. TRADE COMM’N, *THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION* 192 (2011) (“the terms RAND and FRAND are vague and ill-defined”); Richard J. Gilbert, *Deal or No Deal? Licensing Negotiations in Standard-Setting Organizations*, 77 ANTITRUST L.J. 855, 859 (2011) (noting that the “fair and reasonable” component of FRAND is “often inherently ambiguous”); Doug Lichtman, *Understanding the RAND Commitment*, 47 HOUS. L. REV. 1023, 1031 (2010) (“It is something of an outrage that the language of the RAND commitment offers so little guidance as to its proper interpretation”); Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 IND. L. REV. 351, 357 (2007) (reviewing earlier literature).

¹⁵ See, e.g., IEEE Standards Assn., IEEE-SA Standards Board Bylaws § 6.2 (2016), http://standards.ieee.org/develop/policies/bylaws/sb_bylaws.pdf [hereinafter IEEE Policy] (“The IEEE is not responsible for . . . determining whether any licensing terms or conditions . . . are reasonable or non-discriminatory”); Scott O. Bradner & Jorge L. Contreras, *Intellectual Property Rights in IETF Technology*, RFC 8979, § 4.1 (2017), (“[IETF] will not make any explicit determination that the assurance of reasonable and non-discriminatory terms or any other terms . . . has been fulfilled in practice”).

¹⁶ See, e.g., Jorge L. Contreras, *Aggregated Royalties for Top-Down FRAND Determinations: Revisiting ‘Joint Negotiation’*, 62 ANTITRUST BULL. 690 (2017); Stanley M. Besen, *Why Royalties for Standard Essential Patents Should Not Be Set by the Courts*, 15 CHI-KENT J. INTELL. PROP. 1 (2016) (arguing that SDOs, rather than courts, are best-equipped to make FRAND royalty determinations), Kühn, Scott Morton & Shelanski, *supra* note 14, at 3 (“SSOs can substantially reduce the problem of hold-up and litigation in this sector by reforming their IPR policies”), Jorge L. Contreras, *Fixing FRAND: A Pseudo-Pool Approach to Standards-Based Patent Licensing*, 79 ANTITRUST L.J. 47, 51-52 (2013) (proposing mechanism for SDO determination of FRAND royalty rates).

¹⁷ See, e.g., IEEE Standards Assn., IEEE-SA Standards Board Operations Manual § 5.3.10.2 (2015) (“No discussions or other communications regarding the following topics shall occur during . . . duly authorized IEEE-SA standards-development technical activities: . . . the essentiality, interpretation, or validity of patent claims; specific patent license terms or other intellectual property rights. . .”). See also Contreras, *Fixing FRAND*, *supra* note 16, at 51-52 (discussing reasons for prohibitions), Lemley, *SSOs*, *supra* note 13, at 1965 (observing that such restrictions are often intended to shield SDOs from antitrust liability).

SEP holders can validly charge.¹⁸ Not surprisingly, these disputes are costly, unpredictable and disruptive to the market.

The above considerations can be distilled into three key deficiencies that most directly impact the orderly and predictable determination of FRAND royalty rates: lack of *transparency*, lack of *consistency*, and lack of *comprehensiveness*.

Transparency. FRAND royalty rates are, by definition, supposed to be non-discriminatory, meaning that, at least with respect to similarly-situated licensees, rates should be comparable if not identical.¹⁹ But because FRAND royalty negotiations, and the resulting license agreements, are typically subject to strict confidentiality obligations, manufacturers have little visibility into the rates offered by SEP holders to others.²⁰ Accordingly, aside from a few published judicial opinions, there is a paucity of publicly-available information regarding FRAND royalty rates. Thus, there are few means short of litigation by which royalty rates offered by a particular SEP holder to its licensees can be compared or to validate whether a SEP holder has complied with its obligation to grant licenses on terms that are non-discriminatory.²¹

Consistency. As the number of courts deciding FRAND rates has increased, so has disagreement over the methodology that should be used in such calculations. As discussed in Section I.A, below, there are more than a dozen points of serious divergence among courts and other adjudicatory bodies with respect to the method of calculating FRAND royalty rates. As Jason Bartlett and I have shown, methods for calculating FRAND royalties, even for patents covering the same standard, can vary dramatically from court to court and case to case.²² This degree of judicial discord, coupled with the lack of transparency noted above, creates uncertainty in the marketplace, as there is no definitive benchmark that parties, particularly new market entrants, can use to determine whether the rates being offered in private negotiations are reasonable or not.²³

¹⁸ See Chryssoula Pentheroudakis & Justus A. Baron, *Licensing Terms of Standard Essential Patents: A Comprehensive Analysis of Cases*. JRC Science for Policy Report EUR 28302 (2017) (cataloging FRAND litigation around the world). In addition to the calculation of FRAND royalties, several other types of claims have been raised in the context of FRAND commitments including: whether a SEP holder has acted in good faith, whether particular patents are “essential” to a standard, whether a SEP holder may seek injunctive relief against an infringer, and whether there is antitrust liability on a patent holder that fails to comply with their FRAND commitments. *See id.* (cataloging types of claims).

¹⁹ See note 82, *infra*, and accompanying text (discussing non-discrimination).

²⁰ See Mark R. Patterson, *Confidentiality in Patent Dispute Resolution: Antitrust Implications*, 93 WASH. L. REV. 827 (2018) (raising antitrust concerns arising from lack of transparency in FRAND licensing transactions); Jorge L. Contreras & David L. Newman, *Developing a Framework for Arbitrating Standards-Essential Patent Disputes*, 2014 J. DISP. RESOL. 23, x (identifying issues arising from confidentiality of royalty rates).

²¹ See Gilbert, *supra* note 14, at x (lack of transparency in FRAND licensing transactions makes monitoring of compliance with non-discrimination obligations difficult).

²² See Jason R. Bartlett & Jorge L. Contreras, *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things*, 36 REV. LITIGATION 285, 288 (2017) (discrepancies in calculation of royalties for SEPs covering Wi-Fi); Fei Deng, Gregory K. Leonard & Mario A. Lopez, *Comparative Analysis of Court-Determined FRAND Royalty Rates*, 32 ANTITRUST, Issue 3, p. 47 (2018) (comparing two U.S. courts’ different approaches to FRAND royalties for the same Ericsson patent portfolio covering 2G, 3G and 4G wireless telecommunications standards).

²³ See, e.g., Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1163-64 (2013) (“competition between jurisdictions ... creates comity concerns” as well as other issues). See, generally, Theodore Eisenberg & Geoffrey P. Miller, *The Flight to New York: An Empirical Study of Choice of Law and Choice of Forum Clauses in Publicly-Held Companies’*

What's more, as discussed in Section I.C, national courts have become increasingly emboldened to determine FRAND rates at a global level.²⁴ Thus, the methodological choices made by any given court take on even greater significance, as they may be applied not only in the jurisdiction in dispute, but around the world.

Comprehensiveness. As noted above, many widely adopted standards are covered by hundreds or thousands of patents. Yet in litigation, the royalty due to every patent holder is determined individually, without reference to the other patents covering the same standard or product. In most cases only one patent holder out of dozens presents arguments to the court, generally over-emphasizing the value of its own patents above the others.²⁵ Thus, even if such a royalty might meet some test of reasonableness if considered in isolation, it is not likely to be reasonable when combined with many other independently-calculated royalties applied to the same product. This is the well-known problem of royalty "stacking".²⁶ In reality, despite the inherently bilateral, adversarial nature of litigation, the determination of a FRAND royalty is not strictly a bilateral matter. Rather, it must involve consideration of the many other patented and unpatented technologies embodied in the standardized technology. Thus, FRAND royalty determinations, particularly when they relate to standards covered by diversified patent holdings, should be comprehensive, taking into account the totality of patents and technologies involved in the relevant standard or product.

These three deficiencies in the FRAND licensing system -- *transparency*, *consistency* and *comprehensiveness* – impact the market in two principal ways. First, they negatively affect the overall *fairness* and *accuracy* of the system by producing results that could favor some market participants over others in a manner that is arguably in violation of the express commitment to grant licenses on terms that are FRAND. Uncertainty regarding the level of FRAND royalty rates makes it more difficult for manufacturers to predict the cost of entering a market characterized by broad product interoperability.

Second, the system imposes excess transaction costs through duplicative negotiation and repeat litigation both among different parties disputing rates over the same patents, and among the same parties litigating in different jurisdictions.²⁷ Such transaction costs could deter or prevent small

Contracts, 30 CARDOZO L. REV. 1475, 1479 (2009) (discussing parties' preference for "certainty and predictability" in transactions).

²⁴ Recent cases in which courts have sought to determine FRAND rates at a global level include *Unwired Planet* and *TCL v. Ericsson*. See discussion at Section I.C, *infra*.

²⁵ See William F. Lee & A. Douglas Melamed, *Breaking the Vicious Cycle of Patent Damages*, 101 CORNELL L. REV. 385, 427 (2014) ("[w]hen thousands of patents or other inputs are involved in the same device, judges and juries consistently and systematically overemphasize the value of the single patent (or patents) at issue as compared to all the other inputs."); Bartlett & Contreras, *supra* note 22, at 304-05 (comparing judicial tendency to view all patents as "above average" to Garrison Keillor's Lake Wobegone, "where all the women are strong, all the men are good looking, and all the children are above average") (quoting Garrison Keillor/American Public Media, *A PRAIRIE HOME COMPANION*, 1974-2016)).

²⁶ *Ericsson*, 773 F.3d at 1209 ("[i]f companies are forced to pay royalties to all [patent] holders, the royalties will 'stack' on top of each other and may become excessive in the aggregate").

²⁷ Separate judicial proceedings addressing similar legal and factual issues are inherently inefficient, as each judge in each case must separately be educated about the relevant industry, technology, commitments and valuation methodologies. See Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective*

and medium enterprises (SMEs) from entering the market and increase costs for larger firms, which in turn could lead to reduced consumer choice and higher consumer prices. The result could undermine the benefits that industry-wide, non-discriminatory licensing of standards-essential patents is intended to achieve. These concerns are particularly worthy of attention today, given the advent of important new technologies such as broadband 5G/6G data transmission and the Internet of Things, which will be heavily dependent on standardization.²⁸

This article adopts the perspective of a social planner seeking to minimize unfairness/inaccuracy and administrative inefficiency in FRAND licensing so as to maximize overall social welfare. As such, the proposals made herein are not aimed at achieving any particular distribution of revenue between SEP holders and manufacturers of standardized products, nor of minimizing consumer prices. Instead, it has the relatively modest aspiration of reducing unnecessary transaction costs while ensuring the fair and consistent treatment of all parties.²⁹

To do so, the tripartite issues of *transparency*, *consistency* and *comprehensiveness* in the FRAND licensing system must be addressed. That is, an open and *transparent* process should be used, both to ensure that SEP holders are treating licensees in a non-discriminatory fashion, and to provide reliable cost information to potential market entrants. FRAND rates should be determined in a *consistent* manner, at least for all patents covering a particular standard, but preferably for all standards generally. Third, the determination of FRAND royalties should be *comprehensive*, taking into account all pertinent information regarding the patents covering the relevant standard, not only the patents that may be held by a party to a particular lawsuit.

Over the past decade, proposals for increasing transparency in standard-setting have included, among others, requirements that SEP holders disclose their licensing rates prior to adoption of a standard (so-called *ex ante* disclosure),³⁰ a requirement that SEP holders announce a simple “cash only” price for licensing their SEPs,³¹ greater verification of the essentiality of patents declared to

Rights Organizations, 84 CAL. L. REV. 1293, 1317 (1996) (observing high transaction costs involved in judicial determination of copyright licensing rates).

²⁸ See Eur. Comm’n, Communication From the Commission to the European Parliament, the Council and the European Economic and Social Committee Setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712 final, at x [hereinafter EC SEP Communication]; Fiona Scott Morton & Carl Shapiro, *Patent Assertions: Are We Any Closer to Aligning Reward to Contribution?* NBER Working Paper No. 21678 (2015).

²⁹ This balance is important. Simply minimizing transaction costs could be achieved, for example, by requiring that all SEPs be licensed at zero royalty rates. In fact, a number of SDOs have adopted precisely such policies. See Jorge L. Contreras, *A Tale of Two Networks: Patents, Standards and the Internet*, 93 DENVER L. REV. 855 (2016) (discussing royalty-free licensing policies at IETF and W3C and contrasting with SDOs adopting FRAND policies). Yes, as numerous authors have written, “one size does not fit all”, and in some technology areas a royalty-free licensing regime might not produce desired levels of innovation and technology contribution. Thus, FRAND licensing cannot be ruled out entirely.

³⁰ Pierre Régibeau, Raphaël De Coninck & Hans Zenger, *Transparency, Predictability, and Efficiency of SSO-based Standardization and SEP Licensing: A Report for the European Commission* 31, 46 (2016); Jorge L. Contreras, *Technical Standards and Ex Ante Disclosure: Results and Analysis of an Empirical Study*, 53 JURIMETRICS 163 (2013) (describing *ex ante* policies adopted and proposed at several SDOs).

³¹ Albert A. Foer & Sandeep Vaheesan, Am. Antitrust Inst. Request for Joint Enforcement Guidelines on the Patent Policies of Standard Setting Organizations – Petition to the Department of Justice and Federal Trade Commission 16-17 (May 23, 2013), (May 23, 2013),

be SEPs,³² and increasing available public information about disclosures made to SDOs.³³ Likewise, some courts have taken steps toward addressing the issue of comprehensiveness. Specifically, a number of courts have used so-called “top down” approaches to FRAND royalty calculation, in which an aggregate royalty for all patents covering a particular standard is first determined and then allocated among individual patent holders. This approach, which is discussed in greater detail in Section I.A and which the author has advocated,³⁴ is an important step toward addressing comprehensiveness issues in FRAND rate determination, but does not solve the problems of lack of transparency or consistency. Thus, in order to address the most challenging issues facing the standardization system today, a tripartite approach that simultaneously improves transparency, consistency and comprehensiveness together is needed.

