

WHY IS FRAND HARD?

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INTRODUCTION

Standards, common platforms that allow products to work together, are essential to the modern economy. But standards often are based on patented technologies. And in what has been referred to as “patent holdup,”¹ the owners of patents incorporated into standards may exploit that power by refusing to license their patent or charging excessive royalties. For this reason, many standards development organizations (“SDOs”) have required patent holders to commit to license their patents on fair, reasonable, and nondiscriminatory (“FRAND”) terms.²

The FRAND solution sounds promising in theory. But it has proven challenging in practice. Why? In this Essay, I offer eight reasons: (1) excessive attention on patent holdup; (2) unsupported positions on holdup; (3) the role of funding; (4) patent trolls; (5) modest challenges based on clear rules or facts; (6) medium challenges based on unclear rules or facts; (7) significant challenges arising from the meanings of “fair and reasonable” and nondiscriminatory; and (8) extraordinary challenges relating to global issues.

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¹ *E.g.*, U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION 35–36 (2007), <https://www.ftc.gov/sites/default/files/documents/reports/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition-report.s.department-justice-and-federal-trade-commission/p040101promotinginnovationandcompetitionrpt0704.pdf> [<https://perma.cc/NN24-HN95>].

² *Id.* at 36 (referring to reasonable and nondiscriminatory (“RAND”), which has been used interchangeably with FRAND).

I. CHALLENGE 1: EXCESSIVE ATTENTION ON SYSTEMIC HOLDUP

The first FRAND challenge comes from its connection to patent holdup. To put it mildly, this condition is highly contested. In fact, few issues of patent and antitrust law today have witnessed the attention devoted to holdup. As FTC Commissioner Rebecca Kelly Slaughter has explained, issues of intellectual property are “spicy,” but issues of standard essential patents are “ghost pepper spicy.”³ For several reasons, this obsession with holdup does not make sense.

For starters, there have in fact been instances of holdup. Former FTC Commissioner Terrell McSweeney pointed to “ample evidence” of the condition, including FTC enforcement actions, acknowledgment of the problem by panelists at government agency hearings, “strong anecdotal support,” and examples of patentees “demanding far more than that to which they were entitled,” with courts in two cases, for instance, awarding only 1/150 and 1/500 of the royalties sought.⁴

More generally, any lack of holdup might simply reflect the fact that FRAND rules are working like they are supposed to. The fact that SDOs—those with the most knowledge of the issues—have (for decades⁵) adopted FRAND policies itself provides useful information about holdup as a problem.⁶ In addition, “[h]igh-profile enforcement actions against patent holders” have sent “powerful deterrent signals to the market and warn[ed] others not to engage in similar behavior lest they too become the subject of agency enforcement.”⁷

Jorge Contreras has analogized the situation to that of “the often fatal and highly contagious viral infection Ebola,” for which public health officials could “propose the implementation of prophylactic measures to prevent [its] spread.”⁸ Critics “might argue that such measures are unjustified because there is no empirical evidence that Ebola is a problem.”⁹ But of course, this reasoning is “fallacious,” as

³ Rebecca Kelly Slaughter, Comm’r, Fed. Trade Comm’n, Remarks at the ANSI World Standards Week, SEPs, Antitrust, and the FTC (Oct. 29, 2021), https://www.ftc.gov/system/files/documents/public_statements/1598103/commissioner_slaughter_ansi_102921_final_t_o_pdf.pdf [<https://perma.cc/BWF4-H5CM>].

⁴ Terrell McSweeney, Comm’r, Fed. Trade Comm’n, Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters 4 (Mar. 21, 2018), https://www.ftc.gov/system/files/documents/public_statements/1350033/mcsweeney_-_the_reality_of_patent_hold-up_3-21-18.pdf [<https://perma.cc/7RFA-86VD>].

⁵ Jorge L. Contreras, *Much Ado About Hold-Up*, 2019 U. ILL. L. REV. 875, 898 (2019) [hereinafter Contreras, *Much Ado About Hold-Up*].

⁶ As Richard Epstein has recognized, the “[F]RAND formula” is “the best, indeed the only, approach” for “mimic[ing] the performance of competitive markets” while not “undercut[ting] their operation,” which is needed since a “monopolist knows that he can extract at least some concessions from higher demanders precisely because they have nowhere else to go.” Richard A. Epstein, *The History of Public Utility Rate Regulation in the United States Supreme Court: Of Reasonable and Nondiscriminatory Rates*, 38 J. SUP. CT. HIST. 345, 346, 348, 366 (2013).

