NO FORUM TO RULE THEM ALL: COMITY AND CONFLICT IN TRANSNATIONAL FRAND DISPUTES

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Abstract: Recent years have seen an explosion in FRAND litigation, in which parties commit to license intellectual property under "fair, reasonable and non-discriminatory" (FRAND) terms, but they cannot agree on the meaning of that commitment. Much of this litigation is multinational and involves coordinating patent, antitrust, and contract claims across several jurisdictions. A number of courts and commentators have aimed to centralize and thereby streamline these disputes, whether by consolidating all litigation in one judicial forum or through the creation of a comprehensive arbitral process. This Article argues that such efforts are misguided—FRAND disputes are particularly unamenable to centralization, and the costs of centralizing FRAND disputes are high. Rather, absent other agreement between the parties, FRAND disputes should be resolved through the ordinary territorial structures of patent law, and attempts to simplify these disputes should focus on procedural and substantive coordination across jurisdictions.

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INTRODUCTION

Patents grant territorial rights—they guard against infringement only within the state that issued the patent. In contrast, patent disputes

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^{1.} See, e.g., Voda v. Cordis Corp., 476 F.3d 887, 901 (Fed. Cir. 2007) (observing that "[a] patent right is limited by the metes and bounds of the jurisdictional territory that granted the right to

increasingly flout international borders. Patent FRAND litigation in particular tends to sprawl across multiple countries. In a typical FRAND dispute, a patentee has committed to provide a "fair, reasonable and non-discriminatory" (FRAND) license, but the parties cannot agree on the definitive meaning of those terms.² Ensuing litigation can entangle the parties in global snarls of the patent, antitrust, and contract laws of multiple jurisdictions, intertwined with questions of international trade policy and national security strategy. While many courts and commentators aim to centralize and thereby streamline these disputes, this Article argues against the instinct to consolidate. Rather, absent other agreement between the parties, FRAND disputes should be resolved through the ordinary territorial structures of patent law, and attempts to simplify these disputes should focus on procedural and substantive coordination between jurisdictions.

Patentees most frequently make FRAND commitments when they are involved in technological standard-setting activities. Such technology standards often aim to facilitate global interoperability and, as a result, the disputes that they ignite consistently rage across jurisdictional lines.³ For example, a current FRAND-related dispute between Apple and Qualcomm involves patents covering cellular telecommunication standards.⁴ Those standards allow for worldwide communication between cellular devices. Such devices are built with different hardware, run on different software, and communicate across the separate networks of

exclude"); Microsoft Corp. v. AT&T Corp., 550 U.S. 437, 437 (2007) (reiterating "the general rule under United States patent law that no infringement occurs when a patented product is made and sold in another country"). The United States Patent Act is explicitly limited to acts "within the United States" and the importation of a patented invention "into the United States." 35 U.S.C. § 271(a) (2012). The limited statutory exceptions to this general rule are beyond the scope of this Article. See generally Timothy R. Holbrook, Boundaries, Extraterritoriality and Patent Infringement Damages, 92 NOTRE DAME L. REV. 1745 (2017).

^{2.} See, e.g., Jeffrey I.D. Lewis, What is "FRAND" All About? The Licensing of Patents Essential to an Accepted Standard, CARDOZO LAW (2014), https://cardozo.yu.edu/what-"frand"-all-about-licensing-patents-essential-accepted-standard [https://perma.cc/WZB4-LVXU] ("SSOs created FRAND — a requirement that SSO members license SEPs on "Fair, Reasonable, and Non-Discriminatory" terms to other members of the SSO and, very often, non-members who use the standard.").

^{3.} See, e.g., 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: ANTITRUST AND PATENTS 419 (Jorge L. Contreras ed. 2017) [hereinafter TECHNICAL STANDARDIZATION] (observing that in a FRAND dispute, "almost every other element in the dispute is global or at least regional... the standards are global, the industry players operate globally, products are developed and marketed globally").

^{4.} See Apple Inc. v. Qualcomm Inc., No. 3:17-cv-00108-GPC-MDD, 2017 U.S. Dist. LEXIS 145835 (S.D. Cal. Sept. 7, 2007).

different countries—yet, the establishment of global telecommunication standards allows for easy communications across those differences.⁵ The dispute between Apple and Qualcomm over the use of those standards also cuts across national borders, involving civil litigation in five countries and related investigations by a number of national regulatory authorities.⁶ Similarly, a recent FRAND dispute between Samsung and Huawei involved parallel litigation in both the United States and China,⁷ and another recent dispute between TCL and Ericsson generated related proceedings in seven countries.⁸

Indeed, FRAND disputes can spawn litigation in each country in which standard-compliant products and services are made available. Each such country can see claims under its domestic patent laws (for example, regarding unlicensed patent infringement), antitrust framework (for example, regarding the unlawful use of market power conferred by standard-essential patents), and contract law (regarding the parties' contractual obligations under the FRAND commitment). A number of jurisdictions, sometimes in an attempt to streamline the complexity of the transnational dispute, have recently seized the authority to make a single FRAND royalty determination applicable to worldwide activities. In two recent decisions, a United States district court set FRAND royalty rates for worldwide sales despite parallel foreign litigation. Similarly, two

^{5.} Id. at *4 (noting that standards are intended "to facilitate worldwide connectivity").

^{6.} *Id.* at *54 (summarizing litigation between the parties in the United States as well as China, Japan, Taiwan and the United Kingdom, and related regulatory investigations in China, Japan, Korea, and Taiwan). The United States Federal Trade Commission is also currently litigating related issues against Qualcomm. *See* FTC v. Qualcomm Inc., No. 17-CV-002220-LHK, 2017 U.S. Dist. LEXIS 98632, at *3–4 (N.D. Cal. June 26, 2017) (denying Qualcomm's motion to dismiss claims advanced by the FTC).

^{7.} See Huawei Techs. Co. v. Samsung Elecs. Co., No.3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052 (N.D. Cal. Apr. 13, 2018) (enjoining parallel litigation in China).

^{8.} TCL Comme'n Tech. Holdings Ltd. v. Telefonaktienbolaget LM Ericsson, No. 8:14-cv-00341-JVS-AN, 2015 U.S. Dist. LEXIS 191512, at *10–15 (C.D. Cal. June 29, 2015) (summarizing litigation between the parties in the United States, as well as Argentina, Brazil, France, Germany, the Russian Federation, and the United Kingdom).

^{9.} See, e.g., Apple, 2017 U.S. Dist. LEXIS 145835, at *9 (noting that the United States actions "can be separated into three categories: breach of contract claims, patent claims, and antitrust claims" and describing foreign patent and competition law claims); Huawei, 2018 U.S. Dist. LEXIS 63052, at *11 (describing the parties' contract, patent, and antitrust claims). Regarding the use of antitrust claims in FRAND disputes, compare A. Douglas Melamed & Carl Shapiro, How Antitrust Law Can Make FRAND Commitments More Effective, 127 YALE L.J. 2110, 2111 (2018) (arguing that "antitrust laws have an important role to play" in enforcing FRAND commitments), with Douglas H. Ginsburg et al., The Troubling Use of Antitrust to Regulate FRAND Licensing, 10 CPI ANTITRUST CHRON. (Oct. 2015) (arguing that the use of antitrust law to enforce FRAND commitments is "troubling").

^{10.} Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233 (W.D. Wash. Apr. 25, 2013), aff'd, 795 F.3d 1024 (9th Cir. 2015); TCL Commc'n Tech. Holdings, Ltd. v.

British courts have recently asserted the jurisdiction to set worldwide FRAND rates over the defendant's strident objections. ¹¹ Additionally, the Chinese judiciary may soon also demand the right to impose a worldwide resolution on FRAND litigants. ¹² And in the recent United States case of *Huawei Techs. Co v. Samsung Elecs. Co.*, ¹³ the question of consolidation was squarely before the court. ¹⁴

This Article argues that courts should resist the temptation to streamline worldwide FRAND litigation through consolidation of the dispute in one jurisdiction. Indeed, absent other agreement between the litigants, standard-setting organizations should themselves disavow consolidation and instead require the jurisdiction-by-jurisdiction adjudication of FRAND disputes. Outside the FRAND context, commentators have wrestled with the challenges posed by multinational patent litigation, and a number of scholars have advocated for the consolidation of cross-border disputes in order to reduce the cost and expense of litigation across jurisdictions. ¹⁵ But this Article argues that

Telefonaktiebolaget LM Ericsson, No. SACV 14-341 JVS(DFMx), 2017 U.S. Dist. LEXIS 214003 (C.D. Cal. Dec. 21, 2017). Both the Microsoft and TCL Courts found that the resolution of the United States litigation would be "dispositive of" related foreign litigation. See Microsoft Corp. v. Motorola, Inc., 871 F. Supp. 2d 1089, 1099 (W.D. Wash. 2012); TCL Commc'n. Tech. Holdings, Ltd., 2015 U.S. Dist. LEXIS 191512, at *17.

^{11.} Unwired Planet Int'l Ltd. v. Huawei Techs. Co., [2017] E.W.H.C. 711, p. 543 (Eng.), aff'd, [2018] E.W.C.A. (Civ) 2344 (stating that country-by-country licensing would be "madness" and that "[a] worldwide license would be far more efficient"); Conversant Wireless Licensing S.A.R.L v. Huawei Techs. Co., [2018] E.W.H.C. 808, p. 28 (Eng.), aff'd, [2019] E.W.C.A. (Civ) 38 (noting that without a global resolution of the FRAND dispute, the patentee would be required "to seek separate licenses for each individual country[,] . . . by commencing separate litigation in each such territory").

^{12.} *Conversant*, [2019] EWCA (Civ) 28 p. 123 (describing recent guidelines issued by the Guangdong High People's Court in China regarding SEP disputes, and the possibility that Chinese courts may assert jurisdictions to impose a worldwide FRAND resolution).

^{13.} Huawei Techs. Co. v. Samsung Elecs. Co., No. 3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052 (N.D. Cal. Apr. 13, 2018).

^{14.} *Id.* at *27–28 (presenting the question of whether the court has the "ability to determine a FRAND royalty rate . . . whether based on global or domestic SEPs"). The *Samsung* case settled before the court could decide whether it could impose a worldwide FRAND resolution. *See* Huawei Techs. Co., v. Samsung Elecs. Co., 757 F. App'x 1011 (Fed. Cir. 2019).

^{15.} See generally Marketa Trimble, GAT, Solvay, and the Centralization of Patent Litigation in Europe, 26 EMORY INT'L L. REV. 515, 515 (2012) (asserting that "[c]oncentrating litigation . . . [in] one national or multinational court could result in faster, more efficient, and more consistent" patent enforcement); Kerry J. Begley, Multinational Patent Enforcement: What the "Parochial" United States Can Learn from Past and Present European Initiatives, 40 CORNELL INT'L L.J. 521, 526 (2007) (arguing that multinational patent litigation would best be handled through a "common patent judicial system"); Kendra Robins, Extraterritorial Patent Enforcement and Multinational Patent Litigation: Proposed Guidelines for U.S. Courts, 93 VA. L. REV. 1259, 1311 (2007) (asserting that American courts should consolidate foreign and domestic patent suits into a single proceeding); Graeme B. Dinwoodie, Developing a Private International Intellectual Property Law: The Demise of Territoriality?, 51 WM. &

allowing consolidation has produced legal uncertainty and jurisdictional conflict, and the costs of those uncertainties and conflicts are higher in the FRAND context. Moreover, FRAND disputes display distinctive characteristics that make such litigation particularly unamenable to centralization. And unlike patent litigation in general, the FRAND commitment's contractual basis can be used to simplify and reduce the costs of territorial adjudication. As such, in the increasing number of multinational FRAND disputes, courts and standard-setting organizations should reject the global consolidation of claims.

I. CONSOLIDATION

This Part discusses several recent cases in the United States and United Kingdom in which courts have asserted jurisdiction to set global FRAND royalty rates—effectively consolidating a multinational dispute about royalties into a single proceeding. Section A provides some initial background on the FRAND commitment, and then reviews those recent cases in which courts have asserted jurisdiction to resolve multinational FRAND disputes. Section B describes the practical and theoretical problems raised by these cases. Section C elaborates on one specific difficulty in these cases by asking whether United States courts have subject matter jurisdiction to make such global royalty determinations.

A. Cases

FRAND litigation centers on the patent rights covering technical standards. Such patents are often described as "standard essential," since use of the patented technology is essential for implementation of the standard. Standard-setting organizations frequently require patentees to commit to licensing their standard essential patents (SEPs) on FRAND terms. The FRAND commitment has two primary objectives. On the one hand, FRAND commitments are intended to provide assurance that the patented, proprietary technology is available for incorporation in goods

MARY L. REV. 711, 788 (2009) (advocating for the "greater use of consolidated adjudication of infringement claims"); Rochelle Dreyfuss, *The ALI Principles on Transnational Intellectual Property Disputes: Why Invite Conflicts?*, 30 BROOK J. INT'L L. 819, 829–30 (2004) (describing principles which may be used for the consolidation of intellectual property disputes).

^{16.} See Mark A. Lemley & Carl Shapiro, A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents, 28 BERKELEY TECH. L.J. 1135, 1135 (2013); Jorge L. Contreras, Global Rate Setting: A Solution for Standards-Essential Patents?, 94 WASH. L. REV. 701 (2019).

^{17.} Lemley & Shapiro, supra note 16, at 1135.

and services that depend on the relevant standards.¹⁸ On the other hand, the FRAND commitment, and its dispensation to collect "fair and reasonable" royalties, is intended to allow patent owners to secure fair compensation for their investments in innovation.¹⁹ However, the typical FRAND commitment is terse and vague.²⁰ Parties are typically left without clear guidance in the event of a dispute over the technology's availability or the magnitude of the royalties.²¹

In *Microsoft Corp. v. Motorola Inc.*, ²² one of the first judicial calculations of a FRAND royalty rate, a United States court imposed a flat, worldwide royalty rate that did not vary by jurisdiction. ²³ In that case, Motorola owned patents covering technology in wireless and video standards and demanded royalties from Microsoft for the use of such technology. ²⁴ Microsoft responded that those royalty demands were neither fair nor reasonable and, as such, were made in breach of Motorola's FRAND commitment. ²⁵ The parties consented to the determination of a FRAND royalty rate by the district court, which proceeded to set a single, global FRAND rate for all of Microsoft's worldwide sales on certain infringing products. ²⁶ The district court's rate calculations blurred any distinction between United States and foreign patent rights versus associated royalty rates. For example, the court set royalty rates—including for the use of foreign patents—solely by employing the prevailing methodology of United States patent law. ²⁷

^{18.} *Id.* at 1137.

^{19.} Id.

^{20.} Compare id. at 1137–38 (asserting that "[t]he effectiveness of the FRAND commitment has been undermined by" its ambiguities), with Joshua D. Wright, SSOs, FRAND, and Antitrust: Lessons from the Economics of Incomplete Contracts, 21 GEO. MASON L. REV. 791, 796 (2014) (asserting that the "intentional" ambiguity of the FRAND commitment "can be an important source of economic value").

^{21.} Contreras, *supra* note 16 (explaining that "[w]ith little guidance...[parties] are left to determine FRAND royalty rates in private negotiations").

^{22.} See No. C10-1823-JLR, 2013 U.S. Dist. LEXIS 60233 (W.D. Wash. Apr. 25, 2013), aff'd, 795 F.3d 1024 (9th Cir. 2015).

^{23.} Id. at *14-15.

^{24.} Id. at *11.

^{25.} Id.

^{26.} Microsoft Corp. v. Motorola, Inc., No. C10-1823 JLR, 2011 U.S. Dist. LEXIS 73827, at *19-22 (W.D. Wash. June 1, 2011) (discussing the parties' consent to the determination of RAND royalties by a bench trial).

^{27.} *Id.* at *48 (explaining the district court's adoption of a modified Georgia-Pacific framework for determining a RAND royalty rate). *See* THOMAS F. COTTER, COMPARATIVE PATENT REMEDIES 66 (2013) (noting that "there are important differences in the calculation methods" that different nations "actually employ" in calculating damages for patent infringement); JORGE L. CONTRERAS, *Global Markets, Competition, and FRAND Royalties: The Many Implications of Unwired Planet v. Huawei*,

Indeed, for one of the standards, the court imposed a global FRAND royalty rate despite the fact that Motorola's claims were limited to Microsoft's infringement of United States (not foreign) patents.²⁸

The Microsoft Court's assumption of authority to calculate global FRAND rates impelled the court to interfere with foreign litigation. Several months following the initiation of litigation in the United States, Motorola also advanced claims against Microsoft in Germany.²⁹ In the German claims, Motorola alleged that Microsoft infringed on German patents that were covered by the same contractual FRAND commitments at issue in the United States litigation.³⁰ While Motorola prevailed upon the German court to issue an injunction prohibiting Microsoft from infringing those patent in Germany, the United States district court prohibited Motorola from enforcing that injunction.³¹ The district court reasoned that the contractual FRAND commitment required Motorola to license its SEPs on a "worldwide basis." 32 As the United States court was charged with determining the parties' worldwide rights under the FRAND commitment, and since that determination required the court to decide whether injunctive relief was allowed under the FRAND contract, the court held that allowing the injunction to be enforced would "frustrate[]" the district court's ability "to adjudicate issues properly before it." ³³ In other words, since the United States court saw the FRAND commitment as applying on a global basis, it prohibited the parties from enforcing the decision of a German court regarding territorial patent rights in Germany.

Huawei v. Samsung³⁴ followed a similar pattern, with a United States court finding that adjudication of the parties' rights under the FRAND contract required the United States court to bar enforcement of a foreign

in 17 THE ANTITRUST SOURCE 1–8 (2017) (discussing how non-American courts can calculate FRAND royalties "[w]ithout the baggage of *Georgia-Pacific* to clutter the analytical exercise").

^{28.} *Microsoft*, 2013 U.S. Dist. LEXIS 60233, at *271 (noting that with respect to the 802.11 standard, Motorola only presented evidence that United States patents were essential to the standard, "and provided no evidence regarding whether any worldwide counterpart patents were essential").

^{29.} Microsoft Corp. v. Motorola, Inc., 871 F. Supp. 2d 1089, 1089 (W.D. Wash. 2012), aff'd, 696 F.3d 872, 873 (9th Cir. 2012).

^{30.} Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 879-80 (9th Cir. 2012).

^{31.} Microsoft, 871 F. Supp. 2d at 1103-04.