In prior work, Bartlett and I have proposed that these goals may be achieved through the procedural litigation mechanism of interpleader, in which all claims pertaining to royalties on a single standard would be aggregated into a single, massive judicial proceeding.³⁵ In other work, I have argued that SDOs could achieve these goals by facilitating an open agreement among SEP holders and manufacturers on aggregate royalty rates for particular standards.³⁶ Other commentators have likewise made a range of reasonable proposals seeking to address these issues with the current FRAND licensing system.³⁷ Yet none of these proposals appears ready to be implemented by a critical mass of SDOs and SDO participants.³⁸

This article offers a new option for determining FRAND royalty rates in a transparent, consistent and comprehensive manner: the establishment of a non-governmental, global FRAND rate-setting tribunal (referred to herein as the “FRAND Tribunal”).³⁹ The existence of such a tribunal, coupled with a requirement that SEP holders and product manufacturers resolve FRAND

<http://www.antitrustinstitute.org/sites/default/files/Request%20for%20Joint%20Enforcement%20Guidelines%20on%20the%20Patent%20Policies%20of%20Standard%20Setting%20Organizations.pdf> (“Licensees should have the option of licensing individual SEPs on a cash-only basis); Kühn, Scott Morton & Shelanski, *supra* note 14, at 4 (“The F/RAND dispute resolution process should require that the licensor specify a cash price for its SEPs as an alternative to other pricing arrangements to aid in evaluation of the proposed license terms by the third party”).

³² EC SEP Communication, *supra* note 28, at 7; Régibeau, *supra* note 30, at 32, 62, 86.

³³ EC SEP Communication, *supra* note 28, at x; Régibeau, *supra* note 30, at 32, 62, 86; NRC REPORT, *supra* note 9, at 80 (“SSOs should to [sic] consider measures to increase the quality and accuracy of disclosure data”).

³⁴ Contreras, *Aggregate Royalties*, *supra* note 16.

³⁵ Bartlett & Contreras, *supra* note 22 (proposing judicial interpleader process for resolving multiparty FRAND royalty determinations).

³⁶ See Contreras, *Fixing FRAND*, *supra* note 16 (proposing SDO-based “pseudo-pool” approach to setting aggregate FRAND royalty rates); see also Contreras, *Aggregated Royalties*, *supra* note 16 (refining earlier proposal).

³⁷ See, e.g., Kühn, Scott Morton & Shelanski, *supra* note 14; Marc Rysman & Timothy Simcoe, *A NASTy Alternative to RAND Pricing Commitments*, 35 TELECOM. POLICY 1010 (2011), Mark Lemley, *Ten Things to do About Patent Holdup of Standards (and One Not to)*, 48 B. C. L. REV. 149 (2008).

³⁸ For a discussion of commercial factors that have stymied policy change in this area, see Contreras, *Ex Ante*, *supra* note 30, at 207-08 (considering rationales for failure of SDOs to adopt *ex ante* disclosure policies).

³⁹ It is important to note that this proposal is not simply that FRAND disputes be resolved through binding non-judicial arbitration between parties to a dispute. The use of arbitration to resolve FRAND disputes has been proposed before (see Section II.A, *infra*). Rather, this article proposes a framework and tribunal for resolving FRAND disputes on a global basis, among all interested parties: rate-setting rather than bilateral arbitration.

royalty disputes exclusively by recourse to the tribunal, could contribute to alleviating the uncertainty and litigation burden currently associated with FRAND licensing.

The remainder of this article proceeds in four principal parts. Part I summarizes current disputes regarding the calculation of FRAND royalties, both in the literature and in judicial determinations, and highlights how the divergent approaches taken by courts in resolving these disputes has led to significant inconsistency in this area. Part I concludes with a discussion of the emerging international “race to the bottom” that could emerge as national courts increasingly determine FRAND royalty rates on a global basis. Part II describes a range of antecedents for the proposed rate-setting mechanism, including other arbitral bodies and rate-setting tribunals, as well as initial efforts made to resolve FRAND disputes through alternative dispute resolution. Part III introduces the proposed FRAND rate-setting tribunal and summarizes its principal features. This article concludes with recommendations for adoption and future work.

I. FRAND ROYALTIES TODAY

As noted above, there are numerous areas of disagreement regarding the calculation of FRAND royalties, not only among litigants, but among courts that have adjudicated these matters around the world.

A. FRAND Rate Calculation Approaches: Top-Down versus Bottom-Up

Generally speaking, courts have adopted two fundamental approaches to calculating the FRAND royalty to be charged by a SEP holder to the manufacturer of a standardized product. Under a “bottom up” approach, the FRAND royalty is determined using a conventional patent damages analysis in which the value of the SEP holder’s patents is assessed independently of other patents that may cover the infringing product, and the total royalty burden on the relevant standard and product emerge only as the sum of its individual components in separate cases. In contrast, under a “top down” approach, the aggregate royalty for all SEPs covering a particular standard is first determined, after which an appropriate portion is allocated to the claiming SEP holder. Each of these approaches is discussed in greater detail below.

1. Bottom-Up Approaches

Bottom-up royalty calculations are derived from traditional patent damages analysis. In the U.S., a patent holder asserting patents against an infringer is entitled to prove the value of its patents in order to establish “reasonable royalty” damages.⁴⁰ For the past several decades, the calculation of reasonable royalty damages in the U.S. has generally been conducted under the 15-factor framework established in *Georgia-Pacific Corp. v. U.S. Plywood Corp.*⁴¹ The factors

⁴⁰ See 35 U.S.C. § 284 (“the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use the infringer made of the invention”).

⁴¹ 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified and aff’d*, 446 F.2d 295 (2d Cir. 1971), *cert. denied*, 404 U.S. 870 (1971).

considered under *Georgia-Pacific* include the rates paid by the licensee for similar patents, whether the license is exclusive or non-exclusive, whether the licensor has a policy of limiting the licensing of its patents, the rates charged by the licensor to other licensees of the same patents, the competitive relationship between licensor and licensee, and the opinions of qualified experts.⁴²

However, because the *Georgia-Pacific* framework assumes that a patent holder and an alleged infringer have no pre-existing relationship or duty toward one another, many of the assumptions underlying this analysis are inapplicable to cases involving FRAND-encumbered SEPs in which the SEP holder has an affirmative obligation to grant licenses to implementers of the standard. Accordingly, in *Microsoft v. Motorola* the court expressly modified twelve of the fifteen *Georgia-Pacific* factors to align more closely with the relationship between a SEP holder and the manufacturer of a standardized product.⁴³ Likewise, in *Ericsson v. D-Link*, the Federal Circuit recognized several instances in which the *Georgia-Pacific* factors, as originally conceived, were both irrelevant and inconsistent with the relationship between parties operating under a [F]RAND commitment.⁴⁴ It thus approved the lower court's modification of these factors, but declined to require any particular modifications, leaving lower courts and, potentially, juries to make these assessments on a case-by-case basis.

The incremental nature of judicial decision making has led to a significant degree of divergence in FRAND royalty rate determinations, even when patents covering the same features of the same standard are at issue. For example, as observed by Bartlett and Contreras, between 2013 and 2014, five different U.S. district courts calculated royalties for a total of thirty-five SEPs covering Wi-Fi standards.⁴⁵ The aggregate royalty for these thirty-five patents amounted to approximately 4.5% of the total sale price of a typical \$50 Wi-Fi router.⁴⁶ Yet it has been estimated that there are approximately 3,000 patents covering the Wi-Fi standard,⁴⁷ nearly one hundred times the number subject to adjudication. Were the royalty for each of these patents to be calculated in a similarly uncoordinated, bottom-up manner, the aggregate patent royalty on a Wi-Fi router could easily surpass the product's total selling price by at least an order of magnitude. This is a prime example of potential royalty stacking.⁴⁸

For all of these reasons, bottom-up royalty calculation methods are often ill suited to the calculation of FRAND royalties.

2. Top-Down Approaches

Given the limitations of bottom-up calculations and the threat of royalty stacking when multiple firms hold SEPs covering a single standard, commentators, courts and policy makers have become increasingly attracted to mechanisms that take into account the aggregate royalty burden associated with a standard when considering the royalties owed to any particular patent holder.

⁴² *Id.*

⁴³ *Microsoft Corp. v. Motorola, Inc.*, Findings of Fact and Conclusions of Law, No. C10-1823, 2013 U.S. Dist. LEXIS 60233, *57-64 (W.D. Wash. Apr. 25, 2013).

⁴⁴ *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1229–30 (Fed. Cir. 2014).

⁴⁵ Bartlett & Contreras, *supra* note 22, at Table 2.

⁴⁶ *Id.*

⁴⁷ *Innovatio*, 2013 U.S. Dist. LEXIS 144061 at *179.

⁴⁸ See note 26, *supra*.

Thus, as the U.S. District Court for the Northern District of Illinois explained in *Innovatio IP Ventures*, “the determination of a [F]RAND royalty must address the risk of royalty stacking by considering the aggregate royalties that would apply if other [SEP] holders made royalty demands of the implementer.”⁴⁹ This sentiment was echoed by the European Commission in its 2017 Communication on SEPs, which stated that “an individual SEP cannot be considered in isolation. Parties need to take into account a reasonable aggregate rate for the standard, assessing the overall added value of the technology”.⁵⁰

Royalty calculation methodologies that take into account aggregate royalty levels can broadly be termed “top-down” approaches because they look first to the overall level of royalties associated with a standard and then allocate a portion of the total to individual SEP holders. Top-down approaches implicitly recognize that when multiple patents cover a single standard, the rate charged by one SEP holder will necessarily affect the rates that the other SEP holders can charge.⁵¹

Several courts around the world have attempted to determine FRAND royalty rates using a top-down methodology, including the U.S. District Court for the Northern District of Illinois in *Innovatio IP Ventures*,⁵² the Japanese Intellectual Property High Court in *Samsung v. Apple Japan*⁵³, the UK High Court of Justice (Patents) in *Unwired Planet v. Huawei*,⁵⁴ and the U.S. District Court for the Central District of California in *TCL Communications v. Ericsson*.⁵⁵ In each of these cases, the court sought to determine the aggregate royalty rate that should be attributed to all patents covering a particular standard, and then allocated an appropriate portion to the SEPs in suit.⁵⁶

But despite the appeal of top-down FRAND royalty calculation methodologies, reliable and consistent methods for determining the aggregate royalty burden on a particular standard have proven difficult to develop. One major challenge, again, is the lack of transparency in FRAND transactions.⁵⁷ Faced with the resulting lack of market data, courts using top-down methodologies have been forced to rely upon less reliable information. For example, in three of the four cases mentioned above, the court utilized a combination of public statements by SEP holders and other industry participants coupled with other market factors to determine the aggregate royalty burden for a particular standard. In *Unwired Planet*, for example, the court cites eight different press releases and public statements in which industry participants estimated either the total royalty

⁴⁹ *Innovatio*, 2013 U.S. Dist. LEXIS 144061 at *62 (internal quotes omitted).

⁵⁰ EC SEP Communication, *supra* note 28, at 7.

⁵¹ See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2011 (2007) (“the royalty rate negotiated by one patent holder is affected by the rates the downstream firm pays to other patent holders, so a proper analysis must account for the joint determination of all the royalty rates”).

⁵² *Innovatio*, 2013 U.S. Dist. LEXIS 144061.

⁵³ *Apple Japan Godo Kaisha v. Samsung Electronics Co., Ltd.*, IP High Court of Japan, 2013 (Ne) 10043 (May 16, 2014).

⁵⁴ [2017] EWHC 711 (Pat) (Apr. 5, 2017).

⁵⁵ *TCL Communications v. Ericsson*, Memorandum of Findings of Fact and Conclusions of Law (C.D. Cal., Dec. 21, 2017, SACV 14-341 JVS(DFMx) and CV 15-2370 JVS (DFMx)).

⁵⁶ For a more detailed discussion of the use of top-down approaches in these cases, see Deng, *supra* note 22; Contreras, *Aggregate Royalties*, *supra* note 16.

⁵⁷ See notes 20-21, *supra*, and accompanying text.

burden for the relevant standards, or their share of SEPs covering those standards.⁵⁸ In some cases, these rates were no more than ballpark estimates⁵⁹ which the court found to be “obviously self-serving”.⁶⁰ Similar evidence was utilized by the Japanese IP High Court in *Samsung v. Apple Japan*, which established an aggregate royalty rate of 5% for a standard based on public statements and informal agreements among industry participants.⁶¹

This weakness in the top-down approach to FRAND royalty calculation is compounded by the incremental nature of FRAND litigation. Thus, just as with bottom-up approaches, courts adjudicating FRAND royalty rates are presented with evidence from only one SEP holder, rather than from the entire market, making it likely that their allocation of royalties to particular SEP holders will be inconsistent.⁶² Absent the introduction of multi-party litigation mechanisms such as interpleader,⁶³ this incremental approach is an unavoidable feature of private litigation. This is one of the reasons that an alternative to conventional litigation is proposed by this article.

B. Other FRAND Rate Issues

In addition to the choice between top-down and bottom-up royalty calculation methodologies, there are a number of additional controversies surrounding the calculation of FRAND royalties. For example, there is significant debate regarding the correct royalty “base” for FRAND royalties: the amount by which a percentage royalty is multiplied to derive the actual amount owed to the patent holder. Two competing approaches have emerged from the case law: the “smallest saleable patent practicing unit” (SSPPU) approach, in which the royalty rate is multiplied by the sale price of the smallest infringing component that is sold as a stand-alone product (e.g., a chip or module),⁶⁴ and the “entire market value rule” (EMVR), in which the royalty is based on the value of the entire end product implementing the patented feature (e.g., a smart phone, computer or game player).⁶⁵ Assuming that the royalty rate remains constant, the choice between the SSPPU and the EMVR approaches could yield significantly different returns to the patent holder. There is now a growing literature debating the relative merits of these differing approaches to FRAND royalty

⁵⁸ Similar statements were recently relied upon by the parties in *TCL Communication Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, Case No. SACV14-00341 JVS (DFMx), TCL’s Redacted Trial Brief at 8 (C.D. Cal. Feb. 14, 2017) [hereinafter TCL Trial Brief].

⁵⁹ For example, in one public statement by “wireless industry leaders”, the maximum reasonable aggregate royalty level for the 4G LTE standard should be a “single-digit percentage of the sales price”. *Unwired Planet* at ¶264(i). Another press release by Huawei anticipated “a low single-digit percentage of sales prices as a reasonable maximum aggregate royalty rate applicable to end-user devices”. *Id.* at ¶264(iii).