⁷ Contreras, *Much Ado About Hold-Up*, *supra* note 5, at 899.

⁸ *Id.* at 896–97.

⁹ *Id.* at 897.

“prophylactic measures are often taken *before* a health risk affects a significant portion of the population.”¹⁰

Even more fundamental, plaintiffs bringing FRAND-related claims should not need to demonstrate a systemwide problem. Nowhere else in patent or antitrust law, for example, does a plaintiff need to show an industrywide problem before it can obtain relief. To offer just one example, a plaintiff can successfully litigate an antitrust claim by demonstrating that a brand-name drug company pays a generic firm to delay entering the market without needing to show that this is common in the field.¹¹

In short, based on the existence of patent holdup, its likely reduced presence due to FRAND rules, and the irrelevance of a global determination of holdup, the concept has taken on too much significance in the debate over FRAND. Whether there is a systemwide issue of patent holdup does not matter when the holder of a standard essential patent (“SEP”) violates SDO rules or antitrust law based on a breach of its FRAND promise.¹²

II. CHALLENGE 2: UNSUPPORTED POSITIONS¹³

The second reason for difficulty in interpreting FRAND involves the out-of-the-mainstream positions taken by Makan Delrahim, the head of the U.S. Department of Justice Antitrust Division between 2017 and 2021. Even after leaving office, these positions linger, influencing policy in ways that are unhelpful to effective FRAND determinations.

Delrahim’s absolutist positions were constructed on at least five pillars. First, he emphasized the “core of what it means to hold an IP right—namely, the right to exclude.”¹⁴ He stated that patents are “a form of property, and the right to exclude is one of the most fundamental bargaining rights a property owner possesses.”¹⁵ And he asserted that “[d]epriving a patent holder” of the right to exclude would “skew

¹⁰ *Id.*

¹¹ *FTC v. Actavis, Inc.*, 570 U.S. 136, 159 (2013); see Contreras, *Much Ado About Hold-Up*, *supra* note 5, at 897–98.

¹² See *infra* notes 50–51 and accompanying text.

¹³ The argument in this Part is adapted from Michael A. Carrier, *Why Property Law Does Not Support the Antitrust Abandonment of Standards*, 57 HOUS. L. REV. 265, 285 (2019).

¹⁴ Makan Delrahim, Assistant Att’y Gen., U.S. Dep’t of Just. Antitrust Div., The “New Madison” Approach to Antitrust and Intellectual Property Law, Remarks at the University of Pennsylvania Law School 12 (Mar. 16, 2018) [hereinafter Delrahim, “New Madison”], <https://www.justice.gov/opa/speech/file/1044316/download> [https://perma.cc/W62U-8PXG].

¹⁵ Makan Delrahim, Assistant Att’y Gen., U.S. Dep’t of Just. Antitrust Div., Take It to the Limit: Respecting Innovation Incentives in the Application of Antitrust Law, Remarks at the USC Gould School of Law – Application of Competition Policy to Technology and IP Licensing 12 (Nov. 10, 2017) [hereinafter Delrahim, Take It to the Limit], <https://www.justice.gov/opa/speech/file/1010746/download> [https://perma.cc/A9TN-P59S]; see also 35 U.S.C. § 261 (“[P]atents shall have the attributes of personal property.”).

the bargain away from the free-market incentive scheme that the Constitution and Congress have established.”¹⁶

Delrahim’s second pillar centered on injunctions. He believed that a patentee’s ability to obtain an injunction against infringement “gives it necessary leverage in a free market negotiation.”¹⁷ And he contended that the “right to seek an injunction” is “enshrined in the Constitution as a foundation of free market negotiations for patented inventions.”¹⁸

Third, Delrahim claimed that the notion of patent holdup is overblown. He stated that “in recent years, competition policy has focused too heavily on the so-called unilateral hold-up problem, often ignoring what fuels dynamic innovation and efficiency.”¹⁹ In fact, he lamented that “[e]very incremental shift in bargaining leverage toward implementers of new technologies acting in concert can undermine incentives to innovate.”²⁰