^{32.} *Id.* at 1098. In the words of the appellate court that affirmed the district court decision, the FRAND commitment "makes clear that it encompasses not just U.S. patents, but all of Motorola's standard-essential patents worldwide. When that contract is enforced by a U.S. court, the U.S. court is not enforcing German patent law but, rather, the private law of the contract between the parties." *Microsoft*, 696 F.3d at 884.

^{33.} Microsoft, 871 F. Supp. 2d at 1100.

^{34.} Huawei Techs. Co. v. Samsung Elecs. Co., No. 3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052 (N.D. Cal. Apr. 13, 2018).

judicial order.³⁵ In that case, both parties owned SEPs covering telecommunication standards.³⁶ The parties invested several years in negotiating a global patent cross-license but did not succeed in coming to an agreement.³⁷ The parties commenced FRAND litigation in two jurisdictions: Huawei filed suit in United States district court, asking the court to determine the terms for a global FRAND cross-license, and also filed a number of patent infringement suits in China.³⁸ Samsung responded with its own multinational patent, antitrust, and contract counterclaims in the United States and China.³⁹ The Chinese case progressed quickly, and the Chinese court determined that Samsung infringed at least two of Huawei's Chinese patents and issued an injunction against that infringement.⁴⁰ Samsung then asked the United States court, which was still considering the FRAND issues, to enjoin Huawei from enforcing the Chinese injunctions.⁴¹

The United States district court granted Samsung's motion and enjoined Huawei from enforcing the Chinese injunctions.⁴² The court found that its own adjudication of the FRAND dispute would dispose of the Chinese questions—the FRAND commitment acted as a "contractual umbrella" that controlled whether Huawei had contractually relinquished its right to seek injunctive relief.⁴³ As such, allowing Huawei to enforce the Chinese injunctions would undermine the "court's ability to determine the propriety of injunctive relief in the first instance."⁴⁴ At the same time, the court left open the broader question of whether it had the authority to determine a global FRAND rate.⁴⁵

^{35.} Id. at *8.

^{36.} Id.

^{37.} Id. at *10 (noting that the parties began negotiating a patent cross-license in 2011).

^{38.} *Id.* at *11. Huawei asserted that the United States and Chinese cases were filed simultaneously, but that the time differences between the two countries resulted in the Chinese cases being filed on the next calendar day. *Id.* at *11 n.5.

^{39.} Id. at *11-12.

^{40.} *Id.* at *12.

^{41.} Id. at *13-14.

^{42.} Id. at *7.

^{43.} Id. at *27 (quoting Microsoft Corp. v. Motorola Inc., 696 F.3d 872, 883 (9th Cir. 2012)).

^{44.} Id. at *33.

^{45.} *Id.* at *28. Huawei and Samsung settled their dispute before the Federal Circuit had the opportunity to rule on Huawei's appeal of the district court decision. *See* Huawei Techs. Co. v. Samsung Elecs. Co., 757 F. App'x 1011 (Fed. Cir. 2019). A number of United States courts have declined to issue antisuit injunctions in multinational FRAND disputes. In TQ Delta LLC v. ZyXEL Commc'ns Inc., No. 1:13-cv-02013-RGA, 2018 U.S. Dist. LEXIS 98228 (D. Del. June 12, 2018), the court applied a restrictive test and rejected defendant's motion for an anti-suit injunction against related FRAND litigation in the United Kingdom. The court asserted that a global FRAND

Similar issues were raised in TCL v. Ericsson. 46 In that case, Ericsson sued the Chinese manufacturer TCL in the United States and a number of foreign jurisdictions for TCL's use of telecommunications standards covered by Ericsson-owned patents.⁴⁷ In an effort to come to a global resolution of their dispute, the parties agreed that a United States district court could make a determination of worldwide FRAND rates. 48 The court, following a complex economic analysis, set three FRAND rates: one rate applicable to the United States, a second for Europe, and a third rate applicable to the "rest of the world." The rates varied according to the strength of Ericsson's patent portfolio in each of the three regions—a correlation that the court saw as demanded by the "fundamental relationship between FRAND and domestic patent law" of each jurisdiction.⁵⁰ At the same time, the court acknowledged that this "global adjudication"51 by a United States court passed over the "insurmountable task" of addressing the "technical nuances of patent law in dozens of jurisdictions."52 The court, without providing evidence, justified this omission by asserting that the sum of such differences would be "relatively trivial" and "insubstantial."53 As in other global FRAND adjudications, the TCL Court also intruded into related foreign proceedings with an anti-suit injunction.⁵⁴ As noted earlier, the TCL case involved litigation in seven foreign jurisdictions. 55 Following the parties' agreement, the district court enjoined all those proceedings, reasoning that the United States global royalty determination would be "dispositive" of all foreign patent actions.⁵⁶

determination by the UK court would not preclude the United States court from adjudicating the same issues. *Id.* at *9. Moreover, the UK action involved at least one patent that was not a counterpart to patents litigated in the United States. *Id.* at *10.

^{46.} TCL Comme'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No. SACV 14-341 JVS(DFMx), 2017 U.S. Dist. LEXIS 214003 (C.D. Cal. Nov. 8, 2017).

^{47.} See supra note 8 and accompanying text (listing the jurisdictions in which the parties litigated their FRAND dispute).

^{48.} TCL Comme'n. Tech. Holdings, Ltd. v. Telefonaktienbolaget LM Ericsson, No. 8:14-cv-00341-JVS-AN, 2015 U.S. Dist. LEXIS 191512, at *18 (C.D. Cal. June 29, 2015) (noting that the litigants "indicated their desire that this action should result in a 'global resolution' of the SEP patent licensing and damages claims").

^{49.} Id. at *83.

^{50.} Id. at *79.

^{51.} Id. at *81.

^{52.} *Id*.

^{53.} Id.

^{54.} Id.

^{55.} See supra note 8 and accompanying text.

^{56.} TCL Commc'n, 2015 U.S. Dist. LEXIS 191512, at *16-19.

Courts outside the United States have also set global FRAND rates and enjoined related foreign litigation. The English decision, *Unwired Planet* Int'l Ltd. v. Huawei Tech. Co., 57 provides the most extensive analysis to date of whether a court should determine FRAND royalty rates on a global basis. Unwired Planet, a non-practicing entity, alleged that certain handset manufacturers infringed patents covering wireless telecommunication standards.⁵⁸ Unwired Planet's patent portfolio was subject to a FRAND licensing commitment and the court, in a long and detailed opinion, calculated FRAND rates for a worldwide license.⁵⁹ The court rejected Huawei's demand that any royalty determination be restricted to a determination of license terms for United Kingdom patents. 60 Observing that both Unwired Planet and Huawei were companies with global operations, the court asserted that country-by-country licensing was "madness" and that a "licensor and licensee acting reasonably" in this situation "would [] agree[] on a worldwide license."61 Indeed, the court observed that almost all comparable licenses introduced at trial were granted on a worldwide basis. 62 The court threatened to enjoin Huawei's infringing activities in England if Huawei were to decline to enter into a license agreement on the terms set by the court—effectively leveraging the possibility of an injunction in the court's territorially limited jurisdiction, in order to impose global royalty rates. 63 According to the court, this decision did not intrude onto the sovereignty of other jurisdictions since despite the worldwide license. Huawei retained the

^{57.} Unwired Planet Int'l Ltd. v. Huawei Techs. Co., [2017] E.W.H.C (Pat) 711, (Eng.), aff'd, [2018] E.W.C.A. (Civ) 2344.

^{58.} Id. at 1.

^{59.} Id.

^{60.} Huawei's opposition to the judicial determination of a global FRAND license in Unwired Planet contrasts with its own position in its United States litigation against Samsung, in which Huawei was the party petitioning the court to set a global FRAND license. *See supra* notes 35–38 and accompanying text.

^{61.} Unwired Planet International LTD v. Huawei Technologies Co. LTD, 135 REPORTS OF PATENT, DESIGN, AND TRADE MARK CASES [R.P.C.] 757, 760, 779 (2018) (Eng.). The Unwired court asserted that the inefficiency of country-by-country licensing was the result of "the effort required to negotiate and agree so many different licenses and then to keep track of so many different royalty calculations and payments." Id. at 760. At the same time, Unwired acknowledged that royalty-rates in a worldwide FRAND license could differ by "region" and by "standard." Id. at 779. Indeed, Unwired divided its worldwide FRAND license into three regions: major markets, China, and other markets. Id. at 779–807.

^{62.} Id. at 534.

^{63.} Id. at 793.

right to challenge the "validity or essentiality" of foreign patents in the relevant foreign jurisdictions. ⁶⁴

The appeals court affirmed the decision, holding that the FRAND commitment that Huawei was seeking to enforce was global in scope. 65 As such, the patentee satisfied its FRAND obligations by offering Huawei a worldwide license, and the court was within its jurisdiction when it calculated royalty rates under the patentee's contractual commitment.66 Without such a worldwide license, the appeals court reasoned, patentees would be required to bring proceedings in each country worldwide in order to collect FRAND royalties— a framework that would incentivize manufacturers "to hold out country by country" until "compelled to pay."⁶⁷ The court further held that calculating global rates did not raise an unreasonable risk of conflict with comity or foreign judicial decisions, since "commercial courts around the world" were "familiar" with the kind of reasoning employed by the English court.⁶⁸ Further, the global license imposed by the trial court did not usurp the "right of foreign courts to decide issues of infringement and validity" in their own jurisdictions. 69 While the FRAND license set by the trial court assumed the validity and essentiality of those foreign patents, the license allowed for annual adjustments in light of "any change in the patent landscape."⁷⁰

As with other courts that set global FRAND rates, the English court also found itself ready to enjoin related foreign litigation. Following the English FRAND determination, Huawei filed suit in China and asserted that that Unwired Planet's conduct had violated competition law and

^{64.} *Id.* at 567. Indeed, during the course of the proceedings, the parties were involved in litigation to China regarding the validity of Unwired Planet's Chinese patents and litigation in Germany which concerning both validity and infringement. *Id.* at 570.

^{65.} Id. at 793.

^{66.} Id. at 789.

^{67.} Id. at 795.

^{68.} Id. at 793.

^{69.} Id. at 764.

^{70.} *Id.* at 791. *See also* Conversant Wireless Licensing S.A.R.L v. Huawei Techs. Co., [2018] E.W.H.C. (Pat) 808, (Eng.), *aff'd*, [2019] E.W.C.A. (Civ.) 38 (following the reasoning of *Unwired Planet* and, in addition, rejecting claims that that the case should be dismissed for reasons of forum non conveniens). In *Conversant*, the English court found that it had jurisdiction to set global royalty rates even though only 1% of Huawei's sales were in the UK. *Id.* at 10. The Supreme Court of the UK has agreed to hear Huawei's appeal from the decisions in *Unwired Planet* and *Conversant. See* Eingestellt Von Florian Mueller, *Supreme Court of the UK Grants Huawei's Petition to Appeal Lower Court's Claim to Global FRAND Jurisdiction in Unwired Planet Case*, FLOSS PATENTS (Apr. 23, 2019, 3:09 PM), http://www.fosspatents.com/2019/04/supreme-court-of-uk-grants-huaweis.html [https://perma.cc/W73U-LXX7].

^{71.} Unwired Planet Int'l Ltd. v. Huawei Techs. Co., [2017] E.W.H.C. 2831 (Eng.).

breached the contractual FRAND commitment.⁷² Moreover, Huawei sought to have the Chinese court enjoin Unwired Planet from continuing the English proceedings, and it argued that the English court's decisions themselves breached the FRAND commitment.⁷³ At the same time, Unwired Planet advanced parallel litigation against Huawei in Mexico.⁷⁴ The parties eventually compromised on these matters, though the English court stated that absent such compromise it would have granted an antisuit injunction.⁷⁵

Outside of the judicial setting, some regulatory authorities have also used the FRAND commitment to impose globally applicable obligations. For example, in 2013, the Federal Trade Commission asserted that Google and Motorola unlawfully sought injunctions against the infringement of FRAND-committed patents, including through attempts to enjoin sales of infringing Microsoft products in the *Microsoft v. Motorola* case discussed above. The parties eventually reached a consent agreement which limited the right of Google and Motorola to seek such injunctive relief. By its express terms, the consent agreement applied to all actions for an injunction in any jurisdiction, and all patents of the companies worldwide. Neither the FTC statement concerning the proposed order,

^{72.} Id. at 4.

^{73.} Id.

^{74.} Id. at 11.

^{75.} Id. at 10.

^{76.} Complaint, Motorola Mobility LLC, FTC File No. 121–0120 (F.T.C. July 23, 2013) (No. C-4410), https://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724googlemotorolacmpt.pdf [https://perma.cc/7ZAW-ECJC].

^{77.} Decision and Order, Motorola Mobility LLC, FTC File No. 121-0120 (F.T.C. July 24, 2013) (No. C-4410), https://www.ftc.gov/sites/default/files/documents/cases/2013/07/130724 googlemotorolado.pdf [https://perma.cc/9UZ5-QZMW] [hereinafter Google Consent Order]. The Google Consent Order did not limit the companies' right to seek injunctive relief against entities that were outside the jurisdiction of the United States district courts. *Id.* at II(E)(1).

^{78.} *Id.* at I(G) (defining "Covered Injunctive Relief" as any ruling "whether in or outside the United States"); *id.* at I(R) (defining a "Patent Claim" covered by the Google Consent Order as patents or applications "in the United States or anywhere else in the world"); *see also* Statement of Federal Trade Commission, *In the Matter of* Google Inc., FTC File No. 121-0120, at 1 (Jan. 3, 2013), https://www.ftc.gov/sites/default/files/documents/cases/2013/01/130103googlemotorolastmt ofcomm.pdf [https://perma.cc/WCJ6-L2QX] (noting that the Google Consent Order requires Google to withdraw claim for injunctive relief "around the world"). Other FTC consent agreements have also imposed similar extraterritorial restrictions with respect to FRAND-commitment patents. *See* Decision and Order, Robert Bosch GmbH, FTC File No. 121-0081, at IV.E (Apr. 23, 2013), https://www.ftc.gov/sites/default/files/documents/cases/2013/04/130424robertboschdo.pdf [https://perma.cc/B9YX-V4B8] (prohibiting the company from initiating any "Action" demanding injunctive relief for certain FRAND-committed patents, where "Action" was defined to include any means of dispute resolution "in the United States or anywhere else in the world"); Decision and Order, Negotiated Data Solutions LLC, FTC File No. 051-0094, Docket No. C-4234 (Sept. 22,

nor the dissenting statement of one of the commissioners, addressed the consent order's worldwide scope or questioned whether a United States agency should impose remedies with respect to foreign patents.⁷⁹

In sum, both courts and regulatory agencies have asserted jurisdiction to determine parties' obligations under the FRAND commitment on a global basis. In particular, national courts have claimed jurisdiction to resolve multinational FRAND disputes by setting worldwide royalty rates, and this assertion of authority has led such courts to interfere with the processes of foreign litigation. The next Part elaborates on the conflicts and complications caused when courts, without the parties' agreement, assert jurisdiction to resolve the multinational conflict.

B. Complications

The assertion of judicial authority to resolve multinational FRAND disputes can raise a host of practical and theoretical problems. This Part locates the origin of these difficulties in the lack of a forum selection clause in the typical contractual FRAND commitment. A forum selection clause could serve as a jurisdictional anchor tying FRAND disputes to a specific dispute resolution process, but the absence of which allows any national court to claim jurisdiction to resolve the multinational dispute. This Part then discusses the many conflicts and complications that emerge from this lack of an established dispute resolution process and the resulting judicial assertions of jurisdiction to consolidate a multinational FRAND dispute into a single forum. These complications include challenges to international comity, the problem of forum shopping and the difficulty of applying the national laws and policies of one particular jurisdiction across a number of countries.

2008), https://www.ftc.gov/sites/default/files/documents/cases/2008/09/080923ndsdo.pdf [https://perma.cc/KSM3-NCU4] (defining "Action" to include any means of dispute resolution "in the United States or anywhere else in the world").

79. See Statement of the Federal Trade Commission, supra note 78; Dissenting Statement of Commissioner Maureen K. Ohlhausen, In the Matter of Motorola Mobility LLC and Google Inc., FTC File No. 121-0120 (Jan. 3. 2013), https://www.ftc.gov/sites/default/files/documents/cases /2013/01/130103googlemotorolaohlhausenstmt.pdf [https://perma.cc/YDD3-RCEV]; Douglas H. Ginsburg & John M. Taladay, Comity's Enduring Vitality in a Globalized World, 24 GEO. MASON L. REV. 1069, 1087 (2017) (criticizing a "global remedy" imposed by the Korean Fair Trade Commission regarding Qualcomm's FRAND licensing practices); Koren Wong-Ervin et al., Extra-Jurisdictional Remedies Involving Patent Licensing, COMPETITION POL'Y INT'L, Dec. 14, 2016 (criticizing the extra-jurisdictional reach of the Google Consent Order).

80. See also Rose Hughs, Britannia Rules on SEPs — But is it FRAND?, THE IPKAT (Feb. 21, 2019), http://ipkitten.blogspot.com/2019/02/Britannia-rules-on-seps-but-is-it-frand.html [https://perma.cc/B393-RB94] (asserting that "the heart of the problem is the reluctance of standard-setting organizations . . . to agree to a dispute resolution mechanism").

Agreements between sophisticated commercial parties often contain a "forum selection clause." Such contractual clauses allow parties to choose the forum that will adjudicate disputes under the agreement, and such clauses may specify a particular national court or adopt alternative means of dispute resolution such as arbitration. Latter Courts will ordinarily respect the parties' choice of forum, especially when the dispute arises between well-advised commercial entities. Courts and commentators recognize the importance of forum selection clauses—such provisions limit uncertainty and litigation costs by allowing contracting parties to agree on the forum for dispute resolution. Forum selection clauses also encourage international trade, since parties of diverse nationalities can transact business with an understanding of which judicial forum will assert jurisdiction over the transaction.

FRAND commitments are significant contractual obligations—the patentee makes binding commitments to the standard-setting organization regarding how patents will be licensed and litigated, and these commitments can be enforced by third parties that wish to use the patented technologies. However, unlike other weighty commercial agreements, FRAND commitments do not ordinarily specify a particular forum for the resolution of disputes regarding the commitment's interpretation. The patents of the patents of the resolution of disputes regarding the commitment's interpretation.

^{81.} See generally Gary B. Born & Peter B. Rutledge, International Civil Litigation in United States Courts 446 (6th ed. 2018).