⁶⁰ *Unwired Planet*, [2017] EWHC 711 at ¶269.

⁶¹ *Apple Japan*, 2013 (Ne) 10043 at 131.

⁶² *See, e.g., Deng et al, supra* note 22, at 49 (comparing differing top-down methodologies in *Unwired Planet v. Huawei* and *TCL v. Ericsson*).

⁶³ *See Bartlett & Contreras, supra* note 22.

⁶⁴ *See Cornell Univ. v. Hewlett-Packard Co.*, 698 F.Supp.2d 279 (N.D.N.Y. 2009) (first enunciating the SSPPU test).

⁶⁵ *See Ericsson v. D-Link*, 773 F.3d at x (comparing EMVR and SSPPU approaches in SEP cases).

calculation,⁶⁶ and at least one major SDO has suggested that its participants consider SSPPU when negotiating FRAND royalty rates.⁶⁷

Another area of disagreement arises with respect to the use of “comparable” license agreements as evidence supporting the determination of FRAND royalty rates. Some commentators support the use of comparable licenses as the best available evidence of royalty rates that the parties would have agreed in a hypothetical negotiation.⁶⁸ Others, however, express concern that license agreements between different parties are unreliable, non-transparent and seldom comparable enough to be useful in determining royalties that would have been agreed by the parties in litigation.⁶⁹ In litigation, courts have likewise taken differing approaches to the comparable license agreements that will be admitted into evidence when calculating FRAND royalty rates, ranging from the admission of licenses with different parties and patent pools,⁷⁰ to licenses granted solely by the SEP holder in suit under the same patent portfolio.⁷¹

Another contentious issue arises in connection with the apportionment of a fraction of the total value of an infringing product to a particular patent holder when the product is covered by multiple patents. It is well-established that “reasonable royalty” patent damages should be “based on the incremental value that the patented invention adds to the end product.”⁷² Determining this incremental value requires a court to determine the fraction of the overall product value that is contributed by the patented feature in view of all the other patented and unpatented features of the product. This analysis is often referred to as “apportionment”. Aside from the difficulty of determining the overall value that a standard contributes to a particular product, the court must also determine how valuable one patent covering a standard is in comparison to the others. Individual patents and groups of patents have been valued in litigation using a range of economic models and methods.⁷³ But in many cases when multiple patents cover a single standard or product,

⁶⁶ See, e.g., David Kappos & Paul R. Michel, *The Smallest Salable Patent-Practicing Unit: Observations on its Origins, Development, and Future*, 32 BERKELEY TECH. L.J. 1433 (2017); Norman V. Siebrasse & Thomas F. Cotter, *Judicially Determined FRAND Royalties* in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 23 (Jorge L. Contreras, ed., 2017); Nicolas Petit, *The Smallest Salable Patent-Practicing Unit Experiment, General Purpose Technologies and the Coase Theorem*, CPI ANTITRUST CHRON., Apr. 2017; J. Gregory Sidak, *The Proper Royalty Base for Patent Damages*, 10 J. COMPETITION L. & ECON. 989 (2014).

⁶⁷ See IEEE Policy, *supra* note 15, at x; U.S. Dept. of Justice, Business Review Letter from Hon. Renata B. Hesse, Acting Assistant Attorney Gen., U.S. Dep’t of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, L.L.P. (Feb. 2, 2015) (approving IEEE policy amendments).

⁶⁸ See, e.g., J. Gregory Sidak, *Apportionment, FRAND Royalties, and Comparable Licenses After Ericsson v. D-Link*, 2016 UNIV. ILL. L. REV. 1810; Damien Geradin & Anne Layne-Farrar, *Patent Value Apportionment Rules for Complex, Multi-Patent Products*, 27 SANTA CLARA COMP. & HIGH TECH. L.J. 763 (2011).

⁶⁹ See Colleen Chien & Eric Schulman, *Patent Semi-Comparables*, 25 TEX. INTELL. PROP. L.J. 215 (2018); Jonathan Masur, *The Use and Abuse of Patent Licenses*, 110 NW. L. REV. 115 (2015).

⁷⁰ *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, x (9th Cir. 2015).

⁷¹ *Unwired Planet*, [2017] EWHC 711 at x. See also Deng et al, *supra* note 22, at 48 (comparing differing methodologies used to assess comparable licenses in *Unwired Planet v. Huawei* and *TCL v. Ericsson*).

⁷² *Ericsson v. D-Link*, 773 F.3d at x.

⁷³ See, e.g., Thomas F. Cotter, *Patent Damages Heuristics*, 25 TEX. INTELL. PROP. L.J. 159, x (analyzing various methodologies adopted in recent SEP cases); Bartlett & Contreras, *supra* note 22, at x (collecting literature); David O. Taylor, *Using Reasonable Royalties to Value Patented Technology*, 49 GEO. L. REV. 79, 131-39 (2014); Geradin & Layne-Farrar, *supra* note 68, at 781-84; Patrick H. Sullivan, *Standardising IP Valuations: Whether, What and How*,

royalties are allocated based on nothing more than a simple patent “head count” (sometimes referred to as numerical proportionality), whereby each patent is entitled to a proportional share of the total.⁷⁴ While this last approach may seem unsophisticated by comparison to those better informed by economic analysis, it is frequently adopted by parties and courts during litigation. As explained by the court in *Unwired Planet*, “some sort of patent counting is the only practical approach at least for a portfolio of any size. Trying to evaluate the importance of individual inventions becomes disproportionate very quickly.”⁷⁵

Another fundamental question regarding the determination of FRAND royalties is whether the value of the patented technology should be assessed prior to the approval of the relevant standard (*ex ante*), so as to eliminate from consideration value that is created simply by virtue of being included in a standard, or after approval of the standard (*ex post*). U.S. courts,⁷⁶ enforcement agencies,⁷⁷ and commentators⁷⁸ have largely concluded that a FRAND royalty should reflect the *ex ante* value of a patented technology, without considering the added value attributable to the inclusion of the technology in a standard. In *Unwired Planet*, however, the U.K. court expressly rejected the U.S. approach with little explanation.⁷⁹

Another point on which the UK court in *Unwired Planet* diverged from decisions in the U.S. is whether the FRAND royalty rate applicable to a particular patent is a single rate, or whether FRAND represents a *range* of possible royalty rates. In *Microsoft v. Motorola*, the U.S. district court determined a FRAND range for the SEPs covering each standard at issue in order to assess whether the SEP holder complied with its duty of good faith and fair dealing under applicable law;

INTELL. ASSET MANAGEMENT, Mar-Apr. 2009, at 30 (noting over 50 different methods for valuing IP); J. Gregory Sidak, *Holdup, Royalty Stacking, and the Presumption of Injunctive Relief for Patent Infringement: A Reply to Lemley and Shapiro*, 92 MINN. L. REV. 714, 736-43 (2008); Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1059 (2005); RICHARD RAZGAITIS, VALUATION AND PRICING OF TECHNOLOGY-BASED INTELLECTUAL PROPERTY 41-54 (2003), Robert Pitkethly, *The Valuation of Patents: A Review of Patent Valuation Methods with Consideration of Option Based Methods and the Potential for Further Research*, Judge Inst. Working Paper WP 21/97 (1997), <http://users.ox.ac.uk/~mast0140/EJWP0599.pdf>.

⁷⁴ See Menno Treffers, *The Royalty Rate for a Subset of Standard Essential Patents – What is Reasonable?* IPWatchdog, May 22, 2016, <http://www.ipwatchdog.com/2016/05/22/royalty-rate-standard-essential-patents/id=69045/>. *But see* Geradin & Layne-Farrar, *supra* note 68, at 779-80 (critiquing this methodology).

⁷⁵ *Unwired Planet*, [2017] EWHC 711 at ¶182.

⁷⁶ *Ericsson v. D-Link*, 773 F.3d at 1232; *In re Innovatio IP Ventures, LLC Patent Litig.*, 921 F. Supp. 2d 903, 907 (N.D. Ill. 2013); *Microsoft Corp. v. Motorola, Inc., Findings of Fact and Conclusions of Law*, No. C10-1823, 2013 U.S. Dist. LEXIS 60233 (W.D. Wash. Apr. 25, 2013).

⁷⁷ FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 22-23 (2011) (“A definition of RAND based on the *ex ante* value of the patented technology at the time the standard is chosen is necessary for consumers to benefit from competition among technologies to be incorporated into the standard”).

⁷⁸ See, e.g., Lemley & Shapiro, *Patent Holdup*, *supra* note 51, at x; Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard Setting, Patents, and Hold-Up*, 74 ANTITRUST L.J. 603, 603 (2007). *But see* Norman Siebrasse & Thomas F. Cotter, *The Value of the Standard*, 101 MINNESOTA L. REV. 1159 (2017) (arguing that some portion of the value of standardization should be attributed to technology incorporated into the standard); J. Gregory Sidak, *Apportionment, FRAND Royalties, and Comparable Licenses After Ericsson v. D-Link*, 2016 UNIV. ILL. L. REV. 1810 (same).

⁷⁹ *Unwired Planet*, [2017] EWHC 711 at ¶97. For a more detailed discussion of this aspect of the *Unwired Planet* decision, see Jorge L. Contreras, *Global Markets, Competition and FRAND Royalties: The Many Implications of Unwired Planet v. Huawei*, 16 ANTITRUST SOURCE, Aug. 2017, at 8.

then, in setting a final royalty, the court picked a specific rate within the allowable range.⁸⁰ In *Unwired Planet*, however, the court reasoned that it is better to maintain, as a matter of law, that there is but a *single* royalty rate that qualifies as FRAND for any given set of SEPs and products.⁸¹

Finally, in addition to being “fair” and “reasonable”, FRAND royalty rates must be “non-discriminatory” (or, in the phrasing adopted by ANSI, “manifestly free of unfair discrimination”). That is, a SEP holder may not discriminate in what it charges to different licensees. Today, most courts and commentators agree that in order to comply with the non-discrimination prong of a FRAND commitment, a SEP holder must treat “similarly situated” licensees in a similar manner.⁸² Commentators have understood this constraint to allow a SEP holder to charge differential royalty rates to product manufacturers based on their size or market share, even if they are otherwise similarly situated, on the basis that sellers of more products will pay more in royalties.⁸³ There is disagreement, however, regarding the degree of similarity that must be evidenced by potential licensees in order to benefit from the same royalty rate or rate schedule. In *TCL v. Ericsson*, the court held that that similarly situated firms include “all firms reasonably well-established in the world market” [for telecommunications products], thus entitling a relatively low-end producer (TCL) to the same favorable royalty rates that the SEP holder had previously offered to high-end producers such as Apple and Samsung.⁸⁴ Needless to say, different views regarding which firms are similarly situated can have a material impact on the rates charged by SEP holders.

The above discussion represents only a fraction of the many analytical and practical points on which parties, courts and commentators disagree regarding the determination of FRAND royalty rates.

C. *The Challenge of Global Rates*

Courts adjudicating FRAND royalty rates face a dilemma. On one hand, patents are artifacts of national law and, by definition, have force only in the jurisdiction in which they are issued. On the other hand, the parties to FRAND disputes are often multinational corporations with operations (and patents) in dozens of jurisdictions across the globe. In determining a FRAND royalty rate, should a court focus only on the patents issued in its own jurisdiction, or on the global business relationship between the parties?

In *Unwired Planet*, Huawei, the potential licensee, argued that the court should determine a FRAND royalty only for Unwired Planet’s UK patents, as non-UK patents could not be enforced

⁸⁰ *Microsoft v. Motorola*, 2013 U.S. Dist. LEXIS 60233 at *303.

⁸¹ *Unwired Planet*, [2017] EWHC 711 at ¶804(4). For a more detailed discussion of this aspect of the *Unwired Planet* decision, see Contreras, *Global Markets*, *supra* note 79, at 2-4; J. Gregory Sidak, *Is a FRAND Royalty a Point or a Range?* 2 CRITERION J. INNOVATION 401 (2017).

⁸² For a detailed discussion of the non-discrimination prong of FRAND, see Jorge L. Contreras & Anne Layne-Farrar, *Non-Discrimination and FRAND Commitments* in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 12 (Jorge L. Contreras, ed., 2017).

⁸³ See, e.g., Gilbert, *supra* note 14; Dennis W. Carlton & Allan L. Shampine, *An Economic Interpretation of FRAND*, 9 J. COMPETITION L. & ECON. 531 (2013).

⁸⁴ *TCL v. Ericsson*, slip op. at 56-58. This decision is currently under appeal.

in the UK and were not the subject of the parties' UK litigation.⁸⁵ But the court disagreed. First, it observed that "the vast majority" of SEP licenses in the industry, including all of the comparable licenses introduced at trial, were granted on a worldwide basis, with only occasional exclusions.⁸⁶ It then noted that both Unwired Planet (which held SEPs in forty-two countries) and Huawei (which operated in fifty-one countries) were global enterprises.⁸⁷ Given these facts, the court reasoned that "a licensor and licensee acting reasonably and on a willing basis would agree on a worldwide licence".⁸⁸ In fact, the court considered the prospect of two large multinational companies agreeing to country-by-country licensing to be "madness".⁸⁹ Accordingly, it held that, on these facts, a FRAND license can *only* be a worldwide license,⁹⁰ and proceeded to determine the FRAND royalty rates that Huawei should pay to Unwired Planet on a global basis. If Huawei refused to accept the worldwide license fashioned by the court, it would face an injunction on sales of its infringing products in the UK.⁹¹

The U.S. District Court for the Central District of California reached a similar conclusion in *TCL v. Ericsson*, also determining worldwide FRAND royalty rates that TCL should pay to Ericsson. If courts in the UK and U.S. can set global royalty rates, then why not those in Germany, France, Canada, India, Korea, Japan and China as well? In point of fact, a court in *any* jurisdiction that has the parties before it can establish a global royalty rate for them. And if the manufacturer refuses to enter into the global license fashioned by the court, it risks being enjoined from selling products in that country. Thus, in *Unwired Planet*, Huawei could have refused to accept the UK court's global license, but if it did so, it would have had to sacrifice its lucrative UK market, valued at approximately one billion pounds per year. This is a Hobson's Choice for any sizable product manufacturer: either accept a national court's determination of global FRAND royalty rates or lose access to the relevant national market.