Fourth, Delrahim worried that “[t]oo often lost in the debate over the hold-up problem is recognition of a more serious risk: the hold-out problem.”²¹ He warned that “implementers threaten to under-invest in the implementation of a standard . . . until their royalty demands are met.”²² This problem is “a more serious impediment to innovation” because—in contrast to implementers, some of whose investments “occur after royalty rates for new technology could have been determined”—innovators “make an investment before they know whether that investment will ever pay off.”²³

And fifth, Delrahim disclaimed a role for antitrust. He stated that “patent hold-up is not an antitrust problem”²⁴ and that “a unilateral refusal to license a valid patent should be per se legal.”²⁵ Delrahim contended that a patent holder “cannot violate the antitrust laws by properly exercising the rights patents confer, such as seeking an injunction or refusing to license such a patent.”²⁶ And he asserted that a patentee’s ability to “derive higher licensing fees through hold-up simply reflects basic

¹⁶ Makan Delrahim, Assistant Att’y Gen., U.S. Dep’t of Just. Antitrust Div., Protecting Free-Market Patent Bargaining, Competition, and the Right to Exclude, Remarks at the Federal Circuit Bar Association Global Series 2018 6 (Oct. 10, 2018) [hereinafter Delrahim, Protecting Free-Market], <https://www.justice.gov/opa/speech/file/1100016/download> [https://perma.cc/K77Q-JQCM].

¹⁷ *Id.* at 8.

¹⁸ *Id.* at 9 (emphasis omitted).

¹⁹ Delrahim, Take It to the Limit, *supra* note 15, at 6.

²⁰ *Id.*

²¹ *Id.* at 5.

²² *Id.*

²³ *Id.* Relatedly, Delrahim stated that the conclusion that a SEP owner’s “mere act of seeking an injunction order to prevent infringement raises competition concerns . . . amount[s] to a troubling de facto compulsory licensing scheme.” Delrahim, “New Madison,” *supra* note 14, at 13–14.

²⁴ Delrahim, “New Madison,” *supra* note 14, at 6.

²⁵ Delrahim, Take It to the Limit, *supra* note 15, at 8 (emphasis omitted); *see also* Delrahim, “New Madison,” *supra* note 14, at 15.

²⁶ Delrahim, Take It to the Limit, *supra* note 15, at 8.

commercial reality,” and “[c]ondemning this practice . . . as an antitrust violation, while ignoring equal incentives of implementers to ‘hold out,’ risks creating ‘false positive’ errors of over-enforcement that would discourage valuable innovation.”²⁷

Each of Delrahim’s pillars is hobbled by flaws. First, the right to exclude is not sacrosanct. Property owners do not have absolute rights to exclude. As I have shown elsewhere, at least fifty doctrines limit property owners’ rights.²⁸ Here, let me offer three. Landowners cannot prevent others from entering their land to save lives or property or to avoid some other serious harm.²⁹ Adverse possession divests title from landowners who are absent from the land.³⁰ And pursuant to eminent domain, the government can take property for public use.³¹

Delrahim’s treatment of patents as natural property rights also ignores the uncontroversial utilitarian framework for the patent grant. The U.S. Supreme Court has long made clear the primacy of the utilitarian justification.³² Exclusive rights exist not to bestow on patentees a moral right to a reward but to promote the best interests of society. That is why patents, like other forms of intellectual property, are subject to doctrines (like novelty, nonobviousness, the written-description and enablement disclosure requirements, and a limited twenty-year term³³) that ensure that protections for market competition balance patents’ incentive effects.

A focus on exclusionary natural rights also is inconsistent with Supreme Court rulings. In upholding the U.S. Patent and Trademark Office’s *inter partes* review process for administratively reconsidering patents, the Court made clear that “[p]atents convey only a specific form of property right—a public franchise.”³⁴ In *FTC v. Actavis*, the Court explained that antitrust has a role to play within the scope of the patent, as “it would be incongruous to determine antitrust legality by measuring [a] settlement’s anticompetitive effects solely against patent law policy, rather than by measuring them against procompetitive antitrust policies as well.”³⁵ And in *Lear, Inc. v. Adkins*, the Court held that a licensee could challenge patent validity even after licensing the patent.³⁶

²⁷ Delrahim, “New Madison,” *supra* note 14, at 8.