^{82.} *Id*

^{83.} *Id.* at 452; Bremen v. Zapata Off-Shore Co., 407 U.S. 1, 12 (1972) (holding that a forum selection clause should generally control, especially when "made in an arm's-length negotiation by experienced and sophisticated businessmen").

^{84.} Bremen, 407 U.S. at 13–14; Stewart Org., Inc. v. Ricoh Corp., 487 U.S. 22, 33 (Kennedy, J., concurring) (courts should support forum selection clauses since they "spare litigants unnecessary costs... [and] relieve courts of time-consuming pretrial motions"); Leandra Lederman, Note, Viva Zapata!: Toward a Rational System of Forum-Selection Clause Enforcement in Diversity Cases, 66 N.Y.U. L. REV. 422 (1991).

^{85.} *Bremen*, 407 U.S. at 9 (Refusing to enforce forum selection clauses "would be a heavy hand on the future development of international commercial dealings by Americans. We cannot have trade and commerce in world markets and international waters exclusively on our terms, governed by our laws, and resolved in our courts.").

^{86.} Courts have held that the FRAND commitment constitutes a binding contract, which can be enforced by an implementer of the relevant technology standard. Microsoft Corp. v. Motorola, Inc., 854 F. Supp. 2d 993, 999 (W.D. Wash. 2012); *see, e.g.*, Apple, Inc. v. Motorola Mobility, Inc., 886 F. Supp. 2d 1061, 1083 (W.D. Wis. 2012).

^{87.} See, e.g., Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 882 (9th Cir. 2012) (noting that the ITU patent policy does not contain a forum selection clause). A minority of standard-setting organizations do specify that disputes should be resolved by arbitration. See Jorge L. Contreras & David L. Newman, Developing a Framework for Arbitrating Standards-Essential Patent Disputes, 2014 J. DISP. RESOL., 23, 29–30 (2014) (detailing the "handful" of bylaws and policies of standard-setting organizations that specify arbitration as a means of dispute resolution). Forum selection

such circumstances, no contractual roadblock stops a court that wishes to assert jurisdiction over the matter. Indeed, given that technology covered by FRAND commitments can be made available worldwide, any number of courts could, in principle, assert jurisdiction over part of a FRAND dispute. Such courts could also—and, as summarized above, sometimes do—claim jurisdiction to resolve the FRAND dispute on a worldwide basis. In other words, in the absence of an agreed dispute resolution process, the authority that has already been asserted by certain courts to impose global resolutions in transnational FRAND disputes could be claimed by any jurisdiction. 99

This lack of an established dispute resolution process, which allows multiple courts to insert themselves into the same FRAND dispute, can result in a number of unhappy complications. First, from the most practical perspective, the involvement of multiple courts could result in inconsistent decisions. Different courts could impose different monetary royalties for the same activities, leaving litigants with confusion as to which rate should be followed. Courts can also provide for inconsistent non-monetary remedies—injunctions granted by foreign authorities have already been perceived by United States courts as incompatible with the American adjudication of a FRAND dispute. Moreover, litigants could themselves try to exploit such inconsistencies—a party unhappy with the

clauses should be distinguished from "choice of law" clauses, which specify the law chosen by the parties to govern a contract. The policies of several standard-setting organizations incorporate choice of law clauses. For example, the intellectual property rights policy of the European Telecommunications Standards Institute (ETSI) specifies that it shall be "governed by the laws of France." European Telecomms. Standards Inst., ETSI Intellectual Property Rights Policy, ETSI 44 (Apr. 18, 2018), https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf [https://perma.cc/VAV8-Z7LK] [hereinafter ETSI Patent Policy]. It is notable that open source licenses, which like FRAND commitments provide licenses to intellectual property rights on a non-discriminatory basis, also do not typically include forum selection clauses. See Andrew M. St. Laurent, Understanding Open Source and Free Software Licensing 178 (Simon St. Laurent ed., 2004).

^{88.} See supra Part I.A.

^{89.} No judicial authority can enforce its decision worldwide, but, as in *Unwired Planet*, a court could back up a global royalty determination with the threat to enjoin infringing products from its own jurisdiction. *See supra* notes 63–64 and accompanying text. Such a threat of exclusion from a major commercial center may be powerful enough incentive to compel compliance with that global rate determination. *Id.*

^{90.} Indeed, according to the United States Supreme Court, the potential for conflict between United States and foreign laws is a principal reason for the statutory presumption against the extraterritorial effect of United States law. *See, e.g.*, EEOC v. Arabian Am. Oil Co., 499 U.S. 244, 248 (1991) (noting that the presumption against extraterritoriality "serves to protect against unintended clashes between our laws and those of other nations").

^{91.} See supra notes 29-33, 43-45 and accompanying text.

result in one jurisdiction could try its luck in another country, hoping for a more favorable outcome in the latter jurisdiction. 92

Second, this potential for judicial inconsistencies reflects a deeper challenge to notions of international comity. FRAND disputes begin with a contractual undertaking to license, but they go beyond that private contractual commitment to involve complexities of patent and competition law and policy. 93 Each country's domestic patent and competition law reflects the nuances of its own economic policy choices.⁹⁴ A court that seizes the authority to determine a global dispute undermines the authority of other jurisdictions to make their own domestic economic policy and provokes conflict if those foreign jurisdictions attempt to reclaim their own power. In the same vein, judicial interference in the affairs of other countries (for example, through an antisuit injunction) also tests principles of international reciprocity. If American courts thwart the effectiveness of injunctions issued by foreign authorities concerning their own foreign patent rights, the chances are lessened that those foreign authorities will themselves recognize judicial determinations from the United States.95

These challenges to international comity are not limited to the financial issue of royalty rates. FRAND determinations rest not only on cold economic calculus, but also on the particular social or political bedrock of the jurisdiction making the royalty calculations. In the United States, for example, FRAND royalties may be set by an opaque jury verdict, rather

^{92.} For example, subsequent to the trial court's determination of global royalty rates in *Unwired Planet*, Huawei turned to Chinese courts and asserted that the United Kingdom courts "hijacked the determination of the FRAND licence" and that Unwired Planet had violated Chinese competition law and its FRAND obligations. *See* Unwired Planet Int'l Ltd. v. Huawei Techs. Co. [2017] E.W.H.C. 2831 p. 9 (Eng.).

^{93.} See supra note 9 and accompanying text.

^{94.} See, e.g., Microsoft Corp. v. AT&T Corp., 550 U.S. 437, 455 (2007) (stating that foreign patent law "may embody different policy judgments about the relative rights of inventors, competitors, and the public in patented inventions") (quoting Brief for the United States as Amicus Curiae Supporting Petitioner at 28, Microsoft Corp. v. AT&T Corp., 550 U.S. 437 (2007) (No. 05-1056)); F. Hoffmann-La Roche Ltd. v. Empagran S.A., 542 U.S. 155, 165 (2004) (noting that extraterritorial application of United States antitrust laws "creates a serious risk of interference with a foreign nation's ability independently to regulate its own commercial affairs"). See also Ginsburg & Taladay, supra note 79, at 1086 (describing the importance of international comity in the enforcement of antitrust laws).

^{95.} Cf. Brief of the Governments of the United Kingdom of Great Britain and Northern Ireland and the Kingdom of the Netherlands as Amici Curiae in Support of Neither Party at 29–30, Kiobel v. Royal Dutch Petroleum Co., 569 U.S. 108 (2013) (No. 10-1491) (detailing how the expansive assertions of jurisdiction by United States courts caused foreign jurisdiction to curtail the recognition accorded to United States judicial orders).

than the reasoned decision of a judge. 96 United States courts may also structure or exclude the presentation of evidence in order not to "mislead the jury," while the same evidence may be available to the decision maker in other jurisdictions.⁹⁷ Jurisdiction-specific values may also be incorporated in decisions regarding the non-discrimination aspect of FRAND. For example, *Unwired Planet's* understanding and application of the FRAND non-discrimination commitment was to a large extent informed by European Union (EU) competition law—a body of law specific to the social and political conditions of EU.98 In contrast, at least one United States court has asserted that American antitrust law "provide[s] no guide" to understanding the FRAND non-discrimination commitment.⁹⁹ In sum, FRAND royalty determinations can go beyond technocratic financial calculations to involve moral, cultural and political elements tied to a specific jurisdiction. A forum that takes control of a global FRAND dispute, with all the associated elements of innovation, competition and economic policy, presumes the authority to impose its own values worldwide.

Third, judicial enthusiasm for global FRAND rate determinations may also encourage forum shopping and drive harmful competition between jurisdictions. Parties faced with multiple possible jurisdictions will of course look to file in the forum most favorable to their own position. Patentees will hasten to file suit with courts that impose hefty FRAND royalties or that issue punishing injunctions.¹⁰⁰ On the other hand,

^{96.} See, e.g., Godo Kaisha IP Bridge 1 v. TCL Comme'n Tech. Holdings Ltd., No. 15-634-JFB, 2019 U.S. Dist. LEXIS 70752, at *16 (D. Del. April 24, 2019) (finding that "the jury verdict reflects an appropriate determination of the FRAND royalty rate and the Court will not supplant the jury's determination"). See generally Realtek Semiconductor Corp. v. LSI Corp., No. C-12-3451-RMW, 2014 U.S. Dist. LEXIS 81678 (N.D. Cal. June 16, 2014) (upholding jury determination of FRAND rates); Ericsson Inc. v. D-Link Sys., No. 6:10-CV-473, 2013 U.S. Dist. LEXIS 110585 (E.D. Tex. Aug. 6, 2013) (same).

^{97.} Ericsson, Inc. v. D-Link Sys., 773 F.3d 1201, 1227 (Fed. Cir. 2014) (in presenting damages evidence to the jury, "care must be taken to avoid misleading the jury by placing undue emphasis on the value of the entire product"); see also Norman v. Siebrasse & Thomas F. Cotter, Judicially Determined FRAND Royalties, in TECHNICAL STANDARDIZATION, supra note 3, at 366.

^{98.} Jorge L. Contreras, *Global Markets, Competition and FRAND Royalties: The Many Implications of* Unwired Planet v. Huawei, ANTITRUST SOURCE, Aug. 2017, at 6 (the reasoning of *Unwired Planet* "seems to conflate the competition law effects of violating a FRAND commitment and the private 'contractual' meaning of the FRAND commitment itself').

^{99.} TCL Commc'n Tech. Holdings v. Telefonaktienbolaget LM Ericsson, No. SACV 14-341 JVS (DFMx), 2017 U.S. Dist. LEXIS 214003, at *165 (C.D. Cal. June 29, 2017). For a broader discussion of the differences between (and different values underlying) European and United States competition law, see Ginsburg & Taladay, *supra* note 79, at 1070–75.

^{100.} See, e.g., Pat Treacy & Edwin Bond, What Every SEP Owner and Licensee Needs to Know About the Unwired Planet Decision, IAM (Oct. 30, 2018), https://www.iam-media.com/frandseps/bristows-unwired-planet [https://perma.cc/EB93-TRSM] (Following the

manufacturers and implementers will rush to courts that minimize the FRAND royalty burden or disfavor injunctive relief. This "race to the courthouse," by driving parties to quickly file suit in their preferred jurisdiction, can encourage litigation and throw cold water on talk of negotiated resolutions. ¹⁰¹ Moreover, jurisdictions may also try to attract litigation business by tailoring their law and procedures in order to appeal to certain kinds of litigants. ¹⁰² This can result in a "race to the bottom," with authorities adopting increasingly inefficient legal frameworks in order to outshine competing jurisdictions. ¹⁰³

The possibility of forum shopping also raises the question of whether courts and regulatory authorities will favor local technology companies. There is some evidence that, in FRAND disputes, authorities support domestic firms against foreign interests. ¹⁰⁴ As such, litigants looking for a sympathetic forum may run to their home jurisdiction, which may try to impose global FRAND rates that other jurisdictions perceive as unfair, one-sided, or discriminatory. ¹⁰⁵ Even if that home jurisdiction does not deliberately favor its native companies, the FRAND policies applied by the judiciary and regulators of that country may naturally be more suitable for its own domestic technology ecosystem. For example, businesses from developed countries may boast strong intellectual property portfolios, and their home jurisdictions may correspondingly defend intellectual property by imposing relatively high royalty rates and enjoining unlawful infringement. ¹⁰⁶ In contrast, developing countries may be more concerned

decision in *Unwired Planet*, patentees will "see the UK as attractive for FRAND litigation. It gives SEP owners a means of resolving global disputes where the implementer has sufficient UK sales to want to stay in the UK market").

^{101.} Contreras, *supra* note 16, at 725 (internal quotation marks omitted).

^{102.} *Id. See also* J. Gregory Sidak, *The FRAND Contract*, 3 CRITERION J. INNOVATION 1, 1 (2018) (arguing that several "jurisdictions are competing in a tournament of sorts to identify the best legal framework for resolving FRAND licensing disputes").

^{103.} See Daniel Klerman & Greg Reilly, Forum Selling, 89 S. CAL. L. REV. 241, 245 (2016) (claiming that "efforts to attract litigation are socially undesirable because they are likely to produce inefficient pro-plaintiff law"); Lucian A. Bebchuk, Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law, 105 HARV. L. REV. 1435, 1444 (1992) (describing how the "race to the bottom theory claims that state competition for corporate charters harms shareholders by driving states" to adopt harmful legal rules).

^{104.} See generally Benjamin C. Li, The Global Convergence of FRAND Licensing Practices: Towards "Interoperable" Legal Standards, 31 BERKELEY TECH. L.J. 429, 458–61 (2016).

^{105.} *Id.* (describing FRAND decisions in the United States, China and South Korea that could be perceived as discriminatory against foreign businesses).

^{106.} See, e.g., Michael Murphree & Dan Breznitz, Standards, Patents and National Competitiveness, GLOBAL COMMISSION ON INTERNET GOVERNANCE PAPER SERIES NO. 40, Sept. 2016, at 1, 7 (describing how the interests of developed and developing countries differ with respect to FRAND policies); Xuan Li & Baisheng An, IPR Misuse: The Core Issue in Standards and Patents,

with local technology diffusion and may therefore establish lighter royalty payments.¹⁰⁷ This global diversity of intellectual property policies can exacerbate the stakes of forum shopping, since the policies of any individual country may not be appropriate for a worldwide resolution of a FRAND dispute across all jurisdictions.

All of these issues of consistency, comity, and forum shopping take on greater importance in the FRAND arena, where the great majority of license agreements are settled through private negotiation rather than litigation. The potential for inconsistency and forum shopping muddles the legal background rules governing the FRAND commitment, and thereby makes it more difficult to successfully negotiate FRAND licensing agreements. While all commercial bargaining walks through the "shadow of the law"—in which the prospect of litigation looms over and influences negotiations—FRAND negotiators also fear the constraints of the ex ante FRAND licensing commitment. That

SOUTH CENTER RESEARCH PAPERS No. 21, 23 (2009) (describing FRAND policy recommendations for developing countries).

^{107.} Murphree & Breznitz, *supra* note 106, at 7 (describing China's interest in pursuing lower FRAND royalties).

^{108.} See generally Damien Geradin, The Meaning of "Fair and Reasonable" in the Context of Third-Party Determination of FRAND Terms, 21 GEO. MASON L. REV. 919, 924 (2014) (asserting that "thousands of licensing agreements covering SEPs" are "adopted every year through bilateral negotiations"); Pierre Larouche et al., Settling FRAND Disputes: Is Mandatory Arbitration a Reasonable and Non-Discriminatory Alternative?, 10 J. COMPETITION L. ECON. 581, 582 (2014) (asserting that "[t]housands of license negotiations involving FRAND-committed SEPs have occurred successfully"); D. Daniel Sokol & Wentong Zheng, FRAND in China, 22 TEX. INTELL. PROP. L.J. 71, 73 (2013) (observing that "the overwhelming majority of license agreements determined through bilateral negotiations without the need for any dispute resolution process").

^{109.} Mark D. Rosen, *Choice-of-Law as Non-Constitutional Federal Law*, 99 MINN. L. REV. 1017, 1077 (2015) (unpredictability as to choice-of-law means that parties "will be unable to conform their actions to legal requirements, or to intelligently bargain in the shadow of the law"); Christopher A. Whytock, *Myth of Mess? International Choice of Law in Action*, 84 N.Y.U. L. REV. 719, 742 (2009) (noting that "relative certainty about which law a judge will apply can facilitate bargaining"). The legal uncertainty created by forum-shopping in patent cases was a central justification for the creation of the Federal Circuit. *See generally* J. Jonas Anderson, *Court Competition for Patent Cases*, 163 U. PA. L. REV. 631 (2015).

^{110.} The widely used metaphor of the "shadow" of the law is usually attributed to Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950 (1979). The metaphor symbolizes the impact of background legal rules and process on "negotiations and bargaining that occur *outside* of the courtroom." *Id.* at 950; *see also* Melamed & Shapiro, *supra* note 9, at 2114 (observing that FRAND licensing negotiations are "heavily influenced" by the parties "predictions as to what the court will do if they cannot agree"); Suzanne Michel, *Bargaining For RAND Royalties in the Shadow of Patent Remedies Law*, 77 ANTITRUST L.J. 889, 893 (2011) (asserting that possible judicial remedies provide "the framework within which the parties bargain for a RAND royalty amount"); Anup Malani & Jonathan S. Masur, *Raising the Stakes in Patent Cases*, 101 GEO. L.J. 637, 682 (noting that in patent disputes "settlement and licensing occur in the shadow of expected trial outcomes").

commitment provides a mandatory framework for licensing negotiations—bargaining outside the framework's permitted compass could be taken as a violation of the FRAND contract, and agreements that break through the FRAND constraints could be later undone by a court. 111 However, uncertainty as to how the FRAND commitment will be interpreted makes it more difficult for the parties to agree on whether any specific negotiating position complies with the ex-ante FRAND constraints. This uncertainty increases the probability of litigation, and it makes licensing negotiations more difficult to conclude.

In sum, when courts inflict a global FRAND resolution on parties that have not consented to such jurisdiction, they also raise concerns of comity and fears of forum shopping. This can encourage parties to race towards litigation, and it may incentivize individual jurisdictions to adopt inefficient FRAND policies in a quest for litigation business. Moreover, these concerns create significant uncertainty as to the resolution of future FRAND disputes since parties are less able to predict which legal regime will be applied to resolve the transnational conflict. This lack of clarity can hinder parties from reaching mutually acceptable royalty agreements, and it increases the probability that such disputes will end up in litigation before the courts.