As a result, a court in any country with a large enough internal market can set worldwide FRAND rates for parties with international operations. And once a worldwide license is granted, the licensee is authorized to manufacture and sell licensed products around the globe, thereby mooting infringement proceedings in other jurisdictions, at least with respect to the issue of FRAND royalties.⁹² As a result, the *first* court to set a FRAND royalty rate will prevail over all other courts in the world.

⁸⁵ *Unwired Planet*, [2017] EWHC 711 at ¶ 524.

⁸⁶ *Id.* at ¶ 534. Some comparable licenses, for example, excluded China.

⁸⁷ *Id.* at ¶ 538.

⁸⁸ *Id.* at ¶ 543.

⁸⁹ *Id.*

⁹⁰ Huawei has been granted leave to appeal this aspect of the ruling. [2017] EWHC 1304 (Pat) (May 19, 2017) at ¶¶ 62-63. See also *Saint Lawrence Communications v. Vodafone*, Landgericht Düsseldorf 4a O 73/14, 4a O 126/14, 4a O 127/14, 4a O 128/14, 4a O 129/14, 4a O 130/14, 31 March 2016 (SEP holder's offer of a worldwide license is FRAND compliant); Robin Jacob & Alexander Milner, *Lessons from Huawei v. ZTE* at 10, 4iP Council research report, Oct. 2016, <http://www.4ipcouncil.com/news/latest-research-4ip-council-lessons-huawei-v-zte> (discussing *St. Lawrence v. Vodafone*).

⁹¹ As of this writing, Huawei has *not* accepted the court's license and the court entered an injunction, but has stayed its enforcement pending appeal. [2017] EWHC 1304 (Pat) (May 19, 2017).

⁹² In addition, a court that is in the midst of hearing a case may issue an anti-suit injunction prohibiting the parties from prosecuting the case in other jurisdictions pending resolution by the first court. See Jorge L. Contreras & Michael

As I have discussed in prior work, this situation sets the stage for the emergence of two unhealthy forms of litigation “race”.⁹³ First, the willingness of judges in particular jurisdictions to set high global FRAND rates could attract SEP holders to those jurisdictions, much as U.S. patent holders were once attracted to the patent-friendly District Court for the Eastern District of Texas.⁹⁴ By the same token, jurisdictions that establish reputations for setting low global FRAND rates may attract standards implementers seeking to challenge the rates offered by SEP holders. When jurisdictions intentionally adapt their rules and procedures, not to mention their substantive decisions, to attract litigants, a so-called “race to the bottom” may emerge among jurisdictions.⁹⁵

Moreover, a gradient in favorability to a particular party’s position can encourage that party to bring litigation in its preferred jurisdiction as early as possible, often to foreclose a later suit from being brought in a jurisdiction that is less favorable to it. This situation is referred to as a “race to the courthouse”⁹⁶ and may prematurely drive parties to litigation rather than negotiation or settlement. Such a landscape is, as Senator Bob Dole put it when describing the patchwork of judicial patent law interpretations that existed before the creation of the Court of Appeals for the Federal Circuit, a “forum shopper’s delight and an innovator’s nightmare”.⁹⁷ Given the disparities in treatment of the same issues by courts around the world, there is evidence that such forum shopping is already occurring in the area of patent litigation, and this trend is only likely to continue.⁹⁸

A. Eixenberger, *The Anti-Suit Injunction: A Transnational Remedy for Multi-Jurisdictional SEP Litigation* in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST AND PATENT LAW, Ch. 27 (Jorge L. Contreras, ed., 2017) (describing anti-suit injunctions issued by U.S. courts in *Microsoft v. Motorola*, *Vringo v. ZTE* and *TCL v. Ericsson*).

⁹³ See Contreras, *Global Markets*, *supra* note 79.

⁹⁴ See, e.g., J. Jonas Anderson, *Reining in a ‘Renegade’ Court: TC Heartland and the Eastern District of Texas*, 39 CARDOZO L. REV. 1569, 1571 (2018) (“[f]or many years, the judges in the Eastern District have encouraged patent plaintiffs to file their cases in the district”); Brian J. Love & James Yoon, *Predictably Expensive: A Critical Look at Patent Litigation in the Eastern District of Texas*, 20 STANFORD TECH. L. REV. 1 (2017). The peculiar dominance of the Eastern District of Texas in U.S. patent litigation may be coming to an end following the U.S. Supreme Court’s recent decision in *TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017). See Anderson, *supra*, at 1571 (“The case struck a direct blow against what Justice Scalia famously referred to as the ‘renegade jurisdiction’”).

⁹⁵ See, e.g., Eisenberg & Miller, *supra* note 23, at 1482-87 (describing New York’s sustained efforts to attract commercial contract litigation through both procedural and substantive rules); Daniel J.H. Greenwood, *Democracy and Delaware: The Mysterious Race to the Bottom/Top*, 23 YALE L. & POLICY REV., Iss. 2, Art. 2 (2005) (discussing the view that Delaware adjusted its corporate law to attract business incorporations). *But see* Eisenberg & Miller, *supra* note 23, at 1480 (hypothesizing that courts in states such as Delaware are sought out for the resolution of disputes due to factors including “their high degree of competence and for the integrity of the state’s judiciary”).

⁹⁶ See, e.g., Peter E. Herzog, *Brussels and Lugano, Should You Race to the Courthouse or Race for a Judgment?* 43 AM. J. COMP. L. 379 (1995); *Perez v. Ledesma*, 401 U.S. 82, 119 n.12 (1971) (Brennan, J., dissenting).

⁹⁷ 127 Cong. Rec. S29,861 (daily ed. Dec. 8, 1981) (statement of Sen. Dole).

⁹⁸ See, e.g., Matthew Bultman, *Patent Owners Taking Global View in Enforcement Efforts*, LAW360, Jul. 18, 2018 (“The more the U.S. system is out of harmony with international standards, the more your international corporations will prefer to litigate elsewhere” (quoting Randall Rader)).

II. ANTECEDENTS AND BUILDING BLOCKS FOR A FRAND RATE-SETTING TRIBUNAL

When a SEP holder and a product manufacturer disagree over the royalty rates that the SEP holder may validly charge, some form of dispute resolution is required. A typical form of dispute resolution is litigation. However, as discussed above, there are numerous areas in which courts disagree over the proper methodology for calculating FRAND royalties and increasing indications that national courts will seek to make global determinations using their own favored methodologies. This, coupled with the lack of transparency of existing FRAND licenses and the failure of most FRAND calculations to address adequately the totality of patents covering a particular standard, suggests that any solution to the quandary of FRAND royalty rates must address the three issues of *transparency*, *consistency* and *comprehensiveness*. This article proposes that, instead of bilateral litigation, this tripartite goal may be achieved through a global FRAND rate-setting tribunal. In this Part, I discuss existing precedents for such a rate-setting mechanism. These include existing alternative dispute resolution (ADR) procedures for resolving FRAND disputes, expert rate-setting authorities in areas including copyright and public utilities, and mandatory arbitration procedures in settings such as Internet domain name disputes.

A. Arbitration of FRAND Disputes

FRAND disputes need not be resolved through litigation. In fact, many such disputes are already resolved through arbitration and other private alternative dispute resolution (ADR) mechanisms.⁹⁹ The European Commission recognized the following potential benefits of resolving FRAND disputes through ADR in 2014:

- (i) faster resolution of conflicts;
- (ii) lower costs [];
- (iii) a lower threshold for parties to seek a solution when bilateral negotiations fail;
- (iv) more consistent outcomes, as parties can no longer do forum shopping;
- (v) higher quality outcomes, as a result of applicable competences, specialism and cumulative knowledge by the arbiters;
- (vi) fairer outcomes, especially when licensing conditions are not discussed under the threat of injunction;

⁹⁹ Statistics on the number of FRAND disputes resolved through ADR are not available. Anecdotally, the author has served as an arbitrator in a large international FRAND dispute. See also Damien Geradin, *FRAND Arbitration: The Determination of Fair, Reasonable and Non-Discriminatory Rates for SEPs by Arbitral Tribunals*, CPI ANTITRUST CHRON., Sep. 2016 (recommendations and observations based on experience as an arbitrator).

(vii) more creative and more focused on problem solving than litigation, which has always been based on an adversarial model and

(viii) once the dispute is over, the parties face no appeals, delays, continuing expenses, or unknown risks.¹⁰⁰

An additional benefit of arbitration over court adjudication is that, unlike judicial awards, most arbitral awards rendered in accordance with a customary set of due process procedures are recognized, and can be enforced, in all countries that are parties to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards.¹⁰¹

In addition to the European Commission, the U.S. FTC has recognized arbitration as a valid mechanism for resolving disputes over FRAND licensing.¹⁰² Most recently, the Japan Patent Office, which has published a comprehensive *Guide to Licensing Negotiations Involving Standard Essential Patents*,¹⁰³ has actively promoted the use of ADR to resolve FRAND disputes.¹⁰⁴ Adding to these governmental sources, numerous academic commentators,¹⁰⁵ government officials,¹⁰⁶ and legal practitioners¹⁰⁷ have encouraged the use of ADR in resolving FRAND disputes. All of these endorsements point to a growing recognition that ADR may offer satisfactory global solutions to FRAND disputes in a manner that can be more efficient than dispersed national-level litigation.

¹⁰⁰ EUR. COMM'N, PATENTS AND STANDARDS: A MODERN FRAMEWORK FOR IPR-BASED STANDARDIZATION 178 (2014). See also EC SEP Communication, *supra* note 28, at 11 (ADR “can offer swifter and less costly dispute resolution” than litigation). See, generally, Theodore Eisenberg & Geoffrey P. Miller, *The Flight from Arbitration: An Empirical Study of Ex Ante Arbitration Clauses in the Contracts of Publicly-Held Companies*, 56 DEPAUL L. REV. 335, 336-39 (2007) (listing perceived benefits of commercial arbitration over judicial dispute resolution); Roger S. Haydock, *Civil Justice and Dispute Resolution in the Twenty-First Century: Mediation and Arbitration Now and for the Future*, 27 WM. MITCHELL L. REV. 745, 748-49 (2000) (listing 12 factors supporting arbitration of disputes).

¹⁰¹ U.N. Comm. on Intl. Trade Law, Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 1958).

¹⁰² See *In re. Motorola Mobility LLC & Google Inc.*, FTC Docket No. C-4410 (Jul. 23, 2013) (decision and order) (“binding arbitration” is an acceptable method for resolving disputes over FRAND terms).

¹⁰³ Japan Patent Off., Guide to Licensing Negotiations Involving Standard Essential Patents (Jun. 5, 2018), <http://www.meti.go.jp/press/2018/06/20180605003/20180605003-2.pdf>.

¹⁰⁴ Japan Patent Off., Mock International Arbitration - Toward Early Dispute Resolution of Standard Essential Patents (SEPs) in the 5G Era - Held in Tokyo (Jun. 29, 2018), https://www.jpo.go.jp/shoukai_e/soshiki_e/photo_gallery2018062991.html (describing mock international arbitration involving renowned international jurists).

¹⁰⁵ See, e.g., Contreras & Newman, *supra* note 20; Lemley & Shapiro, *Simple Approach*, *supra* note 23; Lemley, *Ten Things*, *supra* note x, at 155.

¹⁰⁶ See, e.g., Kühn, Scott Morton & Shelanski, *supra* note 14, at 4; Renata Hesse, Deputy Assistant Att’y Gen., Antitrust Div., U.S. Dep’t of Justice, Remarks at the ITU-T Patent Roundtable: Six “Small” Proposals for SSOs Before Lunch, at 9 (Oct. 10, 2012), <http://www.justice.gov/atr/public/speeches/287855.pdf>.

¹⁰⁷ See, e.g., Foer & Vaheesan, *supra* note 31, at 17 (“SSOs should establish and require participation in dispute resolution processes that offer a quicker, more cost-effective alternative to litigation”); David A. Balto & Daniel I. Prywes, *Standard-Setting Disputes: The Need for FTC Guidelines*, FTC WATCH (Mar. 25, 2002) (“Standard-setting groups should be encouraged to require alternative dispute resolution procedures for resolving disputes about licensing terms”).

Numerous mechanisms currently exist to enable parties to resolve FRAND-related disputes through binding arbitration. Several institutions around the world have created arbitration rules and procedures tailored to the adjudication of patent disputes. For example, the American Arbitration Association (AAA), which operates the International Center for Dispute Resolution (ICDR), has adopted Supplementary Rules for the Resolution of Patent Disputes.¹⁰⁸ These rules address patent disputes within the framework of AAA's Commercial Arbitration Rules and Mediation Procedures.¹⁰⁹ In addition, the World Intellectual Property Organization (WIPO), which established the WIPO Arbitration and Mediation Center in 1994, has recently developed a set of model agreements for the submission of FRAND disputes for WIPO mediation or arbitration.¹¹⁰ As discussed in greater detail in Section II.B, below, WIPO has administered the international Uniform Domain Name Dispute Resolution Policy (UDRP) for the resolution of Internet domain name disputes since 1999.

B. Mandatory Arbitration

Arbitration generally takes place when parties mutually agree to forego judicial resolution of a dispute in favor of private resolution of their differences.¹¹¹ Non-judicial resolution of disputes cannot be compelled; the parties must, at some point, agree to it. Of course, not all arbitration agreements are negotiated between sophisticated parties. Standardized consumer contracts for telephone service, credit cards, and computer software, as well as employment agreements, often contain arbitration clauses that are routinely enforced by the courts even if poorly understood by consumers.¹¹² Similarly, WIPO's Uniform Domain Name Dispute Resolution Policy (UDRP) for resolving Internet domain name disputes is mandated by agreements between the Internet Corporation for Assigned Names and Numbers (ICANN) and Internet domain name registrars, which, in turn, pass this requirement down to individual domain name registrants.¹¹³ Thus, the term "mandatory" arbitration is something of a misnomer, as an agreement technically underlies all such arbitration proceedings.

¹⁰⁸AM. ARBITRATION ASSN., *Resolution of Patent Disputes Supplementary Rules* (Jan. 1, 2006), https://www.adr.org/cs/groups/commercial/documents/document/dgdf/mda0/~edisp/adrstg_004118~1.pdf.