C. Jurisdiction

Even if the consolidation of multinational FRAND litigation into a single forum presents the most efficient path to the global resolution of disputes, that path may not always be accessible through the federal courts of the United States. FRAND disputes typically implicate substantive issues of patent law. United States courts, however, have generally shied away from adjudicating disputes concerning foreign patent rights. As such, in many circumstances, United States federal courts may decline jurisdiction over the foreign aspects of a global FRAND dispute and may be required to abstain from setting foreign royalty rates. While neither the *Microsoft* nor the *TCL* Court addressed this jurisdiction question, in both cases the litigants had consented to the court's determination of FRAND

^{111.} Microsoft Corp. v. Motorola, Inc., 795 F.3d 1024, 1056–57 (9th Cir. 2015) (upholding jury finding that Motorola breached its contractual FRAND obligation by making unreasonable offers in negotiation); TCL Comme'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No. SACV 14-341 JVS(DFMx), 2017 U.S. Dist. LEXIS 214003, at *180 (C.D. Cal. Dec. 21, 2017) (finding that Ericsson's licensing offers did not breach the contractual FRAND obligations). In the European Union, parties must negotiate FRAND licenses according to specific, choregraphed steps in order to preserve their rights. See generally Nadine Hermann, Injunctions in Patent Litigation Following the CJEU Huawei v ZTE Ruling (Germany), 9 J. EUR. COMPETITION L. & PRAC. 582 (2018).

rates.¹¹² By contrast, in the recent FRAND litigation between Samsung and Huawei, the court noted the possibility that the court "would not be able to decide a FRAND rate for the parties" global portfolios" but only "have the ability to determine a FRAND rate for U.S. SEPs."¹¹³

In the words of the Supreme Court, United States district courts are "courts of limited jurisdiction," and can only hear cases as authorized by the Constitution and statutes. He Patent Act invests federal courts with jurisdiction to hear actions "arising under any Act of Congress relat[ed] to patents," there are no federal statutes authorizing federal courts to hear disputes arising under the foreign patent laws. Other jurisdictional hooks potentially authorizing federal courts to adjudicate issues of foreign patent law include the statutory rubrics of "supplemental jurisdiction" or "diversity jurisdiction." However, as shown below, case law has repeatedly limited the competence of federal courts to adjudicate matters of foreign patent law under these other jurisdictional rubrics. As such, to the extent setting worldwide FRAND royalty rates requires a determination of issues under foreign patent law, federal courts may decline to adjudicate such matters.

For example, the Federal Circuit has limited the authority of courts to employ "supplemental jurisdiction" to adjudicate matters of foreign patent law. Generally, supplemental jurisdiction allows federal courts to hear claims that "form part of the same case or controversy" of other claims properly before the court. 119 As such, in principle, supplemental jurisdiction could allow federal courts to hear cases involving tightly related questions of United States and foreign patent law—for example, determining the validity of counterpart foreign patents for purposes of setting a global FRAND royalty. However, in the 2007 case of *Voda v*.

^{112.} *Microsoft*, 795 F.3d, at 1037–40 (discussing the parties' consent to the determination of RAND royalties by a bench trial); *TCL Commc'n*, 2015 U.S. Dist. LEXIS 191512, at *10 (noting that the "the parties agree that the present FRAND action should resolve their global licensing dispute"). Despite the parties' agreement, the courts may have been required to examine the issue sua sponte. *See generally* Scott Dodson, *Mandatory Rules*, 61 STAN. L. REV. 1, 3 (2008) (courts obligated to "police compliance" with jurisdictional rules "sua sponte").

^{113.} Huawei Techs. Co. v. Samsung Elecs. Co., No. 3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052, at *28 (N.D. Cal. Apr. 13, 2018).

^{114.} See ERWIN CHEMERINSKY, FEDERAL JURISDICTION § 5.1, at 277–83 (6th ed. 2012).

^{115. 28} U.S.C § 1338(a) (2012).

^{116.} See, e.g., Stein Assoc. v. Heat & Control, Inc., 748 F.2d 653, 658 (Fed. Cir. 1984) (stating that "[o]nly a British court, applying British law, can determine validity and infringement of British patents").

^{117. 28} U.S.C. § 1367(a) (2012).

^{118.} Id. § 1332(a).

^{119.} Id. § 1367(a).

Cordis, 120 the Federal Circuit held that important values weigh against the American adjudication of foreign patent claims. 121 In Voda, the district court first held that it had supplemental jurisdiction to resolve claims of infringement of patents issued in Canada, France, Germany, the United Kingdom, and the European Union. 122 The Federal Circuit reversed, asserting that considerations of comity, judicial economy, convenience, and fairness generally required federal courts to decline supplemental jurisdiction over foreign patent claims. 123 According to the Federal Circuit, "a patent right . . . only arises from the legal right granted and recognized by the sovereign within whose territory the right is located."¹²⁴ The court held that "[i]t would be incongruent to allow the sovereign power of one to be infringed or limited" by another sovereign. 125 In addition, the court noted that it lacked "institutional competence" in foreign patent law. 126 As such, according to the Federal Circuit, hearing foreign patent claims would not be particularly efficient and could result in "at least the same magnitude of litigation" as filing infringement claims in each applicable territory. 127

Subsequent to *Voda*, at least one federal district court has held that it does not have supplemental jurisdiction to adjudicate the parts of a FRAND dispute touching on foreign patents. *Optis Wireless Tech., LLC v. Huawei Techs. Co.*¹²⁸ involved a FRAND dispute between two Texas companies. The patentee sought a declaratory judgement from the United States court that it had complied with its worldwide FRAND commitments—noting that foreign courts themselves are "increasingly making global FRAND determinations." The district court, however, declined to assert jurisdiction over the claim, holding that a determination

^{120. 476} F.3d 887 (Fed. Cir. 2007).

^{121.} *Id.* at 898 (pointing to "considerations of comity, judicial economy, convenience, fairness, and other exceptional circumstances" as "compelling reasons to decline" supplemental jurisdiction to adjudicate foreign patent infringement claims). *See also* Fairchild Semiconductor Corp. v. Third Dimension (3D) Semiconductor, Inc., 589 F. Supp. 2d 84, 91 (D. Me. 2008) (holding that *Voda* means that "it is almost always an abuse of discretion to use that supplemental power to deal with infringement claims involving foreign patents").

^{122.} Voda v. Cordis Corp., No. CIV-03-1512-L, 2004 U.S. Dist. LEXIS 28102, at *3 (W.D. Okla., Aug. 2, 2004), rev'd, 476 F.3d 887, 905 (Fed. Cir. 2007).

^{123.} Voda, 476 F.3d at 898.

^{124.} Id. at 902.

^{125.} Id.

^{126.} Id. at 903.

^{127.} Id.

^{128.} No. 2:17-cv-00123-JRG-RSP, 2018 U.S. Dist. LEXIS 115100 (E.D. Tex. July 11, 2018).

^{129.} Id. at *25.

of whether a party had breached its FRAND obligations would require an assessment of foreign law "governing FRAND compliance and royalty rate determinations." Hearing such claims would be similar to adjudicating "a foreign infringement claim" with respect to foreign patents. As such, following *Voda*'s command, the court declined to assert supplemental jurisdiction over the foreign aspects of the FRAND dispute. 132

Diversity jurisdiction also does not provide a secure basis to ensure that federal courts adjudicate the foreign elements of FRAND disputes. Generally, diversity jurisdiction allows federal courts to hear cases between parties that are "diverse"—for example, between citizens of different states. 133 Unlike supplemental jurisdiction, federal courts in most cases do not formally have the discretion to decline to hear cases that come under diversity jurisdiction. 134 Federal courts faced with diverse litigants could thus, in principle, be required to adjudicate claims concerning foreign patent rights—again, for example, to set global FRAND rates. Even so, the Federal Circuit has stated that claims concerning the infringement of foreign patents may be dismissed under the doctrine of forum non conveniens. 135 Under that doctrine, a court with subject matter jurisdiction may nonetheless decline to hear a claim if the forum is inappropriate, and factors to be considered in determining the proprietary of the forum' include concerns of comity and difficulties in applying foreign law. 136 Accordingly, as per the Federal Circuit, the complexities of foreign patent law can justify the dismissal of a claim over which the courts would otherwise have diversity jurisdiction. 137

As such, under current law, whether a federal court would accept diversity jurisdiction over the foreign aspects of a FRAND dispute depends on the particular circumstances of each case. On the one hand, the Federal Circuit has often viewed contractual licensing disputes through the prism of patent law, and allocated jurisdiction over such cases

^{130.} Id. at *23.

^{131.} Id.

^{132.} See also Lotes Co. v. Hon Hai Precision Indus. Co., No. C 11-01036 JSW, 2011 U.S. Dist. LEXIS 160370 (N.D. Cal. July 14, 2011) (declining to find supplementary jurisdiction to adjudicate the scope of foreign patent claims in a dispute over the interpretation of a license agreement).

^{133. 28} U.S.C. § 1332(a)(1) (2012).

^{134.} See generally David L. Shapiro, Jurisdiction and Discretion, 60 N.Y.U. L. REV. 543, 587 (1985) (asserting that "a wholesale refusal by the federal courts to adjudicate diversity cases . . . simply cannot be reconciled with the congressional grant of authority").

^{135.} Mars Inc. v. Kabushiki-Kaisha Nippon Conlux, 24 F.3d 1368, 1375-76 (Fed. Cir. 1994).

^{136.} Piper Aircraft Co. v. Reyno, 454 U.S. 235, 241 n.6 (1981).

^{137.} Mars, 24. F.3d at 1376.

accordingly.¹³⁸ That perspective of the Federal Circuit would be broadly consistent with a recognition that the foreign elements of FRAND litigation subsume related disputes under foreign patent law, and that it would not be appropriate for a United States court to adjudicate those foreign disputes and associated FRAND issues. On the other hand, at least one United States district court has found that a court with diversity jurisdiction must adjudicate a contract dispute that could potentially involve the interpretation of foreign patents.¹³⁹ That case, however, involved a dispute between two United States companies and a contract that selected a United States forum for dispute resolution.¹⁴⁰ In contrast, FRAND contests frequently involve disputes with and between foreign companies, and FRAND commitments do not usually specify any jurisdiction for dispute resolution.¹⁴¹

In sum, even if foreign courts are prepared to seize jurisdiction to impose global FRAND royalties, United States courts may not have the power to make such determinations. Given the choice between forums that can only provide piecemeal, territorially limited adjudication, and other arenas that promise to resolve a global dispute, some litigants may prefer to press their claims in the latter jurisdictions. ¹⁴² In that event, American FRAND rates may in many situations be determined by foreign

^{138.} The Federal Circuit has frequently held that the federal courts have original jurisdiction over contractual licensing disputes that require a determination of patent validity or infringement, reasoning that such contractual disputes hinge substantially on determinations of patent law. See Jang v. Boston Sci. Corp., 767 F.3d 1334 (Fed. Cir. 2014); U.S. Valves Inc. v. Dray, 212 F.3d 1368 (Fed. Cir. 2000). But see MDS (Can.), Inc. v. Rad Source Techs., Inc., 720 F.3d 833 (11th Cir. 2013) (contract claims requiring a determination of infringement do not arise under the patent laws). Often, the contractual connection to substantive patent law is tightened by the language of the contract, since a contract may link the payment of royalties to whether a patent is valid and infringed. Jang, 767 F.3d at 1337 (noting "the extent to which validity is made relevant to the resolution of the breach-of-contract claim by the language of the contract itself"). In the same way, FRAND commitments often hang on whether the relevant patent is valid, standard-essential or infringed. See ETSI Patent Policy, supra note 87, § 15.6 (tying the definition of whether a patent is essential to whether certain actions infringe that patent).

^{139.} Fairchild Semiconductor Corp. v. Third Dimension (3D) Semiconductor, 589 F. Supp. 2d 84, 99–100 (D. Me. 2008). *See also* Baker-Bauman v. Walker, No. 3:06cv017, 2007 U.S. Dist. LEXIS 23080 (S.D. Ohio Mar. 29, 2007) (exercising diversity jurisdiction over infringement claims under Australian and Chinese patents).

^{140.} Fairchild, 589. F. Supp. 2d at 100; see also Au New Haven, LLC v. YKK Corp., No. 15-CV-3411, 2018 U.S. Dist. LEXIS 77804, at *16 (S.D.N.Y. May 8, 2018) (holding that despite *Voda* the court can interpret the scope of a Japanese patent in the context of a dispute over interpretation of a license agreement, since the parties "expressly agreed to litigate all disputes related to the" license agreement "in New York courts").

^{141.} See supra note 87 and accompanying text.

^{142.} See Contreras, supra note 16, at 755–56; Treacy & Bond, supra note 100.

courts, and United States courts may in those cases lose the opportunity to determine FRAND rates for the domestic American market.¹⁴³

II. THE AWKWARD FIT OF ARBITRATION

Given the complications of consolidating multinational FRAND disputes, some commentators and regulatory agencies have suggested that such conflicts could be most efficiently resolved through international arbitration. He will be most efficiently resolved through international arbitration. He potential cost savings offered by arbitration, in principle, arbitration also offers the parties a means of skirting the jurisdictional squabbles of multinational FRAND litigation. FRAND litigation litigates agree to arbitrate their dispute, they could consolidate all claims worldwide into a single, comprehensive proceeding. The so-called New York Convention provides an international infrastructure for the recognition and enforcement of arbitral awards. As such (goes the argument), an agreement to arbitrate a global FRAND dispute, and the ensuing arbitral determination of global FRAND royalty rates, would, pursuant to the Convention, be recognized and enforced in all major jurisdictions. In other words, international arbitration offers a ready and recognized means for the resolution of

^{143.} *Cf.* Optis Wireless Tech., LLC v. Huawei Techs. Co., No. 2:17-cv-00123-JRG-RSP, 2018 U.S. Dist. LEXIS 115100, at *25 (E.D. Tex. July 11, 2018) (rejecting plaintiff's arguments that "foreign courts are increasingly making global FRAND determinations, and it would be unfair if United States courts did not follow that trend").

^{144.} See generally Contreras & Newman, supra note 87, at 23 (listing parties recommending the use of arbitration to resolve FRAND disputes); Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: Setting Out the EU Approach Standard Essential Patents, 11 (Nov. 29, 2017), https://ec.europa.eu/docsroom/documents/26583/attachments/1/translations/en/renditions/native [https://perma.cc/G6T5-D8ZK] (arbitration and mediation offer "offer swifter and less costly dispute resolution"). Indeed, a minority of Standard Development Organizations already incorporate mandatory forum selection and dispute resolution clauses in their intellectual property policies. See Contreras & Newman, supra note 87 passim.

^{145.} Lemley & Shapiro, *supra* note 16, at 1163–64 (asserting that arbitration of FRAND disputes can "moot" comity concerns in multinational FRAND disputes); MUNICH IP DISPUTE RESOLUTION FORUM, FRAND ADR CASE MANAGEMENT GUIDELINES 16 (2018) [hereinafter Munich FRAND ADR Guidelines], http://www.ipdr-forum.org/wp-content/uploads/2018/08/frand-guidelines_helvetica_rz6_klein_online.pdf [https://perma.cc/L4KY-TPVN](asserting that referring a FRAND dispute to arbitration "makes it possible to obtain a global solution").

^{146.} Convention on the Recognition and Enforcement of Foreign Arbitral Awards art. 1, June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 38 [hereinafter New York Convention]. See also NIGEL BLACKABY ET AL., REDFERN AND HUNTER ON INTERNATIONAL ARBITRATION 61 (6th ed. 2015) (describing the importance of the New York Convention to the recognition and enforcement of international arbitration).

transnational disputes, and this structure could also be employed to bring FRAND royalty disputes to a comprehensive, global conclusion. 147

Nevertheless, despite the advantages of an agreed arbitral process, arbitration should not be the default option for the resolution of multinational FRAND disputes. Conflicts regarding the magnitude of FRAND royalties can incorporate commercial, legal, and policy complexities that are inappropriate for arbitration, either because the resolution of those issues requires prior (and perhaps unachievable) agreement on the parameters of the arbitral process, or because those issues touch on non-arbitrable matters of public concern. As a result, in many circumstances arbitration will not be able to provide a final, conclusive resolution of the dispute, and closure will in any event require litigation in national courts. Standard-setting organizations, perhaps for these reasons, have generally not mandated that FRAND royalty disputes be resolved through arbitration.¹⁴⁸ The following sections catalog the complexities of consolidating FRAND disputes through arbitration section A spotlights issues connected to patent validity and infringement. section B focuses on matters of antitrust and competition law, and section C looks at the complications of constructing a generally applicable arbitral framework for FRAND conflicts.

A. Patent Validity and Infringement

Mandating the use of arbitration for the resolution of FRAND disputes would require consensus on an acceptable arbitral framework. Most importantly, participants would need to decide whether to incorporate challenges to patent validity and determinations of infringement in any agreed arbitral process. ¹⁴⁹ Consensus on this matter, however, has, to date,

^{147.} Arbitration also offers other well-known advantages. For multinational FRAND disputes, for example, arbitration allows the party to aim for neutrality, expertise, flexibility, and confidentiality in the dispute resolution process. In addition, a responsive arbitral process may be able to assist the parties in customizing an appropriate resolution, including coming to a mutual agreement on the broader structure of a full FRAND license agreement. *See, e.g.*, Apple Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 U.S. Dist. LEXIS 187878, at *20 (W.D. Wis. Nov. 8, 2012) (asserting that binding arbitration would allow the parties to resolve the dispute since they would "be able to negotiate any and all of the many aspects of their licensing agreement"). Analysis of these other purported advantages of FRAND arbitration is beyond the scope of this Article.

^{148.} See Contreras & Newman, supra note 87, at 29–30 (listing a "handful" of standard-setting organizations that require dispute resolution through arbitration).

^{149.} Litigants may also dispute whether "essentiality" should be considered within the arbitral proceedings—whether a patent declared by one of the litigants as "standard-essential" is correctly described as such. For reasons why litigants may wish to dispute patent essentiality separately from the question of infringement, see Jorge L. Contreras, Essentiality and Standard Essential Patents, in TECHNICAL STANDARDIZATION, supra note 3, at 209, 225.

eluded participants in the standard-setting process. On the one hand, addressing questions of validity and infringement within the arbitral framework is necessary to achieve a full resolution of the dispute. Indeed, manufacturers have balked at participating in proposed arbitral frameworks in which these issues were not addressed. ¹⁵⁰ On the other hand, the determination of validity and infringement for even a single patent ordinarily requires lengthy and expensive litigation, and the cost of arbitrating these issues across an entire portfolio would seem to undermine much of the efficiencies that could be achieved through arbitral proceedings. ¹⁵¹ Perhaps reflecting the difficulty of coming to a consensus on these questions, proposed institutional frameworks for FRAND arbitration have not taken a definitive position regarding the extent to which validity and infringement should be addressed in arbitration. ¹⁵²

150. For example, the Google Consent Order allowed FRAND royalty terms to be set through arbitration. *See* Google Consent Order, *supra* note 77, at III.C.2 (providing that a potential licensee may elect to have contested FRAND terms resolved through "Binding Arbitration"). Some manufacturers expressed concern that the proposed arbitral process of the Google Consent Order deviated from ordinary legal requirements to assess patent validity, essentiality, and infringement. *See* Letter from E. Joshua Rosenkranz, Attn., Orrick, Herrington & Sutcliffe, LLP, to Donald S. Clark, Sec'y, Fed. Trade Comm'n at 7 (Feb 22, 2013) [hereinafter Apple FTC Comments], https://www.ftc.gov/sites/default/files/documents/public_comments/2013/02/563708-00029-85598.pdf [https://perma.cc/BU7G-QUKU] (requesting that the FTC clarify that "these issues [of patent validity and infringement] must be decided in any arbitration" and that nothing in the Google Consent Order should be understood to "shift the traditional burdens of proof" regarding these

Consent Order should be understood to "shift the traditional burdens of proof" regarding these matters); Munich FRAND ADR Guidelines, *supra* note 145, at 11 (noting that implementers "particularly criticized" a proposed arbitration framework that limited assessments of patent validity, essentiality and infringement). Objections to arbitral procedures that do not definitively settle issues of validity may also come from patentees. *See* Larouche, *supra* note 108, at 602 (asserting that patent owners will be undercompensated "in any world where arbitration is mandatory but validity challenges are possible").

151. Larouche, *supra* note 108, at 607 (claiming that "any purported efficiencies or cost savings resulting from the arbitration are eliminated" if the procedure requires consideration of ancillary issues such as patent validity); Lemley & Shapiro, *supra* note 16, at 1152 (noting that FRAND arbitral procedures which allow for the presentation of evidence concerning validity and infringement will not be "an easy matter" and will involve "extensive discovery"). Some commentators have suggested that an efficient arbitral process need not make final determinations regarding patent validity, but could instead simply take evidence regarding validity into account in setting a FRAND royalty rate. *See id.*; Contreras, *supra* note 16, at 730 n.140. Notwithstanding the potential efficiencies of such a process, it currently seems implausible that manufacturers would generally agree to a default arbitral framework in which they waive their rights to challenge validity and infringement within the arbitral process.

152. See, e.g., WIPO ARBITRATION & MEDIATION CTR., GUIDANCE ON WIPO FRAND ALTERNATIVE DISPUTE RESOLUTION (ADR) 7, https://www.wipo.int/export/sites/www/amc/en/docs/wipofrandadrguidance.pdf [https://perma.cc/H5VW-UFGH] (noting that "[i]n the interest of time and cost-efficiency... the parties may agree to limit claims or defenses that they may bring in the ADR proceedings, including patent essentiality, validity, infringement, and enforceability"); Eli Greenbaum, Forgetting FRAND: The WIPO Model Submission Agreements, LES NOUVELLES, June 2015, at 81, 85 (noting that the template WIPO FRAND arbitration submission agreements "avoid creating specific rules")

Even if litigants were to agree on a mechanism for addressing patent validity within the arbitral process, the resulting award may not be enforceable in important jurisdictions. As such, it may be impossible to consolidate an entire FRAND dispute into a single arbitration since some jurisdictions will always allow parallel, and possibly duplicative, litigation regarding patent validity in national courts. For example, China, Germany, France, and the Netherlands all consider issues of patent validity to involve non-arbitrable matters of public policy. 153 As the New York Convention does not require courts to enforce arbitral awards that violate public policy, those countries are unlikely to enforce foreign arbitral awards that make determinations regarding patent validity. 154 Moreover, courts in those jurisdictions may refuse to stay local litigation regarding patent validity even if the parties separately proceed with a related FRAND arbitration.¹⁵⁵ In other words, no agreed arbitral process can provide a comprehensive, final pronouncement of judgement in multinational FRAND disputes, since matters of patent validity will likely remain as loose ends to be tied up through litigation in national courts.

Moreover, even if parties agree on a mechanism for the arbitration of patent validity, and even if the relevant jurisdictions would enforce the arbitral award, that award may need to be later reexamined. Many countries that allow for the arbitration of patent validity only give *inter partes* effect to the arbitral award. According to these jurisdictions the determination of patent validity in the arbitral award would not control in subsequent FRAND disputes with third parties, and in those subsequent disputes the question of validity would need to be relitigated. This requirement to revisit issues of patent validity will of course weigh down

to address...claims of invalidity in the FRAND context"); Munich FRAND ADR Guidelines, *supra* note 145, at 26 (presenting a menu of options for addressing patent validity within an arbitration).

^{153.} See generally M.A. Smith et al., Arbitration of Patent Infringement and Validity Issues Worldwide, 19 HARV. J.L. & TECH. 299, 305 (2006) (discussing the laws of a large "group of states" that do "not allow the arbitration of claims involving the validity of a patent").

^{154.} See New York Convention, supra note 146, art. V(2)(b) (providing that "[r]ecognition and enforcement of an arbitral award" may be refused if "contrary to the public policy"); Smith, supra note 153, at 303 (noting that awards concerning patent validity might violate public policy in certain jurisdictions).

^{155.} *Id.*; *supra* note 146, art. II(3) (courts not required to refer parties to arbitration if it finds that the agreement is "null and void, inoperative or incapable of being performed").

^{156.} See M.A. Smith, supra note 153, at 305 (observing that in patent arbitration, "[t]he effect of the award . . . generally remains inter partes. Thus, an arbitral tribunal award finding a patent invalid generally will not preclude the enforcement of that patent against nonparties to the arbitration"); 35 U.S.C § 294(c) (2012) ("An award by an arbitrator shall be final and binding between the parties to the arbitration but shall have no force or effect on any other person.").

subsequent FRAND disputes with duplicative costs.¹⁵⁷ More importantly, however, the limited effect given to arbitral determinations of patent validity conflicts with the FRAND "non-discrimination" requirement. Though the meaning of the non-discrimination is open to interpretation, at base it demands some manner of consistency between the commercial terms granted to different licensees.¹⁵⁸ However, that requirement may be violated if, for example, a particular arbitral panel decides that a patent is valid and awards royalties for its infringement, even as other licensees are not required by subsequent decision-makers to make royalty payments for the same patent.¹⁵⁹ As such, any arbitral award may need to be reconsidered in order to adjust the awarded FRAND rate in light of subsequent decisions. This non-discrimination requirement, and the possibility that any arbitral award will need to be repeatedly revisited, would frustrate the consolidation of a FRAND dispute into a single definitive, arbitral proceeding.

B. Antitrust

Efforts to consolidate multinational proceedings through arbitration may also be thwarted by the antitrust aspects of FRAND disputes. As discussed above, FRAND disputes can include claims under domestic antitrust and competition law. ¹⁶⁰ Many jurisdictions would allow for the arbitration of such competition law claims. ¹⁶¹ At the same time, however,

^{157.} These costs may be higher in the FRAND context. FRAND-committed patents—being essential to required technological standards—are typically the subject of numerous license agreements, and are litigated more frequently than other patents. *See generally* Timothy Simcoe et al., *Competing on Standards? Entrepreneurship, Intellectual Property, and Platform Technologies*, 18 J. ECON. & MGMT. STRATEGY 775 (2009).

^{158.} Eli Greenbaum, Nondiscrimination in 5G Standards, 94 NOTRE DAME L. REV. ONLINE 55 (2018).

^{159.} See, e.g., M.A. Smith, supra note 153, at 324 (noting that "[a] finding of invalidity" in arbitration "amounts to a permanent license of the patent for the accused infringer: the arbitration is binding under the doctrine of res judicata with respect to the accused infringer, and the patent may still be enforced against nonparties"); cf. Willemijn Houdstermaatschappij BV v. Standard Microsystems Corp., 925 F. Supp. 193 (S.D.N.Y. 1996) (beneficiary of a "Most Favored License" clause claiming that the clause is triggered by an arbitral proceeding and ensuing agreement granting another party "immunity from suit").

^{160.} See supra note 9 and accompanying text.

^{161.} Mitsubishi Motors Corp. v. Soler Chrysler-Plymouth Inc., 473 U.S. 614, 628–40 (1985) (allowing arbitration of antitrust claims under United States law). See also Vera Korzun, Arbitrating Antitrust Claims: From Suspicion to Trust, 48 N.Y.U. J. INT'L L. & POL. 867 (2016) (discussing the arbitrability of antitrust claims in the United States and the European Union). Of course, participants in the standard-setting process that intend to require arbitration of antitrust and competition law claims need to draft the FRAND commitment in a manner that requires arbitration of such claims. See Zoran Corp. v. DTS, Inc., No. C 08-4655 JF (HRL), 2009 U.S. Dist. LEXIS 6675, at *4 (N.D. Cal. Jan. 20,

countries also often see their domestic competition law as implicating core issues of public policy. ¹⁶² As such, as with matters of patent validity, under the New York Convention countries may refuse to enforce arbitral awards that their national courts view as inconsistent with domestic competition policy. ¹⁶³ In addition, many jurisdictions provide that arbitral awards regarding competition law do not have preclusive effect beyond the parties to the arbitration. ¹⁶⁴ As discussed above, this lack of preclusive effect may be fundamentally inconsistent with the FRAND non-discrimination requirement and may result in the reexamination of arbitral awards that conflict with subsequent decisions concerning the same FRAND commitments. These issues, again as with matters of patent validity, may preclude the consolidation of a FRAND dispute into a final, comprehensive arbitral proceeding.

C. Framework of the Arbitral Process

A generally applicable arbitral framework would require agreement on the national law used to adjudicate the dispute, since the principles for resolving FRAND disputes vary by country. For example, different jurisdictions apply different methodologies for calculating FRAND royalties and damages. ¹⁶⁵ Similarly, jurisdictions take diverse positions on

^{2009) (}finding arbitration clause of a standard-setting organization was not drafted to require arbitration of associated antitrust claims).

^{162.} Korzun, *supra* note 161, at 906. *See also Mitsubishi*, 473 U.S. at 638 (holding that with respect to the arbitration of antitrust claims, "the national courts of the United States will have the opportunity at the award-enforcement stage to ensure that the legitimate interest in the enforcement of the antitrust laws has been addressed"); Munich FRAND ADR Guidelines, *supra* note 145, at 17 (noting that in Europe, "awards by arbiter tribunals in FRAND disputes must recognize competition law as a matter of public policy").

^{163.} For example, under the Court of Justice of the European Union (CJEU)'s decision in Genentech v. Hoechst GmbH, No. C-567/14, 2016 EUR-Lex CELEX LEXIS ¶ 40 (July 7, 2016), a FRAND arbitral award may be challenged under European Union competition law if the award provides for a license that cannot be terminated. In *Genentech*, the CJEU was asked to set aside an arbitral award concerning patent royalties. The arbitral panel had held that a license agreement did not violate European competition law by requiring the payment of royalties on patents that had subsequently been found invalid. The CJEU held that the arbitral award did not violate European competition law since the license agreement could be terminated. However, license agreements that required payment of royalties on patents found invalid, and which did not include a right to terminate, could be challenged under EU competition law.

^{164.} See, e.g., Alexandra Theobald, Mandatory Antitrust Law and Multiparty International Arbitration, 37 U. PA. J. INT'L L. 1059, 1066 (2016).

^{165.} See, e.g., Contreras, supra note 16, at 718–22 (listing "controversies" regarding the applicable principles for the calculation of FRAND royalties); Unwired Planet Int'l Ltd. v. Huawei Tech. Co. Ltd. [2017] E.W.H.C. (Pat) 711 p. 97 (rejecting the ex ante approach of United States courts to

how strictly the FRAND non-discrimination requirement should be interpreted. 166 National law could, in principle, even differ as to whether a FRAND commitment exists at all. 167 In other words, in certain situations, it may be difficult for an arbitral tribunal to identify sufficiently concrete principles for assessing FRAND royalties without making reference to specific national law. 168 In trying to set out the framework for a FRAND arbitration, each party would push for the governing law most favorable to its position. This tug-of-war could be especially fierce in multinational patent litigation between firms of different nationalities. A generally applicable arbitral framework could be impossible to achieve if the parties cannot even agree on what law should govern the dispute. 169

FRAND royalty calculations, in which FRAND "represents the rate which would be agreed . . . before the patented invention is adopted into the standard").

^{166.} Compare Unwired Planet Int'l Ltd. v. Huawei Tech. Co., [2017] E.W.H.C. (Pat) 711p. 501 (Eng.), aff'd, [2018] E.W.C.A. (Civ) 2344 (holding that the FRAND non-discrimination commitment is not violated unless the different royalties paid by licensees would "distort competition" between them), with TCL Commc'n Tech. Holdings v. Telefonaktienbolaget LM Ericsson, No. SACV 14-341 JVS(DFMx), 2017 U.S. Dist. LEXIS 214003, at *165 (C.D. Cal. Nov. 8, 2017) (holding that competition law provides "no guide to understanding ETSI's non discrimination" commitment). See also Unwired Planet Int'l Ltd. v. Huawei Tech. Co. Ltd. [2018] EWCA (Civ) 2344 p. 77 (presenting Huawei's arguments that Chinese approaches to the FRAND non-discrimination requirement differ from the approach taken by the English court of first instance).

^{167.} See, e.g., FTC v. Qualcomm Inc., No. 17-CV-00220-LHK, 2018 U.S. Dist. LEXIS 190051, at *48 (N.D. Cal. Nov. 6, 2018) (holding that certain FRAND commitments required Qualcomm to "license its SEPs to modem chip suppliers"). Qualcomm had contended that such a requirement was contrary to "industry practice." Id. at *43. Other jurisdictions could take a contrary position. See Jorge Padilla & Koren W. Wong-Ervin, Portfolio Licensing to Makers of Downstream End-User Devices: Analyzing Refusals to License FRAND-Assured Standard-Essential Patents at the Component Level, 62(3) THE ANTITRUST BULLETIN 494, 507 (2017) (asserting that in many circumstances there may be "no justification" for compelling an SEP holder to license on FRAND terms to component manufacturers); see also LG Offered Nokia Privateer Conversant Less than 1% of the Standard-Essential Patent License Fees It Demands—And Even That Turns Out Unwarranted, FOSS PATENTS (Apr. 25, 2019) http://www.fosspatents.com/2019/04/lg-offered-nokia-privateer-conversant.html [https://perma.cc/3VSF-78SV] (describing a French court's holding that "FRAND licensing obligations apply only to actually essential patents, not merely declared-essential ones" but that "there's an alternative approach according to which a patent holder's FRAND declaration applies to non-essential patents as well").

^{168.} See Note, General Principles of Law in International Commercial Arbitration, 101 HARV. L. REV. 1816, 1819 (1988) (asserting that arbitral proceedings based on general principles of law rather than specific national law "become unpredictable, and parties to agreements have little ground on which to base their expectations"); Christopher R. Drahozal, Contracting Out of National Law: An Empirical Look At the New Law Merchant, 80 NOTRE DAME L. REV. 523, 533 (2005).

^{169.} See, e.g., Eli Greenbaum, Arbitration Without Law: Choice of Law in FRAND Disputes, 85 FORDHAM L. REV. RES GESTAE 1 (2016) (describing an example of an international FRAND arbitration where the parties from different jurisdictions could not agree on what national law should apply to the determination of a FRAND royalty rate); Unwired Planet [2018] E.W.C.A. (Civ) 2344 p. 78 (Eng.) (presenting Huawei's arguments that the decision of the English court calculated royalties

Moreover, disputes regarding the magnitude of FRAND royalties may only be amenable to resolution within the context of a basic agreement on license terms. Such license terms could include provisions of substantial commercial importance—for example, the period covered by the license, the relevant royalty base, and whether the licensee holds patents of sufficient importance to make a cross-license (and a corresponding reduction in royalty rates) valuable to the patentee. 170 All of these terms impact the commercial transaction's rewards and therefore bear on the magnitude of the FRAND royalties. 171 As such, unless the disputants can come to at least some initial agreement on a licensing framework, an arbitral panel may not have any objective basis for choosing between any of these commercial terms. In short, bringing a FRAND arbitration to a successful conclusion requires the litigants to begin with an agreed, workable outline for adjudicating disputed license terms. Using arbitration as a default option for settling FRAND disputes, however, may assume a level of cooperation between the parties that does not in fact exist.172

and damages "on a different basis from that which the competent courts" of other jurisdictions "would have adopted").

^{170.} Apple Inc. v. Motorola Mobility, Inc., No. 11-cv-178-bbc, 2012 U.S. Dist. LEXIS 187878, at *17–18 (W.D. Wis. Nov. 8, 2012) (detailing the surrounding commercial terms necessary to assess a FRAND rate); *Apple and Google Disagree on Key Parameters of Potential FRAND Arbitration, Including Scope*, FOSS PATENTS (Nov. 16, 2012), http://www.fosspatents.com/2012/11/apple-and-google-disagree-on-key.html [https://perma.cc/3RPL-LTX7] (describing key disagreements between Google and Apple regarding the scope of a possible arbitration to settle a FRAND dispute). *See also* TCL Comme'n Tech. Holdings v. Telefonaktienbologet LM Ericsson, No. SACV 14-00341 JVS (ANx), 2016 U.S. Dist. LEXIS 101920, at *15 (C.D. Cal. July 25, 2016) (noting that thirteen terms of a license agreement, aside from the royalty rate, were disputed between the parties).

^{171.} See J. Gregory Sidak, Mandating Final-Offer Arbitration of FRAND Royalties for Standard-Essential Patents, 18 STAN. TECH. L. REV. 1, 14 (2014) (asserting that "licensing terms are multifaceted and often include forms of consideration beyond the royalty itself" and "[t]o reduce the entire dispute to a single number is not only arbitrary, but also not indicative of actual FRAND terms").