¹⁰⁹AM. ARBITRATION ASSN., *Commercial Arbitration Rules & Mediation Procedures* (2013), http://www.adr.org/aaa/ShowProperty?nodeId=/UCM/ADRSTG_004103&revision=latestreleased.

¹¹⁰See WORLD INTELLECTUAL PROP. ORG., WIPO ADR for FRAND Disputes, <http://www.wipo.int/amc/en/center/specific-sectors/ict/frand/> (visited Jul. 9, 2018).

¹¹¹See, generally, GARY B. BORN, INTERNATIONAL COMMERCIAL ARBITRATION: COMMENTARY & MATERIALS 53 (2d ed. 2001) ("[t]he foundation for almost every international arbitration is an international arbitration agreement. Absent a valid agreement to arbitrate, there is generally no basis for requiring arbitration or for enforcing an arbitral award against a party").

¹¹²See *Epic Systems Corp. v. Lewis*, ___ U.S. ___ (2018) (upholding employment arbitration clauses prohibiting class action claims); Paul Bennett Marrow & Craig E. Penn, *The 'Circle of Assent' Doctrine and the Mandatory Pre-Dispute Arbitration Clause: When the Unconscionable Contract Analysis Just Won't Do*, 68 DISPUTE RESOL. J. 1 (Spr. 2013) (discussing enforceability of mandatory arbitration clauses in contracts of adhesion); Katherine V. W. Stone, *Procedure, Substance, and Power: Collective Litigation and Arbitration Under the Labor Law*, 61 UCLA L. REV. DISCOURSE 164 (2013) (employment agreement arbitration clauses).

¹¹³See WORLD INTELLECTUAL PROP. ORG., WIPO Guide to Uniform Domain Name Dispute Resolution Policy (UDRP), <http://www.wipo.int/amc/en/domains/guide/#a> (visited July 19, 2018).

Likewise, parties that participate in an SDO, either through formal membership or involvement in its standards-development activities, are generally deemed to have agreed to abide by the SDO's rules and policies.¹¹⁴ Thus, if an SDO, as part of its formal rules, requires that its participants submit disputes regarding FRAND royalties to binding arbitration in lieu of court adjudication, then the participants in that SDO who are bound by those rules must do so.

This “mandatory” arbitration approach is not uncommon in patent pools, several of which require their members to submit disputes to arbitration.¹¹⁵ Likewise, a handful of SDOs require that certain disputes among their members be resolved through binding arbitration. These include the Digital Video Broadcasting (DVB) Project, which requires its members to resolve disputes regarding licenses of DVB standards under the arbitration rules of the International Chamber of Commerce (ICC);¹¹⁶ the VMEbus International Trade Association (VITA), which requires patent-related disputes to be resolved through arbitration administered by VITA itself;¹¹⁷ and the Blu-Ray Disc Association, which requires that patent licensing disputes be resolved through arbitration by the American Arbitration Association (AAA).¹¹⁸ In contrast, other SDO policies merely state that members “may” arbitrate SEP-related disputes, in which case arbitration is voluntary. Several commentators have objected to proposals to make arbitration of FRAND disputes mandatory within SDOs.¹¹⁹ In practice, it appears that neither the DVB nor the VITA arbitration policies have formally been invoked. Thus, the only documented invocation of a mandatory SDO arbitration policy has been at the Blu-Ray Disc Association.¹²⁰

In 2013, Professors Mark Lemley and Carl Shapiro recommended that SDOs mandate that portfolio royalty rates for SEPs subject to FRAND licensing be determined through binding

¹¹⁴ See Jorge L. Contreras, *A Market Reliance Theory for FRAND Commitments and Other Patent Pledges*, 2015 UTAH L. REV. 479, 503-04 (2015) (describing the means by which SDO policies are made binding on participants, either through contract or corporate policy).

¹¹⁵ See Merges, *supra* note 27, at 1344-46 (describing arbitration requirements for aviation and automobile patent pools).

¹¹⁶ DVB PROJECT, *Memorandum of Understanding* § 14.7 (Jan. 3, 2014), http://www.dvb.org/resources/public/documents_site/dvb_mou.pdf.

¹¹⁷ VITA, *VSO Policies and Procedures*, Rev. 2.6, § 10.5 (Nov. 30, 2009), <http://www.vita.com/home/VSO/vso-pp-r2d6.pdf>. The VITA patent policy is best known for its requirement that patent holders disclose the maximum royalty rates they will charge for patents essential to VITA standards on an *ex ante* basis, a provision that was the subject of considerable controversy. See Contreras, *Ex Ante*, *supra* note 30, at 173-74.

¹¹⁸ BLU-RAY DISC ASSOCIATION, *By-laws, Amended & Restated Bylaws of Blu-Ray Disc Association*, cl. 16, (Oct. 1, 2010), http://www.blu-raydisc.com/Assets/Downloadablefile/BDA_Bylaws_%28v2.0%29-18618.pdf.

¹¹⁹ See Régibeau et al, *supra* note 30, at 79 (“While the majority of respondents seem to be favourable to the introduction of arbitration mechanisms, few appear ready to support making them mandatory”); Pierre Larouche, Jorge Padilla & Richard S. Taffet, *Settling FRAND Disputes: Is Mandatory Arbitration a Reasonable and Nondiscriminatory Alternative?* 10 J. COMPETITION L. & ECON. 581, 584 (2014) (“the mandatory-arbitration proposal is . . . an unnecessary intervention given the absence of market failure and, more importantly, given that it poses a significant risk of negatively impacting the successful adoption of technical, consensus-based industry standards”).

¹²⁰ The Blu-Ray arbitration policy became the subject of litigation in *Zoran Corp. v. DTS, Inc.*, 2009 U.S. Dist. LEXIS 6675 (N.D. Cal. 2009), a dispute concerning the SEP licensing terms offered by DTS to its fellow SDO member Zoran. Zoran brought an arbitration claim against DTS, claiming that DTS violated its FRAND commitment and simultaneously filed an antitrust and patent misuse suit against DTS in federal district court. Among other things, the court validated the Blu-Ray arbitration policy and stayed Zoran's antitrust and misuse claims pending resolution of the arbitration.

arbitration.¹²¹ The form of arbitration they proposed for this purpose was so-called “baseball” or “final offer” arbitration.¹²² Under this procedure, each party submits a sealed bid to an arbitrator, and the arbitrator is limited to choosing one of the competing bids without modification.¹²³ The Lemley-Shapiro proposal precipitated a cascade of opposition from others on grounds including due process considerations, concerns that the binary nature of baseball arbitration could not guaranty that a FRAND royalty would actually be chosen, concerns regarding bias and accuracy of the decision, and potential gamesmanship with respect to the parties’ submitted rates.¹²⁴ It is important to note that while the FRAND rate-setting tribunal proposed in this article bears some similarities to the Lemley-Shapiro proposal, the use of baseball arbitration is not suggested. While baseball arbitration may provide an expedient mechanism for disposing of disputes between two parties, it is not a suitable mechanism for determining an aggregate FRAND rate across multiple parties and patents (the need for *comprehensiveness*), nor does it satisfy the need for a solution that is *transparent* (given that the baseball-style arbitrator is not required to reveal his or her reasoning in reaching a decision) or *consistent* (given that baseball-style arbitrators cannot apply consistent methodologies when reaching decisions if they are bound only to select one of the two options presented to them by the parties). Accordingly, objections to the use of baseball-style arbitration for FRAND disputes need not be discussed in detail in the context of the present rate-setting proposal.

C. Rate-Setting

As discussed above, if parties cannot mutually agree on FRAND royalty rates, they currently have recourse to the courts as well as private arbitration. In both of these cases, the parties are bound by the rate determination made by an independent adjudicatory authority (subject to allowable appeals), after applicable evidence is presented and arguments are made. Thus, the notion that FRAND royalties can be established by an external (non-party, non-SDO) body is not a new one. However, as discussed above, courts around the world, and even within the same jurisdiction, may differ with regard to the methodologies they use, and the evidence that they consider, in determining FRAND rates. This inconsistency, which appears to be increasing, is one of the principal pitfalls of the current FRAND system. Thus, any effective solution should offer a consistent methodology for making FRAND rate determinations.

¹²¹ See Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1138.

¹²² See *id.* at 1144-46.

¹²³ There are several variants of baseball arbitration, including forms in which issues are decided serially, offers are revealed to or concealed from the counterparty, parties are permitted to submit two final offers, and more. See Elissa M. Meth, *Final Offer Arbitration: A Model for Dispute Resolution in Domestic and International Disputes*, 10 AM. REV. INT’L ARB. 383, 393-98 (1999).

¹²⁴ See Geradin, *supra* note 99, at 5 (objecting to loss of party freedom to self-determine arbitral rules and tribunal, as well as unsuitability of baseball arbitration to determining FRAND royalty rates); J. Gregory Sidak, *Mandating Final-Offer Arbitration of FRAND Royalties for Standard-Essential Patents*, 18 STAN. TECH. L. REV. 1, 38 (2014) (“The package that Lemley and Shapiro call “best practices” is in fact not a narrow proposal for binding baseball arbitration but rather a roadmap to redefine patent rights in a manner that would transfer wealth from inventors to infringers”); Contreras & Newman, *supra* note 20, at 43-44 (arbitrators’ lack of enunciated reasoning in a baseball arbitration decision does little to guide future behavior, nor can the result be assumed to be FRAND).

One well-known method for establishing rates in a consistent manner is allocating rate-setting authority to a single expert body. Rate-setting bodies have been established in a multitude of contexts throughout history. Richard Epstein traces the origin of rate-setting authority to Sir Thomas Hale's influential 1670 treatise *De Portibus Maris*, which discusses the need to regulate the prices charged by owners of wharves and other public accommodations "affected with a publick interest".¹²⁵ Epstein recounts the history of rate setting in England and the United States in industries including grain elevators, railroads and public utilities.¹²⁶ Interestingly, many of the rate-setting tribunals established in these early proceedings sought to ensure that rates charged by regulated providers would be "reasonable and nondiscriminatory" (RAND),¹²⁷ foreshadowing the FRAND commitments of today.¹²⁸

One of the touchstones of a rate-setting tribunal is that it should operate under a consistent set of principles and procedures, taking into account all relevant evidence pertinent to the rates to be set. Its decisions should also be written and made public so as to offer as much guidance as possible to the industry in shaping future conduct. The body should also continue in existence beyond the resolution of particular disputes, thus enabling its members to develop relevant expertise and custom that can be applied consistently from case to case. The expertise and industry knowledge resident within such a body can reduce the cost of each case decided, as the parties need not educate novice judges or juries regarding the practices and norms of the industry with each new case.¹²⁹

The benefits of consistency and continuity in a rate-setting body were acknowledged by Congress in connection with royalties under the compulsory license provisions of the U.S. Copyright Act.¹³⁰ In 1993, Congress enacted the Copyright Royalty Tribunal Reform Act, which provided that such royalty determinations would be made by a series of *ad hoc* three-member Copyright Arbitration Royalty Panels (CARPs) appointed by the Librarian of Congress.¹³¹ The CARPs and their rotating group of *ad hoc* arbitrators were heavily criticized, among other things, for unpredictability, inconsistency, lack of expertise and potential bias.¹³² As a result, in 2004

¹²⁵ Richard A. Epstein, *The History of Public Utility Rate Regulation in the United States Supreme Court: Of Reasonable and Nondiscriminatory Rates*, 38 J. SUP. CT. HIST. 345, 346 (2013) (quoting Matthew Hale, "De Portibus Maris" in 1 A COLLECTION OF TRACTS RELATIVE TO THE LAW OF ENGLAND 77-78 (Francis Hargrave, ed., 1787)).

¹²⁶ *Id.* at 350-65.

¹²⁷ *Id.* at 348-50, 352-57 (discussing, *inter alia*, the *Minnesota Rate Cases* ("equal and reasonable" rates) and *Smyth v. Ames* ("reasonable" rates)).

¹²⁸ See Jorge L. Contreras, *A Brief History of FRAND: Analyzing Current Debates in Standard Setting and Antitrust through a Historical Lens*, 80 ANTITRUST L.J. 39, 47-48 (2015) (tracing origin of SDO FRAND commitments to 1912 *Terminal Railroad* case that required access to St. Louis railroad terminal on "just and reasonable" terms).

¹²⁹ See Merges, *supra* note 27, at 1317 (noting inefficiencies of serial court litigation over copyright license rates and suggesting a "rate court" as a means for avoiding excessive transaction costs).

¹³⁰ The Copyright Act of 1976 established four categories of compulsory copyright license: musical mechanical, noncommercial broadcasting, jukebox and cable television. See 2 NIMMER ON COPYRIGHT § 7.27[A] (2018).

¹³¹ Copyright Royalty Tribunal Reform Act of 1993, Pub. L. 103-198, Sec. 1, 107 Stat. 2304 (Dec. 17, 1993). The 1993 Act replaced a prior rate-setting authority established under the 1976 Copyright Act. See 2 NIMMER ON COPYRIGHT, *supra* note 130, § 7.27[C].

¹³² See 2 NIMMER ON COPYRIGHT, *supra* note 130, § 7.27[C].

Congress replaced the *ad hoc* CARPs with a permanent Copyright Royalty Board (CRB) consisting of three full-time Copyright Royalty Judges.¹³³

While there are clearly distinctions between the compulsory licensing of copyrights and the FRAND licensing of standards-essential patents, there also many similarities between the CRB and the proposed FRAND Tribunal. These similarities begin with the fundamental purpose of each body: to establish rates for required intellectual property licenses when private parties are unable to reach agreement amongst themselves.¹³⁴ As such, several attributes of the CRB can usefully inform the design of the FRAND Tribunal. For instance, Copyright Royalty Judges are required by statute to possess certain expertise: one (the Chief Judge) must have experience in adjudications, arbitrations or trials, and the other two Judges must have significant knowledge in the field of copyright law and economics, respectively.¹³⁵ Likewise, in making their determinations, the CRB conducts hearings and evaluates substantial evidence and testimony from a range of fact and expert witnesses. Illustrating the scale and scope of these hearings, the Board's 2015 proceedings regarding rates for noninteractive webcasting lasted four months and generated 660 exhibits amounting to more than 12,000 pages, with oral testimony from forty-seven witnesses (including fourteen economists).¹³⁶ These observations suggest that it is possible to establish an expert rate-setting board with the capability, capacity and expertise to calculate royalty levels with respect to complex intellectual property matters.

Likewise, the CRB is charged with allocating a large royalty pool to the holders of copyrights in television broadcasts after they have been retransmitted by cable providers.¹³⁷ In some cases, hundreds or thousands of copyright holders can be implicated in these proceedings. The procedure by which the CRB makes these allocation decisions is informative. First, all copyright holders who wish to claim a share of the previous year's aggregate pool of cable retransmission royalties must file a claim with the CRB.¹³⁸ If all claimants agree how the pool should be allocated, then the CRB simply authorizes the distribution of funds in the portions agreed.¹³⁹ However, if the claimants cannot agree, then the CRB conducts a two-phase proceeding to determine the allocation of royalties.¹⁴⁰ These proceeding are explained by the D.C. Circuit as follows:

¹³³ H.R. Rep. No. 108-408, 108th Cong., 2d Sess. 20 (2004).

¹³⁴ See, e.g., *Recording Indus. Assn. of Am., Inc. v. Librarian of Congress*, 608 F.3d 862, 863 (D.C. Cir. 2010) (“By law, the Copyright Royalty Board sets the terms and rates for copyright royalties when copyright owners and licensees fail to negotiate terms and rates themselves.”)

¹³⁵ 17 U.S.C. § 802(a)(1).

¹³⁶ David R. Strickler, *Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis*, 12 REV. ECON. RES. ON COPYRIGHT ISSUES 1, 2 (2015). See also *RIAA*, 608 F.3d at 864 (CRB hearings regarding compulsory license rates in 2006 involved “28 days of live testimony, more than 140 exhibits, and more than 340 pleadings, motions, and orders.”)

¹³⁷ 17 U.S.C. § 802(a)(1). See *Indep. Producers Group v. Librarian of Cong.*, 792 F.3d 132, 135 (D.C. Cir. 2015) (“Under 17 U.S.C. § 111(c), after a broadcast television station transmits copyrighted material to its viewers, cable systems may retransmit that material without first obtaining the copyright owner’s permission. In exchange for that privilege, cable systems must deposit statutorily prescribed royalty fees with the Register of Copyrights. The Copyright Royalty Board is responsible for determining how to distribute those fees to the appropriate copyright owners”) (citations omitted).

¹³⁸ 17 U.S.C. § 111(d)(4)(A).

¹³⁹ *Id.* §§ 111(d)(4)(B)-(d)(4)(C), 801(b)(7).

¹⁴⁰ *Id.* § 111(d)(4)(B).

During Phase I, claimants may group themselves into categories based on the kind of programming that they own. Using evidence supplied by the claimants, the Board calculates the marketplace value of each category. It then assigns a percentage of the total royalty fee fund to each category based on its value relative to other categories. During Phase II, the Board subdivides the fees allotted to each category among the individual claimants within that category.

Phase I and Phase II proceedings follow the same set of procedures. First, the Board publishes a notice of the proceeding in the Federal Register. Claimants then petition to participate in the proceeding. A three-month voluntary negotiation period ensues, during which the participating claimants attempt to reach an agreement without assistance from the Board.

At the end of the voluntary negotiation period, if any disputes remain, the Board plays a more active role in the process. The Board accepts written statements from the participating claimants, allows the participating claimants to conduct discovery, and orders a post-discovery settlement conference. If the participating claimants are still unable to resolve their differences, the Board then conducts a hearing and issues a final determination. Finally, the Librarian of Congress publishes the Board's determination in the Federal Register and distributes the royalty fees.¹⁴¹

As the above description illustrates, royalty determination and distribution proceedings conducted by the CRB are not dissimilar to the types of determinations that would be required of a FRAND Tribunal: multiple parties with divergent interests are involved; the parties are initially permitted to work out an arrangement amongst themselves, but if they cannot, the tribunal's procedures are activated; and the tribunal is empowered to compel discovery, conduct hearings and otherwise adduce all relevant evidence.

Despite these potential similarities between the CRB and the proposed FRAND Tribunal, it is important to remember that the CRB (and most other rate-setting bodies) are governmentally-chartered entities whose determinations are subject to review by the courts under both the tribunal's authorizing legislation and the Administrative Procedure Act.¹⁴² This article does not propose the creation of a new governmental rate-setting body. In fact, it is precisely the potential for national governmental bodies (e.g., courts, agencies) to diverge in their rate-setting methodologies that calls for the establishment of a single, international non-governmental rate-setting tribunal for FRAND royalties, as discussed in greater detail in the next Section.

III. FRAMEWORK FOR A GLOBAL FRAND RATE-SETTING TRIBUNAL

As discussed in the preceding Sections, a mechanism is needed for the resolution of disputes concerning FRAND royalty rates that addresses the tripartite issues of *transparency*, *consistency*

¹⁴¹ *Indep. Producers Group*, 792 F.3d at 135-36 (citations omitted).

¹⁴² *See id.* at 136.

and *comprehensiveness*. This Section outlines a proposal for global, non-governmental FRAND rate-setting that takes into account each of these issues.

The major features of the proposed FRAND Tribunal are the following: SDOs can require (mandatory version) or offer (optional version) that their participants resolve all disputes regarding the level of FRAND royalties to be charged for SEPs covering the SDO's standards through an international, non-governmental rate-setting tribunal. Once the tribunal is engaged, it will collect all available evidence regarding the patented and unpatented technology included in a particular standard, determine an aggregate royalty rate for the standard, and apportion royalties among all SEP holders. Other than these rate-setting matters, the tribunal would adjudicate no other issues, and related contract and antitrust claims would continue to be subject to adjudication by any court(s) having jurisdiction. SDO participants would be required to refrain from seeking injunctive relief against potential licensees during the pendency of rate-setting proceedings, but once FRAND royalty rates are determined for a specific standard, a SEP holder will be permitted to pursue injunctions against product manufacturers that refuse to accept a license at the designated rate within a reasonable time. Additional details regarding this proposal are set forth below.

A. Mandatory and Optional Versions

There are two versions of the FRAND Tribunal procedure proposed by this article: a *mandatory* version and an *optional* version. The difference between these two versions relates solely to whether use of the FRAND Tribunal is optional or mandatory for participants in an SDO. In the optional version, the FRAND Tribunal is available for parties to use if they so wish, much as arbitration and other ADR mechanisms are currently available for the voluntary adjudication of FRAND disputes.¹⁴³ In the mandatory version, use of the FRAND Tribunal would be *required* to determine FRAND royalty rates when the parties cannot mutually agree on them.¹⁴⁴ Though such a requirement could be imposed through various mechanisms, including statutory, regulatory and treaty obligations, the most effective mechanism for imposing such a requirement is through binding provisions of SDO policies.¹⁴⁵

This article favors SDO policy requirements over governmental mandates (legislative or regulatory rules) for several reasons.¹⁴⁶ First, one of the problems affecting FRAND rate

¹⁴³ See Section II.A, *supra* (discussing voluntary arbitration of FRAND disputes).

¹⁴⁴ An even stronger variant exists ("pre-emptive"), in which the SDO refers *all* standards covered by FRAND-encumbered SEPs to the rate tribunal, even before a dispute arises. A pre-emptive mechanism would result in rate-setting for all of the SDO's FRAND-encumbered standards. While there are benefits to such a pre-emptive approach (e.g., rates would be set early, before disputes arise in the field), it could also be more burdensome on SDO participants and could increase transactional costs in settings in which no dispute over FRAND rates may ever have arisen. As such, this article does not recommend the pre-emptive approach.

¹⁴⁵ See notes x, *supra*, and accompanying text (discussing imposition of binding requirements on SDO participants).

¹⁴⁶ The choice of private over governmental adjudication has longstanding precedent in the area of intellectual property pooling, where private mechanisms have long been substituted for legal structures. See Merges, *supra* note 27, at 1347 (quoting 1935 Congressional hearings on patent pools).

determinations today is that of inconsistency across jurisdictions. As noted above, at least a dozen jurisdictions are involved in contemporary disputes over standardized products. The prospect of a dozen jurisdictions enacting identical legislation or regulatory requirements ceding the power of local courts to an international non-governmental body appears slim, and would most likely result in a patchwork of divergent and contradictory enactments that would do little to alleviate the issues that currently arise from inconsistency across jurisdictions. Of course, such consistency could be achieved, at least to some degree, if the commitment to utilize the tribunal were the subject of a treaty obligation. However, the difficulty of multilateral treaty negotiation is significant, particularly in the current geopolitical environment, and it is extremely unlikely that such a treaty could be negotiated and ratified within a reasonable period of time, if ever.

An SDO-based requirement, while not universal in scope (i.e., it pertains only to participants in SDOs that impose the requirement) at least offers consistency across licenses pertaining to the imposing SDO's standards, irrespective of the jurisdictions in which its participants operate. That is, if a particular SDO mandates that its participants utilize the proposed rate tribunal to resolve FRAND rate disputes, and that mandate is reflected in the SDO's bylaws, corporate policies, membership agreements or other documentation that is binding on its participants, then an SDO participant will be obliged to utilize the tribunal whether it is based in the U.S., Europe or Japan and whether an unlicensed manufacturer of standardized products is based in China, Korea or Brazil.

The mandatory version of this proposal, though in some respects novel, is by no means unprecedented. As discussed in Section II.B above, several SDOs already require arbitration of disputes by their participants and, in the one case in which this arbitration requirement was challenged, it was upheld.¹⁴⁷ Likewise, arbitration of disputes is mandated in a variety of other contexts, including WIPO's Uniform Dispute Resolution Procedure for Internet domain name controversies.¹⁴⁸

One important question relating to mandatory use of the proposed FRAND Tribunal is the degree to which an SDO may require SDO participants to arbitrate with non-participants (i.e., manufacturers of standardized products that were not involved in developing the standard), and to require that non-participants participate in such dispute resolution proceedings. As discussed above, an SDO may impose binding requirements upon its participants through a variety of contractual and corporate means, but it has less authority to bind organizations that have not voluntarily acceded to its rules and policies.¹⁴⁹ Yet, in order for the proposed FRAND Tribunal to achieve the goal of comprehensiveness, it should take into account transactions with SDO non-participants. There are several ways that this issue could be addressed. First, the SDO could affirmatively require, as a condition to the use of its standards (through a clickwrap or similar

¹⁴⁷ See note 120, *supra*, and accompanying text (discussing *Zoran* case).

¹⁴⁸ See note 113, *supra*, and accompanying text.

¹⁴⁹ See, e.g., Jorge L. Contreras, *When a Stranger Calls—Standards Outsiders and Unencumbered Patents*, 12 J. COMP. L. & ECON. 507 (2016) (discussing the implications of SDO "outsiders" holding SEPs); Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1153 (discussing issues relating to arbitration with unwilling implementers).

agreement attached to use of downloading of its standards documents¹⁵⁰) that such user must agree to resolve any disputes regarding FRAND royalties charged with respect to those standards through the FRAND Tribunal.¹⁵¹ Second, if an SDO did not wish to impose such a condition on the use of its standards, it could simply impose the requirement on its participants and hope, not unreasonably, that non-participants would view this dispute resolution mechanism as superior to litigation and thus participate.¹⁵² In many cases, however, major product manufacturers participate in SDOs and even hold SEPs themselves. Thus, the number of firms that would not formally be bound by the proposed adjudication requirements is likely to be small.

It is important to note that while the mandatory version of this proposal is recommended, the optional version could also have a significant positive impact on the FRAND royalty landscape. Under both versions of this proposal, a rate-setting proceeding is triggered by the emergence of a dispute between a SEP holder and a product manufacturer over the appropriate level of FRAND royalties. Once the proceeding is triggered, whether by operation of the SDO's policy (mandatory) or by mutual agreement of the parties (optional), the tribunal will proceed to gather all relevant evidence concerning the value of patented and unpatented technology contributing to the standard and develop both an aggregate royalty rate applicable to all SEPs covering the standard as well as an individual allocation of that aggregate royalty to each SEP holder (i.e., an allocation schedule listing each SEP holder and the portion of the aggregate FRAND royalty to which it is entitled). Thus, the FRAND Tribunal's findings will not be limited to the parties that initiated the proceeding – they will be *comprehensive*.

In the mandatory version of the proposal, every other SEP holder with patents covering the relevant standard would be bound to offer FRAND royalty rates consistent with the allocation schedule developed by the tribunal. Additional proceedings are not required, thus reducing the overall transactional burden on the market.¹⁵³

In the optional version of the proposal, other SEP holders are not strictly bound by the findings of the FRAND Tribunal in the initial proceeding. However, the FRAND Tribunal's proceedings, and the resulting schedule of FRAND allocations to each SEP holder, will be made public¹⁵⁴ and will thus be available to any court or arbitral tribunal that later parties choose to adjudicate their dispute. As such, it is likely that the FRAND Tribunal's findings will serve, at a minimum, as informative to a subsequent court or arbitrator and, preferably, as a presumptive finding regarding

¹⁵⁰ See, generally, Stephen Y. Chow, *A Snapshot of Online Contracting Two Decades After ProCD v. Zeidenberger*, 73 BUS. L. 267 (2017) (overview of contract law surrounding shrinkwrap and clickwrap agreements).

¹⁵¹ Notwithstanding such agreements, many manufacturers simply purchase commodity chipsets already loaded with many standardized technologies (e.g., Wi-Fi, wireless telecommunications, etc.), making it unlikely that they will ever download or access the relevant standards themselves.

¹⁵² For example, the FTC's Google/Motorola Order requires Google to submit to arbitration with *any* potential licensee of its SEPs prior to seeking injunctive relief. Google Order, *supra* note 102, at 5.

¹⁵³ One important issue for the FRAND Tribunal to decide will be the effect of its rate determination on license agreements entered into prior to that determination. Specifically, whether the FRAND rate determined by the tribunal can be used by a licensee to challenge a higher royalty rate previously agreed. For a discussion of the effect of the FRAND non-discrimination commitment over time, see Contreras & Layne-Farrar, *supra* note 82, at x.

¹⁵⁴ See Section III.G, *infra*.

the appropriate FRAND rate for the standard in dispute. Thus, even under the optional version of this proposal, litigation time and cost may be reduced on an industry-wide basis.