^{172.} Some industry players offered the same criticisms regarding the proposed arbitral procedures in the Google Consent Order. For example, Apple asserted that that the arbitral procedure could "fail at the outset because the parties are unable to agree on the terms or scope of arbitration." See Apple FTC Comments, supra note 150, at 8. Qualcomm provided the FTC with similar comments. See Qualcomm Inc.'s Response to the Commission's Request for Comments on the Proposed Agreement Containing Consent Order at 16, In the Matter of Motorola Mobility LLC & Google Inc., FTC File 121-0120 11, 2013), [hereinafter Qualcomm https://www.ftc.gov/sites/default/files/documents/public_comments/2013/02/563708-00022-85574.pdf [https://perma.cc/7UJX-2PWA] ("A license agreement, like any contract, must be construed as a whole, with no term decided or interpreted in isolation."). But see Lemley & Shapiro, supra note 16, at 1144 n.26 (suggesting that in a FRAND arbitration, the arbitrator should not "resolve disputes over other non-price license terms . . . the FRAND obligation doesn't compel any such terms,

In sum, international arbitration does not present a straightforward path towards the unified resolution of FRAND disputes in a single proceeding. 173 But the obstacles that impede such arbitral consolidation demonstrate two truths about the FRAND commitment. First, the FRAND commitment implicates matters of public interest that can extend beyond a private licensing dispute between two parties. 174 Second, efforts at dispute resolution can founder without national law to give jurisprudential shape to both the substantive and procedural aspects of the FRAND commitment, since the parties may not be able to agree on the framework and scope of dispute resolution proceedings without the constraints of national law. In other words, the meaning of the FRAND commitment depends on background national law, and authorities in different jurisdictions can require interpretations of the FRAND commitment to respect broader public and normative demands. The difficulties of creating a comprehensive FRAND arbitral framework shows that the FRAND commitment cannot be extracted and given abstract meaning outside of the structures of national law. 175

III. TERRITORIAL ADJUDICATION

This Article proposes that FRAND commitments should be modified to provide that, absent other agreement by the parties, the national courts of each country will have jurisdiction for FRAND licensing determinations only for patents issued by that territory.¹⁷⁶ Section A of

so the arbitrator should not have to resolve them"); Contreras, *supra* note 16, at 745 (proposing that arbitrators determine only a FRAND royalty rate but no other commercial terms).

^{173.} Perhaps in recognition of the difficulty of consolidating a global FRAND dispute into a single arbitral proceeding, the Munich FRAND ADR Guidelines recommend that litigants consider resolving the economic calculations of FRAND royalties through arbitration, even as national courts retain jurisdiction to resolve issues of infringement, validity and essentiality. *See* Munich FRAND ADR Guidelines, *supra* note 145, at 20.

^{174.} *Cf.* Apple Inc. v. Qualcomm Inc., No. 3:17-cv-00108-GPC-MDD, 2017 U.S. Dist. LEXIS 145835, at *53–54 (S.D. Cal. Sept. 7, 2017) (noting that the licensing dispute between the two parties involved matters of public policy and that "it is far from accurate to say that this is a paradigmatic 'private contractual dispute' that only implicates the rights and obligations among Apple and Qualcomm [T]his dispute implicates global public concerns").

^{175.} Commentators have raised other concerns regarding the suitability of arbitration for the resolution of FRAND disputes, including whether arbitral panels will properly value intellectual property assets and whether arbitral panels will allow sufficient discovery. *See generally* Sidak, *supra* note 171. Such concerns are beyond the scope of this Article.

^{176.} The proposal for territorial adjudication advanced by this Article does not address the separate question of which substantive law should be applied by national courts in FRAND disputes. Some standard-setting organizations may provide for choice-of-law rules in their own patent policies. *See supra* text accompanying note 87 (discussing the ETSI choice-of law clause). Nevertheless, after analyzing applicable conflict of law rules, courts may nonetheless hold that the law specified by a patent policy is

this Part discusses the advantages presented by the territorial adjudication of FRAND claims. Section B addresses objections to territorial adjudication that have been raised by courts and commentators. This Article argues that while such objections may be compelling in the context of general patent litigation, they have less salience in the FRAND setting. For FRAND litigation, unless the parties agree otherwise, the nature of the dispute presents no real alternative to territorial adjudication. Moreover, as detailed in section C, the FRAND commitment itself provides a means for mitigating the complexities and costs of jurisdiction-by-jurisdiction litigation. ¹⁷⁷

Under this proposal, neither the English court in *Unwired Planet* nor the United States district courts in *Microsoft*, *TCL*, and *Samsung* would have possessed the authority to set global FRAND royalty rates. Rather, the English court's authority would have been limited to FRAND determinations for United Kingdom patents, and the authority of the *Microsoft*, *TCL*, and *Samsung* courts would have been limited to setting royalty rates for United States patents. To the extent the litigating parties

not the law that should be used to calculate FRAND royalties. *See* Yangi Li & Nari Lee, *European Standards in Chinese Courts – A Case of SEP and FRAND Disputes in China, in* GOVERNANCE OF INTELLECTUAL PROPERTY RIGHTS IN CHINA AND EUROPE 266 (Nari Lee et al. eds., 2016) (describing how Chinese courts calculated FRAND royalties under Chinese law, rather than the French law governing the ETSI patent policy). It is also assumed that, regardless of whether a patent policy includes a choice-of-law clause, jurisdictions will always apply their own domestic patent and competition laws. *See, e.g.*, u-blox AG v. InterDigital, Inc., No. 3:19-cv-001-CAB-(BLM), 2019 U.S. Dist. LEXIS 62816, at *6–9 (S.D. Cal. Apr. 11, 2019) (analyzing a breach of contract claim under the French law that governed the applicable FRAND licensing commitment, but analyzing antitrust claims associated with the breach of such FRAND commitment under United States antitrust law).

177. The American Law Institute (ALI) has proposed principles for the adjudication of transnational intellectual property disputes and, consistent with the arguments presented by this Article, such principles would also seem to disfavor the consolidation of a global FRAND royalty dispute in a single jurisdiction. See generally AM. LAW INST., INTELLECTUAL PROPERTY: PRINCIPLES GOVERNING JURISDICTION, CHOICE OF LAW, AND JUDGMENTS IN TRANSNATIONAL DISPUTES (2008) [hereinafter ALI PRINCIPLES]. A "crucial factor" for permitting consolidation under the ALI Principles is whether there exists a single court with jurisdiction to hear the entire dispute—which is unlikely to be the case for FRAND disputes that involve multijurisdictional challenges to patent validity, assessments of essentiality and infringement, and questions of competition law. Id. § 222, III.2.c. Other factors weighing against consolidation under the ALI Principles include the risk of inconsistent judgements and the risk that the "judgement resulting from consolidated proceedings will [not] be enforceable in other [countries]." Id. § 222(1)(g)–(h). As noted above, a number of FRAND disputes to date have resulted in inconsistent judgements and the cross-jurisdictional conflicts to date present strong risks that a global FRAND determination in one jurisdiction will not be enforceable in another territory. Moreover, the ALI Principles note that certain technical patent issues may best be resolved in the jurisdiction where the patent right is registered. Id. § 222 cmt. 5. The ALI Principles also note that cases which involve a multiplicity of claims (such as FRAND cases, which typically involve related patent, antitrust, and contract claims) may not best be resolved by consolidating global claims in one court. Id. § 221 cmt. c; see also Dreyfuss, supra note 15, at 834 (describing situations where "litigation is best situated in each country in which rights are registered").

could not agree on applicable royalty rates for other countries' patents, the parties would be required to bring their claims in the national courts of those countries, and no national court would have jurisdiction over the worldwide dispute. Of course, the parties would be free to agree on alternative dispute resolution procedures, including resolution of the global dispute by arbitration or by a specific national court that would accept jurisdiction over the global matter.

These proposed jurisdictional limitations could be implemented through the intellectual property policies of standard-setting bodies. As noted, courts have held that FRAND commitments made pursuant to such intellectual property policies are binding contracts, and that such contracts can be enforced by implementers of the relevant technology standard. Currently, the majority of such intellectual property policies do not specify a particular forum for dispute resolution. Such policies could be modified to include a territorial forum selection clause—providing that, absent other agreement, disputes would be resolved by the parties on the jurisdiction-by-jurisdiction basis detailed above.

A. Advantages of Territorial Adjudication

The jurisdiction-by-jurisdiction resolution of FRAND disputes presents clear advantages. First, territorial adjudication makes clear what legal background rules apply to FRAND negotiations and licenses in each jurisdiction, since no court will have the authority under the FRAND commitment to interfere with the patent, contract, and competition regimes of other countries. Such clarity can facilitate the FRAND negotiation process and the conclusion of agreed licensing arrangements. In addition, territorial adjudication ends the jurisdictional competition that results in "races to the bottom" or "races to the courthouse." Since each country can only determine FRAND rates for its own patents, no country has an incentive to favor either patentees or implementers in order to attract FRAND litigation business. Similarly, since no court can impose FRAND rates for other countries, neither patentees nor manufacturers have an incentive to rush to file suit in any particular jurisdiction in order to exploit the favorable FRAND jurisprudence of that country.

Second, the territorial resolution of FRAND disputes is consistent with principles of comity. Jurisdiction-by-jurisdiction litigation means that each country will determine the validity and enforceability of its own patent rights. In this manner, the authority of each country will not be "infringed or limited by another sovereign's extension of its

^{178.} See supra note 86 and accompanying text.

jurisdiction."¹⁷⁹ Moreover, territorial adjudication will reduce the frequency of transnational antisuit injunctions. As FRAND litigation in any one jurisdiction will not affect royalty rates in other countries, courts will have no reason to enjoin foreign litigation in order to preserve their own territorially limited jurisdiction. In the words of the Federal Circuit, the territorial adjudication of FRAND royalties will not "prejudice the rights of . . . foreign governments" to adjudicate their own national patent rights. ¹⁸⁰ As noted above, the meaning of the FRAND commitment cannot be divorced from its specific interpretation by any particular national law. As such, no court should presume the authority to commandeer resolution of the global dispute.

Third, territorial adjudication would allow jurisdictions to set independent FRAND policies appropriate to their specific social, economic, and political circumstances. Beveloping countries, for example, may advocate for lower royalty levels than developing countries. Developing countries have sometimes chafed against what they perceive as "onerous" royalties for the use of standardized technology and have pressed for lower rates or even royalty-free commitments. From these countries' point of view, SEPs are often exploited in order to mine exorbitant royalties and exclude competition from developing countries. On the other hand, allowing developing countries to pay lower FRAND rates can facilitate the local availability of technological goods, advance the diffusion of technological know-how, and allow firms in developing countries to compete with more established companies.

^{179.} Voda v. Cordis Corp., 476 F.3d 887, 902 (Fed. Cir. 2007).

^{180.} Id. at 901.

^{181.} See also supra notes 93–99 and accompanying text (discussing the importance of international comity and reciprocity in respecting the independent economic and other policies of other jurisdictions).

^{182.} See, e.g., Michael Murphee & Dan Breznitz, Standards, Patents and National Competitiveness, GLOB. COMM'N ON INTERNET GOVERNANCE PAPER SERIES, Sept. 30, 2016, at 1, 4 (describing how China has emphasized technology standards with low or royalty-free rates). Of course, the FRAND policies of developed countries may also diverge. See, e.g., Fei Deng et al., Comparative Analysis of Court-Determined FRAND Royalty Rates, 32 ANTITRUST 47, 48 (2018) (describing the "substantial" differences between the FRAND rates for Ericsson's patent portfolio in the United Kingdom Unwired Planet decision and the United States TCL decision).

^{183.} KEITH MASKUS, PRIVATE RIGHTS AND PUBLIC PROBLEMS: THE GLOBAL ECONOMICS OF INTELLECTUAL PROPERTY IN THE 21ST CENTURY 166 (2012); Xuan Li & Baisheng An, *IPR Misuse: The Core Issue in Standards and Patents* 23 (South Centre Research Papers No. 21, 2009).

^{184.} Murphee & Breznitz, *supra* note 182, at 6 (stating that in some circumstances, "the openness of technology standards with RAND-based licensing enables firms to make rapid increases in their technology capabilities"); *see also* John Barton, *Integrating IPR Policies in Development Strategies*, *in* TRADING IN KNOWLEDGE 57, 61 (Christophe Bellmann et al. eds., 2003) (observing how strong

Indeed, what constitutes a "fair and reasonable" royalty rate in a developing country may differ from the appropriate FRAND rate in a technologically advanced, developed economy. The territorial adjudication of FRAND commitments could alleviate some pressure from intellectual property policies and royalty rates that are inappropriate for local activities. The territorial adjudication of FRAND commitments could alleviate some pressure from intellectual property policies and royalty rates that are inappropriate for local activities.

Jurisdictions may also have different preferences for the non-monetary aspects of the FRAND commitment. For example, United States courts will only in exceptional circumstances issue injunctions against the infringement of FRAND-committed patents. ¹⁸⁷ In contrast, other jurisdictions are less restrained in providing injunctive relief. ¹⁸⁸ Even among countries where courts can issue injunctions for the infringement of a FRAND-committed patent, individual jurisdictions differ in the

intellectual property protections prevent the growth of competitive technology companies in developing countries).

^{185.} Jorge L. Contreras, *National Disparities and Standards Essential Patents: Considerations for India, in* COMPLICATIONS AND QUANDARIES IN THE ICT SECTOR: STANDARD ESSENTIAL PATENTS AND COMPETITION ISSUES 1, 8–9 (Ashish Bharadwaj et al. eds., 2017) (asserting that in developing countries "[t]he royalties sought by foreign patent-holding firms, while arguably reasonable on an international basis, may be viewed as excessive in local markets").

^{186.} Empirically, it does not seem like developing countries have unreasonably devalued FRAND-committed patents. See, e.g., Jorge L. Contreras & Rohini Lakshané, Patents and Mobile Devices in India: An Empirical Survey, 50 VAND. J. TRANSNAT'L L. 1, 1 (2017) (describing how FRAND litigation in India has "largely resulted in judgments favoring foreign patent holders"); Erick S. Robertson, Highest Court in China Overturns Ridiculously Low Royalty in Interdigital v. Huawei, CHINA PAT. BLOG (Dec. 28, 2018), https://www.chinapatentblog.com/blog/highest-court-in-china-overturns-ridiculously-low-royalty-in-interdigital-v-huawei [https://perma.cc/B5T5-28U3].

^{187.} J. Gregory Sidak, *Injunctive Relief and the FRAND Commitment in The United States, in* 1 CAMBRIDGE HANDBOOK OF TECHNICAL STANDARDIZATION LAW: ANTITRUST AND PATENTS 389 (Jorge L. Contreras ed., 2018) (noting that "in the United States, it is exceptional for an SEP holder to obtain either an injunction or an exclusion order against an infringer of SEPs"). Academic commentary has also presented divergent views about the proprietary of injunctions in the FRAND context. *Compare* Joseph Miller, *Standard-Setting, Patents, and Access Lock-in: RAND Licensing and the Theory of the Firm,* 40 IND. L. REV. 351, 358 (2007) (asserting that "the core meaning of the RAND promise [is] an irrevocable waiver of injunctive relief"), *with* Damien Geradin & Miguel Rato, *Can Standard-Setting Lead to Exploitative Abuse: A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of FRAND,* 3 EUR. COMPETITION J. 101, 118–19 (2007) (arguing that a FRAND commitment "cannot be interpreted as an implicit waiver to its right to seek injunctive relief").

^{188.} See, e.g., Thomas F. Cotter, Comparative Law and Economics of Standard Essential Patents and FRAND Royalties, 22 TEX. INTELL. PROP. L.J. 311, 325 (2014) [hereinafter Cotter, Comparative Law & Economics] (detailing the grant of an injunction against the infringement of standard-essential patent in South Korea); Thomas F. Cotter, Shenzhen Court Enters Injunction Against Samsung for Infringement of Huawei SEPs, COMPARATIVE PATENT REMEDIES (Jan. 11, 2018), http://comparativepatentremedies.blogspot.com/2018/01/shenzhen-court-enters-injunction.html [https://perma.cc/A7SS-REB4] (describing two injunctions issued in Chinese courts); Hermann, supra note 111, at 589 (noting that patentees continue to seek injunctions in Germany).

specific standards that must be met in order to grant such non-monetary remedies. 189 The availability of injunctions has important consequences for the cost of technology and the structure of local markets, 190 and the diversity of international attitudes to FRAND injunctions reflects a broad range of policy positions regarding these consequences. But one court's assertion of authority over a global FRAND dispute effectively cuts off that debate for all other jurisdictions worldwide. For example, the Unwired Planet decision to impose a global FRAND license meant that Huawei's activities would be licensed worldwide—and neither would Unwired Planet seek nor would Huawei oppose an injunction for the infringement of those standard-essential patents in any other jurisdiction. Similarly, the United States decisions in both Microsoft and Huawei precluded the enforcement of injunctions issued in Germany and China. In all of these cases, the courts of one jurisdiction prevented other countries from implementing their own domestic choices regarding FRAND policy. By contrast, jurisdiction-by-jurisdiction adjudication of these remedies would allow each country the flexibility to determine its own terms of access to standardized technology.

Such territorial flexibility dovetails with the current structure of international intellectual property law. The international Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) requires countries to implement a relatively high common baseline of intellectual property protection. ¹⁹¹ At the same time, individual jurisdictions may adjust that framework to their own domestic preferences and rate of development. ¹⁹² For example, with respect to remedies, while TRIPS

^{189.} See generally Cotter, Comparative Law & Economics, at 322–27 (describing the availability of injunctions in Europe and Asia); Larouche & Zingales, supra note 3, at 419 (noting that "even in an integrated region like the EU" the standards regarding the issuance of injunctions differ across jurisdictions, "resulting in a patchwork of remedies").

^{190.} See, e.g., Robert P. Merges, Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations, 84 CALIF. L. REV. 1293, 1296 (1996) (asserting that injunctions can "drive IPR holders in high transaction industries into repeat-play bargaining" and the establishment of institutional structures to facilitate such bargaining); see generally Mark A. Lemley, Contracting Around Liability Rules, 100 CALIF. L. REV. 463 (2012) (discussing the effects of liability or property rules for intellectual property).

^{191.} Agreement on Trade-Related Aspects of Intellectual Property Rights, Annex 1C, Apr. 15, 1994, 33 I.L.M. 81, https://www.wto.org/english/docs_e/legal_e/27-trips.pdf [https://perma.cc/32ZP-4YDY].