It is anticipated that some SDOs may be reluctant, at first, to adopt the mandatory version of this proposal and may, instead, choose the optional version.¹⁵⁵ Use of the optional version could serve as a “trial run” of the FRAND Tribunal for early-adopter SDOs, allowing them to observe the effectiveness of the FRAND Tribunal and its decision-making processes. If an SDO is satisfied with the FRAND Tribunal during such a trial period, it may later choose to adopt the mandatory version of this proposal.

B. Establishment, Composition and Compensation of Tribunal

In terms of the institutional “home” of the FRAND Tribunal, it is likely that a governmental agency such as a national competition regulator or patent office, whether in the U.S., Europe, Japan or elsewhere, would raise issues of inherent bias and favoritism, and thus attract less multilateral support than an international or non-governmental organization. Thus, a recognized non-governmental international body would likely be a better host for the FRAND Tribunal. Such bodies include institutions established specifically for the resolution of international disputes such as the International Chamber of Commerce (ICC), American Arbitration Association (AAA) and the London Court of International Arbitration (LCIA), or an international non-governmental organization with a broader focus on technology and economic issues such as the World Intellectual Property Organization (WIPO) and the Organization for Economic Cooperation and Development (OECD).¹⁵⁶

The initial expenses of forming the FRAND Tribunal and selecting its members should be borne by the FRAND Tribunal’s host institution, though it is not inconceivable that government agencies supporting the improved determination of FRAND royalties may also extend funding to this effort. Contributions from corporate donors could also be accepted, but it is important that the impartiality of the FRAND Tribunal be maintained. Thus, corporate interests should have no role, formal or informal, in the governance or oversight of the tribunal.

It is anticipated that the FRAND Tribunal will have ongoing existence and will thus have a pool of arbitrators available to hear cases as they arise. Individual matters will be heard by panels of three arbitrators selected at random from the pool, with a chair selected from among the three panel members. Individual compensation of the three panel members should be equal, with no additional compensation to the chair.

¹⁵⁵ A similar pattern of adoption was observed in 2006-07, when several SDOs considered the adoption of *ex ante* licensing disclosure policies (see notes x, *supra*). Of three SDOs that explicitly considered such policies, only one (VITA) adopted a mandatory version of the policy. The other two (IEEE and ETSI) adopted optional versions. See Contreras, *Ex Ante*, *supra* note 30 (discussing this episode).

¹⁵⁶ Care should be taken, however, to avoid linking the tribunal to an industry association with a clear bias either toward patent holders or product manufacturers.

All members of the FRAND Tribunal will be selected by consensus of the SDOs that have mandated the tribunal's use in resolving FRAND disputes. Each arbitrator must have substantial expertise in technical standardization processes and not be employed by, or serve as a consultant to, any private company having a direct interest in the outcome of such disputes (i.e., a SEP holder or product manufacturer). The tribunal should not include individuals who serve primarily as government officials. It is anticipated that tribunal members will generally consist of retired judges, private legal practitioners and academics.¹⁵⁷

Unlike conventional arbitration, the fees of the tribunal will not be paid by the parties initiating the proceeding.¹⁵⁸ Rather, it is proposed that a small surcharge be imposed on each royalty payment concerning a SEP covering the relevant standard. These surcharges would be collected by the tribunal and used to cover the tribunal's costs and expenses, including payment to the individual arbitrators. This approach would fairly spread the cost of the FRAND Tribunal among all users of the standard and holders of patents essential to the standard, rather than burdening the initial parties with the cost of a proceeding that is likely to benefit a much larger segment of the market.¹⁵⁹

This being said, the compensation of individual members of the tribunal should be based on a fixed or hourly rate and should not be tied to royalty revenue.¹⁶⁰ Creating any dependency between arbitrator compensation and patent royalty revenue would have the clear potential to bias tribunal rulings in favor of higher royalty determinations. Individual tribunal member compensation should thus be wholly independent of the outcome of any given rate determination.

C. Tribunal's Limited Authority

The FRAND Tribunal's authority will be limited to the determination of worldwide FRAND royalty rates for all SEPs covering the standard(s) in question, as well as the allocation of these royalties among holders of the relevant SEPs. To make these determinations, the tribunal will likely be required to consider issues of patent validity and essentiality.¹⁶¹ The tribunal's authority

¹⁵⁷ With regard to the selection of a committee of impartial experts on FRAND-related issues, it may be informative to review the selection process and criteria used by the U.S. National Academies of Science when forming its Committee on Intellectual Property Management in Standard-Setting Processes (see NRC REPORT, *supra* note 9, at v (listing committee members) (the author was a member of this committee), and the European Commission's recent Call for Applications for the Selection of Members of the Group of Experts on Licensing and Valuation of Standard Essential Patents (Jul. 5, 2018), https://ec.europa.eu/growth/content/call-experts-licensing-and-valuation-standard-essential-patents_en .

¹⁵⁸ These fees, which include both charges for the arbitrators' time and expenses, the facility, and the arbitral tribunal, can be sizable. See Christopher R. Drahozal & Stephen J. Ware, *Why Do Businesses Use (or Not Use) Arbitration Clauses*, 25 OHIO ST. J. DISPUTE RESOL. 433, 447-49 (2010) (discussing arbitral fees).

¹⁵⁹ This approach bears similarities to the manner in which ICANN funds its own operations through a surcharge on the fees paid by every domain name registrant.

¹⁶⁰ *But see* Eisenberg & Miller, *supra* note 100, at 340 (noting concerns with arbitrators' "short-term economic incentives to prolong the proceedings").

¹⁶¹ It is possible that an arbitrator's consideration of the validity and infringement of SEPs in determining a FRAND royalty rate might not require a determination of the validity and infringement of every patent under consideration, but could be handled on a statistical, aggregate or other less time-intensive manner. See Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1152-56 (evidence regarding patent validity and essentiality should be

will not, however, extend to the adjudication of other claims between parties (e.g., breach of contract, antitrust/competition law violations, patent misuse, fraud, inequitable conduct and other forms of malfeasance), such other claims being subject to adjudication in any court having jurisdiction over the parties.

Though most recent disputes regarding FRAND licenses have involved the determination of royalty rates, many non-royalty terms and conditions are included in the license agreements between SEP holders and manufacturers (e.g., reciprocity, grant-backs, defensive suspension, transfer of obligations, term, termination, etc.).¹⁶² In some cases, arbitrators and courts actively dictate these non-royalty terms.¹⁶³ However, this article recommends that the FRAND Tribunal limit its findings solely to FRAND royalty rates, and that disputes regarding other license agreement terms and their breach be decided through other adjudicatory mechanisms. This narrow and exclusive focus on FRAND royalty rates is critical, as the FRAND Tribunal, unlike an ordinary arbitrator, will consider the entire panoply of patents covering a particular standard held by multiple patent holders, rather than a particular licensing transaction between a single patent holder and manufacturer.

D. Tribunal Proceedings

A FRAND Tribunal proceeding will be initiated when any SDO participant petitions the tribunal for a FRAND rate determination with respect to a standard promulgated (or under development) by a participating SDO. In making its determinations, the FRAND Tribunal will consider evidence from all interested parties, including SEP holders, product manufacturers, SDO representatives and civil society/consumers.¹⁶⁴ SDO participants will agree to provide the tribunal with all reasonable information concerning their SEPs covering a standard under review, including licensing terms offered to other parties (which will be disclosed confidentially to the tribunal and not shared with other SDO participants except on an aggregated basis). Like the Copyright Royalty Board, the tribunal may choose to admit hearsay evidence and allow limited discovery.¹⁶⁵

considered); Torsten Fey, Euro. Comm'n Enter. & Indus. Directorate, Speaking Points Delivered at ETSI IPR#16 by the European Commission, Sept. 20, 2013 ("Implementers should have the right to bring material information on validity, essentiality and infringement to the adjudication process. But there should be no obligation for the arbitrator or adjudicator to rule on all of these issues.").

¹⁶² See, e.g., AM. BAR ASS'N, COMM. ON TECHNICAL STANDARDIZATION, SECTION OF SCI. & TECH. LAW, STANDARDS DEV. PATENT POLICY MANUAL 56-67 (Jorge L. Contreras, ed., 2007) (discussing material terms of SEP license agreements).

¹⁶³ The FTC, in its Google/Motorola Order, required that Google commit to enter into license agreements on "terms and conditions established by the arbitrator," including terms and conditions beyond the bare royalty rate. Google Order, *supra* note 102, at 10. Likewise, the UK court in *Unwired Planet* appended a draft license agreement to its opinion in the case, requiring that the implementer enter into an agreement on those precise terms. *Unwired Planet*, [2017] EWHC 711 at x.

¹⁶⁴ There is ample precedent for such multi-party proceedings, for example, in the context of copyright rate-setting. See Strickler, *supra* note 136; Bartlett & Contreras, *supra* note 22 (discussing multi-party interpleader proceedings in a range of contexts).

¹⁶⁵ 17 U.S.C. § 803(b)(5)(C)(iii)-(iv) (Copyright Royalty Board - admissible evidence and discovery).

Given historical evidence of over-declaration of SEPs at major SDOs,¹⁶⁶ the FRAND Tribunal will be authorized to consider the essentiality of patents to the standards in question. However, a patent-by-patent analysis, particularly when hundreds or thousands of patents are at issue, would be impractical. Thus, it is advisable that an essentiality analysis be conducted only in response to a party's presentation of some evidence that a particular patent or patents is not essential to the standard in question. That is, there should be a rebuttable presumption that declared SEPs are essential to the standard.

The FRAND Tribunal should aim to resolve all matters as expeditiously as possible, preferably within twelve months of initiation. While aggressive, this timing is feasible if all parties cooperate with the tribunal's requests and discovery is limited. Unlike a court, the FRAND Tribunal panel in any given case will not have a docket of other matters to contend with, enabling it to devote substantial attention to the matter at hand.

The FRAND Tribunal's formal procedures¹⁶⁷ will be developed in compliance with the requirements of the New York Convention on the International Enforcement of Arbitral Awards¹⁶⁸ so as to be binding and enforceable in all Convention signatory states. This feature of the FRAND Tribunal is critical, as recognition of its determinations under the Convention obviates the need for independent national rate-setting proceedings, thus eliminating the *inconsistency* that arises when multiple adjudicatory bodies address the same issues using different methodological approaches. Herein lies a significant advantage of situating the tribunal within a recognized international arbitral body that has already developed a baseline set of procedural rules and practices that are consistent with the requirements of the Convention.

E. Stay of Injunctive Relief

The question whether a SEP holder is legally permitted to seek injunctive relief against a potential licensee to whom it owes a FRAND commitment has been debated extensively by commentators, governmental agencies, and courts.¹⁶⁹ Arguments have been made both for and against the availability of such injunctions under equitable remedies law, antitrust and competition law, and basic economic principles. At most, it can safely be said that a FRAND commitment limits a SEP holder's ability to seek injunctive relief against an infringing product manufacturer, so long as that manufacturer is willing to accept a license on FRAND terms. The precise contours

¹⁶⁶ See notes x, *supra*, and accompanying text.

¹⁶⁷ *E.g.*, time, location and language of proceedings, rules surrounding timing of discovery, length and format of written submissions, oral arguments, etc.

¹⁶⁸ New York Convention, *supra* note 101.

¹⁶⁹ For an overview of this debate and the current state of the law in various countries, see, *e.g.*, Jorge L. Contreras, et al., *The Effect of FRAND Commitments on Patent Remedies*, in PATENT REMEDIES AND COMPLEX PRODUCTS: TOWARD A GLOBAL CONSENSUS, Ch. 5 (C. Bradford Biddle et al, eds., 2019, forthcoming); J. Gregory Sidak, *Injunctive Relief and the FRAND Commitment in the United States*, in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 24 (Jorge L. Contreras, ed., 2017); Pierre Larouche & Nicolo Zingales, *Injunctive Relief in the EU—Intellectual Property and Competition Law at the Remedies Stage*, in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 25 (Jorge L. Contreras, ed., 2017).

and conditions of that limitation are dependent, however, on a variety of factors that vary from jurisdiction to jurisdiction and which have evolved over time.

One thing that is relatively clear, however, is the ability of parties *voluntarily* to waive their rights to seek injunctive relief through private mechanisms. Recently, such waivers have featured prominently in the standard-setting context. In 2012, several large technology firms voluntarily committed not to seek injunctions under standards-essential patents in connection with DOJ approval of their patent-related acquisitions,¹⁷⁰ and the following year both Robert Bosch and Google/Motorola agreed not to seek injunctions preventing the use of certain SEPs in settlement of actions brought against them by the FTC.¹⁷¹ Then in 2015, IEEE, a major SDO, approved an amendment to its patent policy that requires its members to forego injunctive relief against manufacturers of products implementing IEEE standards except under certain limited circumstances.¹⁷²

This article recommends that SDOs impose a moratorium on injunctive relief during the pendency of FRAND rate-setting proceedings, specifically those that are mandatory, but possibly optional proceedings as well.¹⁷³ Doing so will reduce potential disruptions to the market while the financial terms of required FRAND licenses are determined and will eliminate the threat that SEP holders could assert against product manufacturers to distort the testimony and evidence brought forward at rate-setting proceedings. This prohibition on seeking injunctive relief would not, however, be permanent. Once FRAND royalty rates are determined for a specific standard, a SEP holder will be permitted to pursue injunctions against product manufacturers that refuse to accept an otherwise fair, reasonable and nondiscriminatory license at the designated rate within a reasonable period of time.¹⁷⁴

F. Tribunal Determinations

The FRAND Tribunal will make decisions by majority vote, with any dissenting views specifically set forth in the tribunal's written opinion.¹⁷⁵ The FRAND Tribunal's sole charge will

¹⁷⁰ See Jorge L. Contreras, The February of FRAND, Patently-O blog, Mar. 6, 2012, <https://patentlyo.com/patent/2012/03/february-of-frand.html> (discussing commitments made by Apple, Microsoft and Motorola to refrain from seeking injunctive relief against infringers of SEPs).

¹⁷¹ Google Order, *supra* note 102; In re. Robert Bosch GmbH, 155 F.T.C. 713 (2013).

¹⁷² See IEEE Policy, *supra* note 15. This amendment was admittedly controversial. See, e.g., J. Gregory Sidak, *The Antitrust Division's Devaluation of Standard-Essential Patents*, 104 GEORGETOWN L.J. ONLINE 48 (2015).

¹⁷³ See Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1142-43 ("SSOs should explicitly state in their IP policies that a patent holder making a FRAND commitment has given up its right to seek an injunction against any willing licensee for infringement of its standard-essential patents").

¹⁷⁴ A useful guide for determining when a potential licensee is not acting in good faith may be the line of cases deriving from the European Court of Justice decision in *Huawei v. ZTE*, Eur. Court of Justice, Case C-170/13 (2015) (providing guidelines for assessing whether SEP holder's seeking of injunctive relief constitutes violation of EU competition law, dependent in part on conduct of the potential licensee). See, e.g., Jacob & Milner, *supra* note 90; Larouche & Zingales, *supra* note 169; Nicolas Petit, *EU Competition Law Analysis of FRAND Disputes*, in CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: COMPETITION, ANTITRUST, AND PATENTS, Ch. 17 (Jorge L. Contreras, ed. 2017).

¹⁷⁵ Cf. 17 U.S.C. § 803(a)(3) (Copyright Royalty Board makes decisions by majority vote).

be to determine a top-down, aggregate FRAND royalty rate applicable to the standard in question as well as an allocation of the resulting royalties among the different holders of SEPs covering that standard. The FRAND Tribunal will be empowered to utilize any reasonable methodology to determine such rates. Rates may be structured by the tribunal according to any reasonable rate schedule (including rates that vary by country, are volume-based, and which vary by tier in the distribution chain), subject to any particular limitations of the relevant SDO rules.

The allocation of any aggregate (top-down) royalty established for a particular standard will be presumed to be divided among individual SEPs on a numerical proportionality basis (i.e., one patent, one share), unless the evidence strongly suggests that particular SEPs are deserving of a greater or lesser share.¹⁷⁶ It will be up to the FRAND Tribunal to evaluate such evidence and devise an appropriate allocation methodology.

Unlike arbitral and rate-setting bodies established under national law, decisions of the FRAND Tribunal will not normally be subject to judicial oversight or review.¹⁷⁷ The only challenges to tribunal decisions will be those judicial challenges permitted to be made to any arbitral decision under the New York Convention, i.e., on grounds of bias, contradiction of law and public policy.¹⁷⁸

Importantly, the FRAND Tribunal will have no enforcement or collection authority. It will merely determine FRAND rates as set forth above. In the event of non-payment, the relevant parties will be entitled to seek appropriate administrative or legal remedies.

G. Public Disclosure

As a general rule, arbitration proceedings are conducted privately and all parties, including the arbitrators, are obliged, either by law, ethical obligation, or contract, to maintain the confidentiality of the evidence presented, the parties' arguments, and the arbitral award.¹⁷⁹ The proceedings of the FRAND Tribunal, however, should be different. Its determinations, reasoning and methodology should be made publicly available in the interest of transparency and fostering the consistency of future decisions.

It is particularly important that the FRAND Tribunal explain its reasoning in a detailed written opinion, in which any dissenting views are clearly enunciated. Reasoned decisions are valuable, as they inform the parties of the grounds on which the tribunal's rulings are based. Moreover, an unreasoned arbitral award is more vulnerable to subsequent judicial challenge on grounds of public

¹⁷⁶ See Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1151 (FRAND royalties need not be determined on a patent-by-patent basis).

¹⁷⁷ For example, royalty rate decisions of the Copyright Royalty Board are subject to appeal to the Court of Appeals for the District of Columbia Circuit. 17 U.S.C. § 803(d)(1) (2004).

¹⁷⁸ See BORN, *supra* note 111, at x.

¹⁷⁹ See generally TREVOR COOK & ALEJANDRO I. GARCIA, *INTERNATIONAL INTELLECTUAL PROPERTY ARBITRATION*, Ch.9 (2010).

policy.¹⁸⁰ As in judicial proceedings, certain highly confidential materials may be placed under protective order and excluded from the public record.¹⁸¹

There are a number of positive effects that will arise from the public disclosure of the FRAND Tribunal's proceedings. As numerous commentators have noted, it is notoriously difficult to determine, or even estimate, a FRAND royalty rate when the license agreements and settlements relating to the relevant SEPs are confidential. Opening the results of FRAND rate-setting proceedings to the public would begin to establish a base of information relating to SEP royalties that could help parties to negotiate more appropriate FRAND licenses without resorting to dispute resolution and make verification of SEP holders' compliance with the non-discrimination prong of the FRAND requirement easier.¹⁸²

H. Antitrust and Competition Considerations

As noted above, some SDOs have historically been wary of participating in or facilitating the discussion of patent royalty rates or other commercial issues pertaining to products implementing their standards.¹⁸³ This wariness has been fueled largely by concerns over potential liability under antitrust and competition law. Specifically, it has been suggested that an SDO may act as a vehicle for product manufacturers collectively to exert anticompetitive pressure against a SEP holder, potentially depressing royalty rates below reasonable levels, and even to zero.¹⁸⁴ Another objection is based on the potential chilling effect that such concerted action could have on innovation around standardized technologies.¹⁸⁵ While numerous commentators, including the author, have argued that such collective negotiation could have substantial pro-competitive effects,¹⁸⁶ Régibeau et al.

¹⁸⁰ See *id.* at 283; BORN, *supra* note 111, at 832, cmt. 16 (unreasoned awards are vulnerable to revocation by courts based on public policy grounds), and 918 (unreasoned awards are less likely to be given collateral estoppel effect if re-litigated).

¹⁸¹ For example, certain documents, such as license agreements covering both SEPs and other intellectual property rights and non-standardized technologies, may have legitimate claims to some degree of confidentiality. It should be up to the tribunal to fashion reasonable rules regarding the protection of confidential information adduced during its proceedings.

¹⁸² See Lemley & Shapiro, *Simple Approach*, *supra* note 23, at 1145-46 ("secrecy would undermine the effectiveness of the FRAND regime").

¹⁸³ See notes 15-17, *supra*, and accompanying text (discussing SDO policies against intervening in FRAND licensing or interpretation).

¹⁸⁴ J. Gregory Sidak, *Patent Holdup and Oligopsonistic Collusion in Standard-Setting Organizations*, 5 J. COMPETITION L. & ECON. 123, 126, 142-51 (2009) ("ex ante collective action that is privately undertaken in an [SDO] to counteract potential patent holdup may facilitate, if not serve as an outright façade for, horizontal price fixing by oligopsonists of the patented input.")

¹⁸⁵ Farrell et al., *supra* note 78, at 632 ("The potential danger ... is that by negotiating as a group, technology users could extract such favourable terms from patent holders (another form of hold-up) that they will inefficiently discourage future innovation").

¹⁸⁶ See, e.g., Contreras, *Aggregated Royalties*, *supra* note 16, at 705 ("Like the holders of pooled patents, SDO participants can achieve efficiencies and other procompetitive benefits by coordinating the aggregate rates at which SEPs covering a standard are licensed"); Kühn, Scott Morton & Shelanski, *supra* note 14, at 3 ("This joint action is acceptable for society because it trades off possible technology competition among SSO members for production of a standard that can speed innovation and expand output"); Lemley & Shapiro, *Patent Holdup*, *supra* note 51, at 2043-44 (collective negotiation of SEP royalty rates is "very likely to be procompetitive if the technology would otherwise

may be correct in their observation that “part of the antitrust community still has an almost instinctive allergy to the idea of rivals setting prices together.”¹⁸⁷

The proposed FRAND Tribunal addresses these concerns by removing any price determination or negotiation activity from the SDO or its participants and placing rate-setting authority in the hands of an independent arbitral body. As a result, the proposed rate-setting mechanism, like any neutral arbitration procedure, should remain free from antitrust and competition law concerns.

I. Tradeoffs: Precision versus Efficiency

Admittedly, there are tradeoffs involved when non-judicial dispute resolution mechanisms are used in lieu of litigation. In general, the arbitration of commercial disputes has been criticized due to the unavailability of appellate review of decisions: if an arbitrator makes a mistake, it is often difficult or impossible to correct.¹⁸⁸ As the Court of Appeals for the Tenth Circuit noted in 1994, “[a]rbitration provides neither the procedural protections nor the assurance of the proper application of substantive law offered by the judicial system”.¹⁸⁹ For these reasons, firms may find arbitration of disputes too risky, particularly in the case of “bet the company” litigation.¹⁹⁰ One well-known study of arbitration clauses in public company contracts found that only eleven percent of all business-to-business contracts (and thirty-three percent of licensing agreements) included arbitration clauses.¹⁹¹

Like bilateral arbitration, the proposed rate-setting mechanism may not result in awards to individual patent holders that would be equivalent to what they might receive in national litigation. Moreover, it is not expected that the allocations made by the FRAND Tribunal will precisely account for the value of each patent held in a particular firm’s portfolio, nor does the tribunal format allow for appeal of results that are not to the liking of a particular party.

Nevertheless, it is worth remembering that a high degree of precision is neither expected nor delivered in the private bilateral negotiations that result in FRAND licenses today, where portfolios of hundreds or thousands of patents are licensed for a simple percentage royalty rate. Given the large number of patents and patent holders relevant to many of today’s most critical industry

be so encumbered by patent rights and blocking positions that the standard would have difficulty moving forward in the market”); Lemley, *Ten Things*, *supra* note 105, at 161 (“the law ought to permit SSO members the latitude to discuss royalty rates collectively before the standard is set”); Farrell et al, *supra* note 78, at 635 (one beneficial approach “would be to permit members of an SSO collectively to negotiate royalties with patent holders, so long as membership in the SSO does not preclude any individual firm, or group of firms acting in concert, from producing competing products that do not comply with the standard”); Robert A. Skitol, *Concerted Buying Power: Its Potential for Addressing the Patent Holdup Problem in Standard Setting*, 72 ANTITRUST L.J. 727, 735 (2005) (joint negotiation may improve the “quality of decision making” within an SDO and “increase[] the prospects for achieving a procompetitive ‘open’ standards outcome”); Balto & Prywes, *supra* note 107 (proposing that SDO members should be able to discuss and negotiate royalty terms with SEP holders).

¹⁸⁷ Régibeau, et al, *supra* note 30, at 45.

¹⁸⁸ See Drahozal & Ware, *supra* note 158, at 455 (“Just as a trial court’s decision may be erroneous, so might an arbitrator’s award. But it is far more likely that a trial court’s erroneous ruling will be overturned on appeal than an arbitrator’s erroneous ruling will be vacated by a court”); Eisenberg & Miller, *supra* note 100, at 340.

¹⁸⁹ Bowles Financial Group, Inc. v. Stifel, Nicolaus & Co., Inc., 22 F.3d 1010, 101 (10th Cir. 1994).

¹⁹⁰ Drahozal & Ware, *supra* note 158, at 455.

¹⁹¹ Eisenberg & Miller, *supra* note 100, at 351 Table 2.

standards, precise compensation on a patent-by-patent basis is not a realistic expectation nor a necessary condition to the functioning of the market. Rather, in order for the marketplace to operate efficiently and to enable the broadest dissemination of standardized technology around the world, the proposal set forth in this article aspires to produce, in the words of the Internet standards body IETF, “rough consensus and running code”.¹⁹² Thus, it is hoped that a small sacrifice in terms of precision will achieve larger gains in terms of overall efficiency, predictability and market stability.

CONCLUSIONS

The commitment to license patents that are essential to technical interoperability standards on FRAND terms is intended to foster the rapid development and broad adoption of standards necessary to the modern technological infrastructure. Yet disputes over FRAND royalty rates continue to bedevil participants in global technology markets, leading to increased litigation and progressively inconsistent results from jurisdiction to jurisdiction. Moreover, the lack of transparency in current licensing transactions, coupled with the narrow focus of adjudicators on individual parties rather than the totality of rights associated with a particular standard, have added further uncertainty and instability to the FRAND licensing system. Any proposal to reform the FRAND licensing system must thus address three key aspects that are currently lacking in the system: *transparency*, *consistency* and *comprehensiveness*.

This article proposes the establishment of a global FRAND rate-setting tribunal designed to reduce negotiation, litigation and other excess transaction costs while achieving a fair allocation of resources among affected stakeholders. It does so through a mechanism that seeks, to the greatest extent possible, to achieve the tripartite goals of transparency, consistency and comprehensiveness. Specifically, it calls for the establishment of an international, non-governmental FRAND Tribunal, and the modification of SDO policies either to mandate or make available the resolution of FRAND royalty disputes through this mechanism. Like existing rate-setting bodies such as the U.S. Copyright Royalty Board, the FRAND Tribunal will collect all available evidence regarding the patented and unpatented technology involved in a particular standard, determine an aggregate (top-down) royalty rate for the standard as a whole, and appropriately apportion royalties among all holders of essential patents. Other than these rate-setting matters, the FRAND Tribunal will adjudicate no other issues, and related claims for breach of contract and antitrust and competition law violations would continue to be subject to adjudication by any court(s) having jurisdiction. SDO participants would be required to refrain from seeking injunctive relief against potential licensees during the pendency of rate-setting proceedings, but once FRAND royalty rates are determined for a specific standard, a patent holder

¹⁹² Dave Clark, Senior Research Scientist, Mass. Inst. Tech, A Cloudy Crystal Ball - Visions of the Future, Presentation at the Proceedings of the Twenty-Fourth Internet Engineering Task Force (July 16, 1992), *in* PROCEEDINGS OF THE TWENTY-FOURTH INTERNET ENGINEERING TASK FORCE 543, slide 19 (Megan Davies et al. eds., 1992), <https://www.ietf.org/proceedings/24.pdf>.

will be permitted to pursue injunctions against product manufacturers that refuse to accept a license at the designated rate.

Though the proposed rate-setting mechanism will not result in awards to individual patent holders that precisely account for the value of each patent, this degree of precision is not a realistic expectation nor a necessary condition to the functioning of the market. Rather, it is hoped that the proposed FRAND Tribunal will make the FRAND licensing marketplace operate more efficiently by eliminating excessive transaction costs and enabling broad dissemination of standardized technology around the world, while still achieving a fair distribution of proceeds among affected stakeholders.

While further details regarding the implementation and operation of the FRAND Tribunal must be considered and debated, it is hoped that such a mechanism will be viewed as a potential means to bring greater predictability and stability to the technology development ecosystem while reducing costly and disruptive litigation.