^{192.} See, e.g., Jerome H. Reichmann & Rochelle Cooper Dreyfuss, Harmonization Without Consensus: Critical Reflections on Drafting a Substantive Patent Law Treaty, 57 Duke L.J. 85, 98 (2007) (asserting that flexibility under TRIPS "allow[s] developing countries considerable policy space in which to maximize the benefits and minimize the social costs of adopting the international minimum standards"); see generally Amy Kapczynski, Harmonization and Its Discontents: A Case

requires that national courts have the authority to impose "damages adequate to compensate" for infringement, TRIPS does not define what magnitude of damages would be considered "adequate." Similarly, while TRIPS demands that courts be able to issue injunctions against infringement, the agreement does not dictate the standards under which an injunction should issue. 194 As such, territorial adjudication of FRAND patent remedies is consistent with the freedom and flexibility granted to countries under the TRIPS agreement. Indeed, the freedom of each jurisdiction to set its own national intellectual property policies under TRIPS should be comparatively greater in the FRAND context, where remedies depend not only on patent law, but also on the contractual interpretation of the voluntary FRAND commitment and domestic requirements of competition law. 195

In sum, territorial adjudication of FRAND disputes presents systemic advantages. Territorial adjudication provides legal clarity, facilitates licensing negotiations, promotes international comity, and allows each jurisdiction to resolve the dispute according to its own economic needs and social and political values. ¹⁹⁶ Achieving these systemic advantages, however, risks imposing concrete and immediate costs, both on the individual litigants and on the judicial systems tasked with resolving the disputes. The following section details the costs of territorial adjudication but also argues that such costs are unavoidable. Rather than pretending that such costs can be ducked, standards communities should aim at minimizing such costs through substantive and procedural mechanisms.

Study of TRIPS Implementation in India's Pharmaceutical Sector, 97 CALIF. L. REV. 1571 (2009) (describing how India has adapted TRIPS requirements to its own domestic policy preferences).

^{193.} TRIPS, *supra* note 191, art. 45.1; *see also* John Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH. L.J. 685, 706 (2002) (noting that even as TRIPs harmonizes international patent law, it does not "mandate any particular price for an innovation"); Kapczynksi, *supra* note 192, at 1610.

^{194.} TRIPS, supra note 191, art. 44.1; see generally Kapczynksi, supra note 192, at 1607.

^{195.} TRIPS, *supra* note 191, art. 40.2 (providing that the TRIPS agreement does not "prevent Members from specifying in their legislation licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market"). Individual countries may also see standards-related disputes as implicating issues of national security. *See generally* Eli Greenbaum, *5G, Standard-Setting, and National Security*, HARV. NAT'L SEC. J. (July 3, 2018), http://harvardnsj.org/2018/07/5g-standard-setting-and-national-security/ [https://perma.cc/NG27-LKE8]. Such concerns may potentially have relevance under TRIPS. *See* TRIPS, *supra* note 191, art. 73.

^{196.} The inclusion of a territorial forum-selection clause in a contractual FRAND commitment cannot prevent national competition law agencies from imposing remedies that affect both domestic and foreign patents rights. Nonetheless, the insistence by a standard-setting body on the territorial adjudication of FRAND royalty rates may serve as a cue to regulatory agencies regarding the normative limits of their jurisdiction.

B. The Inevitability of Territorial Adjudication

Courts and commentators have resisted the territorial resolution of FRAND disputes. ¹⁹⁷ Indeed, adjudication on a jurisdiction-by-jurisdiction basis can greatly increase the cost of dispute resolution. Instead of a single proceeding that resolves the global dispute, the parties may be forced to slog through duplicative country-by-country litigation. ¹⁹⁸ For patentees, the weight of the multiple lawsuits necessary to enforce global patent rights could hold down the value of those rights. ¹⁹⁹ For implementers, the heavy expenses associated with defending against worldwide litigation could strain company resources and delay or even preclude entry into important markets. ²⁰⁰ For the public, duplicative lawsuits across jurisdictions strain judicial resources, which could be economized by aggregating related cases in a single jurisdiction. Indeed, this Article does not argue that territorial adjudication of FRAND litigation presents the most efficient means of dispute resolution. ²⁰¹ Rather, this Article

^{197.} For court decisions that have opposed territorial adjudication, see *supra* text accompanying notes 57–75. For commentators that have opposed territorial adjudication, see, for example, Contreras, *supra* note 16, at 709 (noting the costs of "duplicative negotiation and litigation . . . among the same parties litigating in different jurisdictions").

^{198.} Contreras, supra note 16, at 709.

^{199.} The Court of Appeals in Unwired Planet, in justifying a worldwide license, focused on these costs to the patentee. See Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2018] E.W.C.A. (Civ) 2344 p. 88, (Eng.) (Requiring Unwired Planet to bring actions in each jurisdiction worldwide would "be a blue print for hold-out . . . [T]he costs of such litigation for [Unwired Planet] would be prohibitively high. So the outcome would be that ... [Unwired Planet] would not be able to secure payment of royalties for those jurisdictions in which it could not afford to bring proceedings."). It is not clear, however, why the Court of Appeals considered only the patentees' litigation costs but not the converse costs that a worldwide license imposes on the implementer—a worldwide license requires the implementer to commence royalty payments under the worldwide license but challenge the patents on a jurisdiction-by-jurisdiction basis. Moreover, the question of how to deter opportunistic hold-out by implementers is often addressed by individual jurisdictions in deciding whether to impose supracompensatory awards for patent infringement. See generally Colleen V. Chien et al., Enhanced Damages, Litigation Cost Recovery, and Interest, in PATENT REMEDIES AND COMPLEX PRODUCTS: TOWARD A GLOBAL CONSENSUS 158 (forthcoming) (Brad Biddle et al. eds., 2019) (comparing enhanced damages for patent infringement across jurisdictions). The question of whether to impose such supracompensatory damages may be better left to individual jurisdictions to determine based upon their own domestic policy choices.

^{200.} Dreyfuss, *supra* note 15, at 825 ("[R]ights holders can use the necessity of successive actions to their advantage, to wear users down by bringing actions seriatim This is a particular problem for small businesses that lack the legal and technical sophistication . . . and the resources to fight multiple suits").

^{201.} At the same time, this author is skeptical of claims that territorial adjudication will result in a war of attrition as the parties grind their dispute through the courts of each jurisdiction worldwide. A more likely consequence of requiring territorial adjudication is that the parties will litigate a FRAND dispute in major markets, and then by settlement extend analogous royalty rates to other jurisdictions less central to their business. *Cf.* ALI PRINCIPLES, *supra* note 177, § 221, Rep. n.4 (suggesting that

demonstrates the futility of efforts to restrain a tenacious FRAND litigant from pursuing jurisdiction-by-jurisdiction litigation and argues instead for the incorporation of cost saving rules and procedures into the FRAND commitment.

First, the pronouncement by one court that it will impose a global FRAND resolution comes with no guarantee that other courts and government regulatory agencies will not make similar assertions of jurisdiction. As such, no court can provide assurance that its own assumption of jurisdiction will hold down costs by precluding litigation in other forums. Indeed, since FRAND commitments typically do not include a forum-selection clause, the commitment's language provides no reason to prefer one jurisdiction over another. ²⁰² Both the *Microsoft* and *Unwired Planet* courts pointed to the FRAND commitment's global character in order to justify their own authority to resolve the multinational dispute. ²⁰³ Any other court and government agency could make similar claims.

Second, even when courts have asserted jurisdiction to resolve a global dispute, they have themselves acknowledged that the litigants retain rights to pursue related litigation in national courts. For example, implementers have retained the right to challenge patent validity, essentiality, and infringement in other forums.²⁰⁴ The *Unwired Planet* court allowed that, even following the court's global rate determination, Huawei still retained the rights to challenge the validity of each patent in its issuing jurisdiction.²⁰⁵ Indeed, the court expressly allowed that its judicially set global FRAND rates would be adjusted annually based on continuing

[&]quot;multinational litigation often ends when the plaintiff wins an action in the defendant's largest market").

^{202.} See supra text accompanying note 87.

^{203.} Microsoft Corp. v. Motorola, Inc., 696 F.3d 872, 884 (9th Cir. 2012) (stating that "the face of the [FRAND commitment] contract makes clear that it encompasses not just U.S. patents, but all of Motorola's standard-essential patents worldwide"); Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2018] E.W.C.A. (Civ) 2344 p. 80 (Eng.) (holding that Unwired Planet's FRAND commitment is a "single undertaking").

^{204.} See Dinwoodie, supra note 15, at 745–46 (the costs of "satellite" litigation regarding patent validity should be "figured into the calculation of efficiency gains that are claimed for consolidation" of multinational patent disputes in general).

^{205.} Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 p. 567 (Eng.). In *Unwired Planet*, there were ongoing invalidity proceedings in Germany and China, which were not halted by the United Kingdom FRAND decision. *Id.* at 570. Indeed, under regulations of the European Union, the English court did not have jurisdiction to pronounce on the validity of non-English patents. *Id.* at 566–67. *See generally* Trimble, *supra* note 15, at 518 (noting that under European regulations, only "the courts and administrative bodies of the country in which a patent was granted may decide the validity of the patent").

developments in the "patent landscape." ²⁰⁶ In other words, despite Unwired Planet's insistence that imposing worldwide FRAND rates was necessary to avoid country-by-country litigation, the decision itself acknowledged that such drawn-out litigation may nonetheless ensue. ²⁰⁷

The recent FRAND-related case of Apple Inc. v. Qualcomm Inc. 208 demonstrates the similar reluctance of United States courts to prevent foreign courts from adjudicating the validity of foreign patents. In that case, the parties generally disputed whether Qualcomm had satisfied its FRAND commitment. Apple brought contract, patent, and competition law claims against Qualcomm in the United States, as well as the United Kingdom, Japan, China, and Taiwan.²⁰⁹ Apple's foreign claims included challenges to the validity and essentiality of Qualcomm's foreign patents.²¹⁰ In response, among other claims, Qualcomm requested the court to either confirm that Qualcomm satisfied its FRAND commitment, or, alternatively, to set global FRAND rates.²¹¹ Qualcomm then asked the United States district court to enjoin Apple's pursuit of its foreign claims, asserting that all of Apple's foreign claims were related to—and would be resolved by—a United States decision concerning a global FRAND license. The court, however, refused to enjoin the foreign claims, stating that it "cannot adjudicate or enforce the patent law of the U.K., China, Japan or Taiwan."²¹² Altogether, Apple remained free to pursue its foreign patent law claims notwithstanding Qualcomm's claims for the determination of a global FRAND royalty rate.²¹³

Claims regarding the breach of a contractual FRAND commitment often go hand-in-hand with antitrust-related claims. As with patent claims, an implementer that is a dogged litigant may continue to pursue such

211. Id. at *12.

^{206.} Unwired Planet. [2018] E.W.C.A. (Civ) p. 89(iv), [2018] AC p. 89(iv).

^{207.} See also Microsoft., 696 F.3d at 888 (upholding anti-suit injunction since it does not bar pursuit of German patent claims); Huawei Techs. Co. v. Samsung Elecs. Co., No. 3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052, at *40 (N.D. Cal. Apr. 13, 2018) (clarifying that injunction is limited to the enforcement of Chinese injunctions). But see TCL Commc'n Tech. Holdings v. Telefonaktienbolaget LM Ericsson, No. 8:14-cv-00341-JVS-AN, 2015 U.S. Dist. LEXIS 191512, at *19 (C.D. Cal. June 29, 2015) (enjoining all foreign litigation concerning counterpart patents, including regarding validity). The TCL parties, however, consented to the broad scope of the injunction.

^{208.} No. 3:17-cv-00108-GPC-MDD, 2017 U.S. Dist. LEXIS 145835 (S.D. Cal. Sept. 7, 2017).

^{209.} Id. at *13-16 (describing Apple's claims under foreign law in foreign jurisdictions).

^{210.} Id.

^{212.} Id. at *43.

^{213.} See also Conversant Wireless Licensing S.A.R.L v. Huawei Techs. Co. [2018] E.W.H.C. 808 p. 18 (Eng.) (discussing a United Kingdom suit to set global FRAND rates where defendants Huawei and ZTE remained free to challenge the validity of Chinese patents in Chinese courts).

antitrust claims through multiple forums even following a global rate determination. For example, in *Apple Inc. v. Qualcomm*, Apple had also advanced competition-related claims in a number of foreign jurisdictions.²¹⁴ The United States district court also refused to enjoin those claims, reasoning that "even resolution of Qualcomm's global contractual [FRAND] obligations" would not "dispose of Apple's anticompetitive claims abroad."²¹⁵ Moreover, according to the court, "Apple had a legitimate reason" to separately pursue the foreign competition law claims since "antitrust laws differ significantly from jurisdiction to jurisdiction."²¹⁶ Each of the foreign sovereigns also had a separate interest in examining potential anti-competitive effects in their territory. As such, a ruling to enjoin the foreign competition law claims would interfere with comity and "deprive" those countries of their jurisdiction to scrutinize domestic competition law matters.²¹⁷

Persistent patentees can also force jurisdiction-by-jurisdiction litigation. Even if proceedings to set a global FRAND rate continue in one jurisdiction, a patentee that holds foreign counterpart patents will ordinarily still be able to advance infringement claims in those foreign jurisdictions. For example, in both *Microsoft v. Motorola* and *Huawei v. Samsung*, the patentee filed suit in the United States as well as in foreign jurisdictions. In both cases, the foreign case progressed faster than the corresponding United States litigation, with the foreign court issuing an injunction against further infringement in the foreign jurisdiction. Though in both cases the United States court prohibited patentees (Motorola and Huawei, respectively) from enforcing the foreign injunctive relief, the courts otherwise allowed the foreign case to continue in parallel. In other words, both Motorola and Huawei were permitted to

^{214. 2017} U.S. Dist. LEXIS 145835, at *13-16.

^{215.} Id. at *36.

^{216.} Id. at *41-42

^{217.} *Id.* at *56. *Cf.* Vringo, Inc. v. ZTE Corp., No. 14-cv-4988, 2015 U.S. Dist. LEXIS 71919, at *34–36 (S.D.N.Y. June 3, 2015) (stating that contract-related claims regarding the unauthorized disclosure of proposed FRAND rates would not be dispositive of Chinese competition-law claims). *But see* Unwired Planet Int'l Ltd. v. Huawei Tech. Co., [2017] E.W.H.C. 2831 p. 3 (Eng.) (noting a readiness to enjoin Chinese competition law claims related to the UK court's determination for global FRAND rates). However, the Chinese proceedings at issue in *Unwired Planet* were only commenced subsequent to the decision of the UK court. This may have increased the possibility that the latter saw the Chinese proceedings as interfering with its "jurisdiction, judgment and processes." *Id.*

^{218.} See Microsoft v. Motorola, 696 F.3d 872, 879 (9th Cir. 2012) (describing related litigation in Germany by General Instruments Corporation, part of the Motorola Group); Huawei Techs. Co. v. Samsung Elecs. Co., No. 3:16-cv-02787-WHO, 2018 U.S. Dist. LEXIS 63052, at *11–12 (N.D. Cal. Apr. 13, 2018) (describing related litigation in China).

^{219.} Microsoft, 696 F.3d at 879; Huawei, 2018 U.S. Dist. LEXIS 63052, at *12.

continue pursuing foreign infringement claims and related demands for damages (but not injunctions) in the foreign jurisdiction. The Ninth Circuit expressly noted that the injunction against Motorola prohibited enforcement of the foreign injunction, but otherwise left Motorola "free to continue litigating... as to damages or other non-injunctive remedies." Similarly, the *Huawei* court noted that its order only enjoined "Huawei from enforcing the Chinese injunctions" and was limited to that "specific form of relief." In other words, the assertion of one court that it has authority to adjudicate a global FRAND dispute has not stopped patentees from continuing to litigate infringement of the same patents in foreign jurisdictions. ²²²

Moreover, even if a court resolutely brings peace to a global FRAND dispute, a patentee unhappy with the terms of the truce' may nonetheless persevere with related non-FRAND hostilities. Patentees with rich worldwide FRAND portfolios typically also hold patents that are not subject to any such FRAND obligations.²²³ Such non-FRAND patents may cover complementary technologies that, while not essential to implementation of a standard, remain of significant commercial import.²²⁴ FRAND disputes often feature such non-FRAND patents in a supporting role. For example, in *Huawei v. Samsung*, in addition to bringing SEP infringement claims in United States court, Huawei also brought suit in China for the infringement of thirteen SEPs and an additional seven non-SEPs.²²⁵ The *Unwired Planet* case also included infringement claims for

^{220.} Microsoft, 696 F.3d at 889.

^{221.} Huawei, 2018 U.S. Dist. LEXIS 63052, at *40.

^{222.} See also TQ Delta LLC v. ZyXEL Commc'ns Inc., No. 1:13-cv-02013-RGA, 2018 U.S. Dist. LEXIS 98228, at *10 (D. Del. June 12, 2018) (allowing litigation for the infringement of FRAND-committed patents to proceed in parallel in the United States and the United Kingdom).

^{223.} Anne Layne-Farrar, Moving Past The SEP Rand Obsession: Some Thoughts on the Economic Implications of Unilateral Commitments and the Complexities of Patent Licensing, 21 GEO. MASON L. REV. 1093, 1101–02 (2014) ("[T]he typical firm participating in a [standard-setting organization] holds more than just SEPs within its patent portfolio. Some of these non-SEP patents might play a supporting role to SEPs . . . they might cover differentiating technologies that enable their holder to compete more effectively in downstream markets").

²²⁴ Id

^{225.} Jacob Schindler, How Samsung and Huawei have Fared in 42 Chinese Patent Cases Against Each Other So Far, IAM (Feb. 23, 2018), https://www.iam-media.com/frandseps/how-samsung-and-huawei-have-fared-42-chinese-patent-cases-against-each-other-so-far [https://perma.cc/R37G-NBW6]; see also Huawei, 2018 U.S. Dist. LEXIS 63052, at *12 n.7 ("The parties filed a total of 42 infringement actions in China, one corresponding to each patent, both SEP and non-SEP."). The antisuit injunction issued by the United States district court was only in regards to Samsung's SEPs. Id. at *12–13.

a non-SEP.²²⁶ In *TCL*, the patentee Ericsson sued for infringement of SEPs in six foreign jurisdictions, as well as suing for infringement of different, non-essential patents in another United States jurisdiction. The *TCL* court enjoined pursuit of the foreign actions, but allowed Ericsson to continue to pursue the non-SEP litigation, reasoning that the court had "no basis to prevent Ericsson from pursuing infringement claims that will not be resolved by the present FRAND litigation."²²⁷ In other words, non-SEPs are not ordinarily subject to any contractual licensing commitment. While a court may be prepared to consolidate worldwide FRAND litigation in order to bring resolution to the FRAND dispute, there will ordinarily be no contractual predicate for bringing foreign non-SEPs under the court's jurisdiction. As such, even a global FRAND determination may not necessarily bring a cessation of litigation.²²⁸

The ability of determined patentees and implementers to compel jurisdiction-by-jurisdiction litigation, while perhaps undermining the efficient consolidation of FRAND disputes into a single forum, rises from the international system's foundations. In the words of the eminent international jurist Vaughan Lowe, "[t]he legal rules and principles governing jurisdiction have a fundamental importance in international relations, because they are concerned with the allocation between States . . . [of] the competence to secure the differences that make each State a distinct society."229 Each country develops its own patent and competition policy from its understanding of the policies appropriate to its own economic, social, and cultural circumstances. FRAND disputes in particular implicate a broad range of potentially significant economic policy decisions for each sovereign, from the efficient encouragement of domestic innovation, the need for broad access to advanced technology, and the economic struggle between foreign and domestic commercial actors. In this light, it is not surprising that each jurisdiction jealously guards the authority to decide the invalidity and scope of its own domestic patents and the reach of its own competition law. As such, even if one court attempts to impose its own interpretation of FRAND royalties, and

^{226.} Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 p. 2 (Eng.). The licensing agreement determined by the English court in *Unwired Planet* did not include rights to Unwired Planet's non-standard-essential patents. *See* Unwired Planet Int'l Ltd. v. Huawei Techs. Co. [2017] E.W.H.C. 1304 (Eng.).

^{227.} TCL Commc'n, 2015 U.S. Dist. LEXIS 191512, at *15.

^{228.} See also Qualcomm FTC Comments, supra note 172, at 17 (claiming that "the large majority of patents being asserted... are not even claimed to be essential," and parties could "[u]se the leverage gained from actual or threatened non-essential-patent-based injunctions to force a renegotiation of the SEP-only license").

^{229.} Vaughan Lowe, *Jurisdiction*, *in* INTERNATIONAL LAW 335 (Malcolm D. Evans ed., 2d ed. 2006) (emphasis omitted).

even if that monetary decision is respected by other jurisdictions, those other jurisdictions may subsequently demand their own say on related issues of domestic importance.

C. How to Reduce the Costs of Territorial Adjudication

Jurisdiction-by-jurisdiction litigation imposes heavy costs, but the FRAND commitment provides a ready foundation for contractual mechanisms that can ease that burden. Outside of the FRAND context, some commentators have suggested that multinational patent litigation could be simplified through cross-border cooperation and coordination.²³⁰ The non-FRAND context, however, presents non-trivial barriers to the adoption of such processes, since cross-border implementation could require an international agreement or formal treaty.²³¹ In contrast, FRAND disputes march forward under the discipline of the FRAND commitment, and that contractual commitment could also include substantive and procedural frameworks for international cooperation and coordination. Again, such mechanisms would not prevent parties from agreeing on alternative means of dispute resolution. A failure to agree on such alternative arrangements, however, would trigger the default framework of territorial litigation that this Article advocates, accompanied by supporting mechanisms aimed at reducing the costs and expenses of dispute resolution.

On a substantive level, the FRAND commitment could provide that factual determinations made in FRAND litigation by the judicial authorities of one jurisdiction should be presumptively adopted in subsequent litigation, including by foreign tribunals in subsequent proceedings.²³² Such an agreement would allow both United States and

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^{230.} See, e.g., ALI PRINCIPLES, supra note 177, at pt. II Introductory Note (recommending principles for transnational patent adjudication, and noting that the suggested principles "aim to create efficiency through coordinated adjudication"); James Pooley & Vicki Huang, Multi-National Patent Litigation: Management of Discovery and Settlement Issues and the Role of the Judiciary, 22 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 45, 47 (2011) (offering suggestions for improving "the efficient management of multinational patent disputes"); see generally Dreyfuss, supra note 15 (commenting on the ALI Principles).

^{231.} See, e.g., Begley, supra note 15, at 569 (recommending the establishment of a "multinational organization, established by treaty, creating a global patent that is respected in all member states and enforced by an international patent court," but also recognizing the obstacles to creating such a system); Dreyfuss, supra note 15, at 826 (noting the limited advantages of the ALI Principles, since "the drafters do not represent states"); Pooley & Huang, supra note 230, at 56 (describing the constraints of obtaining cross-border discovery under existing international arrangements).

^{232.} See also ALI PRINCIPLES, supra note 177, § 222 Rep. n.1 (proposing that multi-jurisdictional patent litigation may be streamlined by parties agreeing to be "bound by a single court's factual determinations").

foreign courts to rely on the determinations of other decisionmaking bodies, thus reducing the need for extensive discovery and duplicative litigation to repeatedly "prove" the same facts. Such an agreement need not completely prohibit the reexamination of factual determinations in other jurisdictions. Rather, the FRAND commitment could employ a more flexible arrangement—for example, requiring the acceptance of foreign factual findings, except to the extent that those factual findings emerge from factors specific to the foreign legal framework. ²³³

An agreement to employ the fact-finding of foreign tribunals can be enforceable in United States courts. Admittedly, the Federal Circuit has held that foreign *patent* law decisions cannot be used to preclude litigation of the same legal issues in the United States.²³⁴ However, a number of subsequent decisions have limited Federal Circuit's holding and welcomed the admission of foreign factual determinations in certain circumstances.²³⁵ For example, some courts permit the adoption of factual findings made in foreign patent litigation if the parties have agreed to the preclusive effect of such factual determinations.²³⁶ The FRAND commitment could provide firm contractual foundations for such an agreement, and allow United States courts to adopt the factual findings of FRAND royalty determinations made in other jurisdictions.

Even in the absence of an agreement, some United States courts have allowed the importation of foreign determinations so long as the court sifts through the foreign judgments to exclude legal conclusions. For example, in *Vas-Cath, Inc. v. Mahurkar*, ²³⁷ a district court held that it could adopt the factual findings of a Canadian court regarding the validity of a

^{233.} For example, if a court determines that a specific agreement provides a comparable license that can aid in the calculation of patent royalties, subsequent litigation may challenge that factual determination to the extent that the subsequent jurisdiction take a substantially different approach as to what constitutes a "comparable" license.

^{234.} See, e.g., Medtronic Inc. v. Daig Corp., 789 F.2d 903, 907–08 (Fed Cir. 1986), cert. denied 479 U.S. 931 (1986) (rejecting an argument that the court should adopt a German judgment that a German counterpart patent was obvious, stating that "[t]his argument is specious," and "[t]he patent laws of the United States are the laws governing a determination of obviousness/nonobviousness of a United States patent in a federal court"); see also Cuno, Inc. v. Pall Corp., 729 F. Supp. 234, 238–39 (E.D.N.Y. 1989) (listing cases to show that the Federal Circuit has shown a "general antipathy to applying collateral estoppel" in order to adopt the findings of foreign courts).

^{235.} See infra notes 236-239 and accompanying text.

^{236.} Oneac Corp. v. Raychem Corp., 20 F. Supp. 2d 1233, 1243 (N.D. Ill. 1998); see also Merck & Co. v. Teva Pharms. USA, Inc., 288 F. Supp. 2d 601, 611 (D. Del. 2003) (refusing to adopt the findings of a British court concerning "mixed questions of law and fact", and distinguishing *Oneac* since the parties in that case "agreed to be bound by such factual findings").

^{237. 745} F. Supp. 517, 526 (N.D. Ill. 1990), rev'd on other grounds, 935 F.2d 1555 (Fed. Cir. 1991).

Canadian patent, after ensuring that those "findings are free of the influence of legal differences."²³⁸ The court endorsed the efficiency of this approach, asserting that a contrary rule would turn international patent litigation into a "war of attrition, in which after the conclusion of one battle parties move on to another and duplicate the engagement."²³⁹

Even when United States courts have resisted the adoption of foreign patent findings, that has generally meant opposition to the acceptance of determinations related to the validity or infringement of foreign patents.²⁴⁰ Indeed, as discussed above, matters of patent validity are often intertwined tightly with the legal and policy frameworks of individual jurisdictions. FRAND battles, however, see the parties clash over a legion of details in a fundamentally economic analysis of patent value. These details can include, for example, the total economic value that a standard contributes to a product²⁴¹ and the proportional share of that total value attributable to the patents owned by the litigants.²⁴² This latter determination, in particular, can combine the methodical counting of the owned patents with a specialized, technical evaluation of patent strength²⁴³—neither of which are likely to involve findings that are closely related to the legal particular iurisdiction.²⁴⁴ FRAND framework of anv

^{238.} Id.

^{239.} Id. at 525.

^{240.} Medtronic Inc. v. Daig Corp., 789 F.2d 903, 907 (Fed. Cir. 1986) (rejecting the adoption of a German ruling finding a patent obvious); *Merck*, 288 F. Supp. At 611 (denying preclusive effect to the obviousness decision of a U.K. court); Cuno Inc. v. Pall Corp., 729 F. Supp. 234, 234 (E.D.N.Y. 1989) (denying preclusive effect to validity and infringement decisions of a U.K. court).

^{241.} TCL Comme'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No. CV 15-2370 JVS, 2017 U.S. Dist. LEXIS 214003, at *47 (using patentee's public statements and press releases to determine an aggregate royalty burden for use of the standard); Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 p. 264 (Eng.) (same); *cf. In re* Innovatio IP Ventures, LLC. No. 11 C 9308, 2013 U.S. Dist. LEXIS 144061, at *176–77 (N.D. III. Oct. 3, 2013) (determining profit margin on a WiFi chip, in order to determine the aggregate royalty burden for use of the standard).

^{242.} *TCL Commc'n*, 2017 U.S. Dist. LEXIS 214003, at *30–31 (describing methodology for the calculation of FRAND rates); *Innovatio*, 2013 U.S. Dist. LEXIS 144061, at *180–81 (determining strength of applicable standard-essential patents); Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 p. 178 (Eng.) (same).

^{243.} *TCL Commc'n*, 2017 U.S. Dist. LEXIS 214003, at *47 (patent counting in a FRAND royalty analysis); *Innovatio*, 2013 U.S. Dist. LEXIS 144061, at *177 (assessing the number of patents essential to the standard); Microsoft Corp. v. Motorola, Inc., No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at *269 (W.D. Wash. Apr. 25, 2013) (patent counting in order to extract a comparable valuation from a patent pool); Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 p. 198 (Eng.) (counting Unwired Planet's patents to determine its share of a larger patent portfolio); *id.* at 273 (patent counting in a FRAND royalty analysis).

^{244.} But see TCL Commc'n, 2017 U.S. Dist. LEXIS 214003, at *65 (patent counting methodology does not include expired patents, as required by the decision of the United States Supreme Court in

determinations may also involve the "unpacking" of potentially comparable license agreements—the economic analysis of all the varied terms of those licenses to derive a single royalty rate that can be used for comparison purposes. Again, "unpacking" typically involves a technical economic analysis that does not hinge on the underpinnings of any specific legal culture. Adopted factual findings could potentially also include details of the parties' (failed) negotiations towards FRAND rates, the parties are bargained in compliance with the FRAND commitment.

The FRAND commitment could also include procedural mechanisms for easing the burden of jurisdiction-by-jurisdiction litigation. For example, the ALI has proposed that multi-jurisdictional patent litigation could be streamlined by encouraging litigants to coordinate the scope of their dispute and associated discovery across jurisdictions. Such coordination could be effected through global mediation or case management conferences to discuss discovery and possible settlement options on a worldwide basis. Similarly, direct communication between the various national courts handling a global FRAND litigation could assist in identifying means of sharing resources and agreeing on efficient cross-border procedures. In general, outside of the FRAND context, implementing the ALI recommendations could require an international agreement on common procedures for the resolution of transnational

Brulotte v. Thys Co., 379 U.S. 29, 32 (1964)). Courts in other jurisdictions may come to different conclusions regarding counting expired patents.

^{245.} *Id.* at *95 (describing the process of unpacking licenses); *see also* Unwired Planet Int'l Ltd. v. Huawei Tech. Co. [2017] E.W.H.C. 711 pp. 187–90 (Eng.) (same); *Microsoft*, 2013 U.S. Dist. LEXIS 60233, at *246 (providing a monetary value for access to technology provided through the MPEG-LA patent pool).

^{246.} TCL Commc'n, 2017 U.S. Dist. LEXIS 214003, at *9 (reviewing the history of the parties' FRAND negotiation)

^{247.} An agreement to apply prior judicial factual findings would also need to address how that agreement will apply to parties that are affiliated with the original litigants but not actual parties to the first litigation.

^{248.} ALI PRINCIPLES, *supra* note 177, § 222 Rep. note 1 (proposing that "substantial benefits could be achieved if, before any trial commences, the parties agree to take the inventor's testimony a single time, choose to focus their disputes on the same embodiments of the accused device, and stipulate to the documents and practices that constitute the prior art").

^{249.} Pooley & Huang, *supra* note 230, at 64 (proposing cross-jurisdictional procedures for streamlining multinational patent litigation).

^{250.} ALI PRINCIPLES, *supra* note 177, § 222 Rep. note 1 (describing potential "[j]udicial cooperation"); *see also* Pooley & Huang, *supra* note 230, at 66 (recommending formal and informal communication between judges); *Cf.* Jay L. Westbrook, *International Judicial Negotiation*, 38 TEX. INT'L L.J. 567, 580 (2003) (advocating for direct judicial communication to coordinate transnational insolvency proceedings).

patent disputes.²⁵¹ Many of those recommendations, however, could be incorporated into the FRAND contractual commitment, which could provide an agreed procedural framework for the efficient resolution of transnational disputes.²⁵²

To date, the paucity of formal arrangements for coordinating international patent litigation means that courts have little experience with such means of cooperation. Sa Such, it is difficult to predict what mechanisms could provide substantive support for the facilitation of international judicial communication and coordination. At the same time, a FRAND contractual commitment that requires common procedural mechanisms for streamlining global litigation could provide courts with much-needed experience in transnational coordination. As such, the intellectual property policies of standard-setting organizations could provide fertile ground for studying such cross-border mechanisms and eventually expanding such procedures to other areas of intellectual property law.

CONCLUSION

Commentators and regulators have sometimes recommended the inclusion of more substantive rules in the FRAND commitment.²⁵⁴ The intellectual property policies of most standard-setting organizations are light on detailing the meaning of FRAND, and such recommendations aim at providing FRAND requirements with more explanatory heft.²⁵⁵ Such recommendations have included, for example, clearly restricting the right of a FRAND-committed patentee to obtain injunctive relief, as well as rules and procedures to assist in calculating a FRAND royalty rate.²⁵⁶ Indeed, following these calls, the Institute of Electrical and Electronics

^{251.} Dreyfuss, *supra* note 15, at 826 (noting the limited utility of the ALI Principles in the absence of an international agreement).

^{252.} *Id.* (noting that certain of the ALI Principles could "[be] adopted through the consent of the parties").

^{253.} ALI PRINCIPLES, *supra* note 177, § 223 Rep. note (noting that there is "insufficient experience with coordination to build upon" in creating cooperative procedures).

^{254.} See, e.g., Mark A. Lemley, Ten Things To Do About Patent Holdup of Standards (And One Not To), 48 B.C. L. REV. 149, 161 (2007); Kai-Uwe Kühn et al., Standard Setting Organizations Can Help Solve the Standard Essential Patents Licensing Problem, 3 ANTITRUST CHRON. (SPECIAL ISSUE) 1, 4 (2013), https://www.competitionpolicyinternational.com/assets/Free/ScottMortonetalMar-13Special.pdf [https://perma.cc/52HP-DUAS]; Renata Hesse, Deputy Assistant Att'y Gen., Antitrust Div., U.S. Dep't of Justice, SIX "SMALL" PROPOSALS FOR SSOS BEFORE LUNCH 9 (Oct. 10, 2012) https://www.justice.gov/atr/file/518951/download [https://perma.cc/MR4V-2GAV].

^{255.} See, e.g., Kilhn et al., supra note 254, at 4; Hesse, supra note 254, at 9–10.

^{256.} See Kilhn et al., supra note 254, at 4.

Engineers Standards Association ("IEEE-SA") substantially revised its own patent policy to clarify the FRAND obligation.²⁵⁷

This Article has proposed that, in the absence of an agreement to the contrary, FRAND obligations should be interpreted by national courts. In other words, in contrast to some prior suggestions for clarifying the policies of standard-setting organizations, this Article does not offer substantive modifications to FRAND rules but rather proposes including a jurisdictional standard for determining which court should be entrusted with explicating such rules. Nevertheless, the crucial interpretive commentary provided by national courts should not obviate the role of standard-setting organizations. Courts can only provide their reading of the specific language of the FRAND commitment before them.²⁵⁸ In contrast, standard-setting organizations can, at least within the confines of mandatory patent and antitrust law, adapt the language of the FRAND commitment in response to these court decisions and market requirements.²⁵⁹

The approach advocated by this Article should result in a collection of public case law interpreting the parties' rights and obligations under the FRAND commitment in varied legal regimes and circumstances. Indeed, recent court decisions have provided much-needed clarity to certain aspects of FRAND and the rights and remedies of both patentees and implementers. Such decisions should be taken by standard-setting organizations as part of a dialogue—to the extent participants disagree with courts' interpretive conclusions, they can advocate within standard-setting organizations for modifying and clarifying the substance of the organizations' intellectual property policies. The jurisdictional rules proposed by this Article do not foreclose further dialogue about the FRAND commitment's substantive content, but rather invite more parties into the conversation.

[https://perma.cc/U6ZJ-F4WC].

^{257.} IEEE STANDARDS ASS'N, POLICIES AND PROCEDURES § 6, https://standards.ieee.org/about/policies/bylaws/sect6-7.html [https://perma.cc/PUC9-TLQU]. The revisions to the IEEE-SA policy included suggestions for the calculation of FRAND royalties, clarification that FRAND obligations apply to all licensees on the supply chain, and limitations on the pursuit of injunctive relief. *See* Letter from Renata B. Hesse, Acting Assistant Att'y Gen., U.S. Dep't of Justice, Antitrust Div., to Michael A. Lindsay, Esq., Dorsey & Whitney LLP 10 (Feb. 2, 2015), https://www.justice.gov/sites/default/files/atr/legacy/2015/02/02/311470.pdf

^{258.} See, e.g., Ericsson, Inc. v. D-Link Sys., Inc., 773 F.3d 1201, 1231 (Fed. Cir. 2014) (holding that trial courts should consider the actual language of the FRAND commitment at issue in instructing juries).

^{259.} But see A. Douglas Melamed & Carl Shapiro, How Antitrust Law Can Make FRAND Commitments More Effective, 127 YALE L.J. 2110, 2131 (2017) (expressing skepticism that standard-setting organizations "can in general be counted on to adopt effective FRAND policies").