²⁸ See Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1 (2004).

²⁹ RESTATEMENT (SECOND) OF TORTS § 197(1) (AM. L. INST. 1965).

³⁰ 10 THOMPSON ON REAL PROPERTY § 87.01 (2022).

³¹ *E.g.*, *Kelo v. City of New London*, 545 U.S. 469 (2005).

³² See, *e.g.*, *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966) (“The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring forth new knowledge” and was to be granted only to “inventions and discoveries which furthered human knowledge[.]”).

³³ See 35 U.S.C. § 102 (novelty); *id.* § 103 (nonobviousness); *id.* § 112 (enablement and written description); *id.* § 154 (20-year term).

³⁴ *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1375 (2018); see also *id.* at 1373 (“[T]he decision to grant a patent . . . involv[es] public rights.”).

³⁵ *FTC v. Actavis, Inc.*, 570 U.S. 136, 148 (2013).

³⁶ 395 U.S. 653, 670–71 (1969).

Second, the position that patent infringement automatically leads to an injunction is, for good reason, no longer the law. Early in the twenty-first century, the Supreme Court unequivocally ruled that courts must decide whether to grant injunctions “consistent with traditional principles of equity, in patent disputes no less than in other cases.”³⁷ To similar effect, the patent statute provides that courts “may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.”³⁸ In fact, the Federal Circuit, not historically associated with insufficient protection of patent rights, has made clear that the framework the Supreme Court set forth in *eBay v. MercExchange* “provides ample strength and flexibility for addressing the unique aspects of FRAND committed patents and industry standards in general.”³⁹ Because there could be thousands of patented technologies in a product today, it is not appropriate to uniformly apply standards from the eighteenth century when tangible inventions were the focus and there were so few patents that “if you put technology in a bag and shook it, it would make some noise.”⁴⁰

Third, the holdup problem has been recognized by courts and SDOs themselves as a real problem. As one court stated, patent holdup is not a theoretical concern but instead “is a substantial problem that [F]RAND is designed to prevent.”⁴¹ Similarly, a second court rejected the argument that “hold up does not exist in the real world,” finding that such an argument “does not trump the evidence . . . that hold up took place in this case.”⁴²

In addition, officials in both Republican and Democratic administrations have consistently acknowledged the anticompetitive harms of patent holdup. The unanimously adopted 2007 joint report of the Department of Justice and Federal Trade Commission explained the difference between a patentee’s power *ex ante* (when “multiple technologies may compete to be incorporated into the standard”) and *ex post* (when “the chosen technology may lack effective substitutes precisely because the [SDO] chose it as the standard”).⁴³ This disparity allows a patentee to

³⁷ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 394 (2006).

³⁸ 35 U.S.C. § 283. Compare *id.* with A. Douglas Melamed & Carl Shapiro, *How Antitrust Law Can Make FRAND Commitments More Effective*, 127 YALE L.J. 2110, 2121–22 (2018) (explaining that “the attributes of personal property” mentioned in 35 U.S.C. § 261 “do not include an unqualified right to an injunction”).

³⁹ *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1332 (Fed. Cir. 2014), *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

⁴⁰ Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 585 (1999).

⁴¹ *In re Innovatio IP Ventures, LLC*, No. 11 C 9308, 2013 WL 5593609, at *9 (N.D. Ill. Oct. 3, 2013).

⁴² *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JL R, 2013 WL 5373179, at *7 (W.D. Wash. Sept. 24, 2013); see also *supra* note 4 and accompanying text.

⁴³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 1, at 35–36; see also McSweeney, *supra* note 4, at 1 (“The competitive risks associated with patent holdup have long been an area of bipartisan agreement . . .”).

“extract higher royalties or other licensing terms that reflect the absence of competitive alternatives.”⁴⁴ The FTC also unanimously endorsed a 2011 report that highlighted how “an entire industry” could be “susceptible” to the “particularly acute” concern of holdup, which can result in “higher prices” and “discourage standard setting activities and collaboration, which can delay innovation.”⁴⁵

Fourth, *holdup* presents a more serious antitrust concern than *holdout*. Implementers that suffer holdup because of sunk investments in a technology are vulnerable to paying supra-competitive royalties based on the entire value of the product as opposed to the value of the patented technology.⁴⁶ In contrast, the risks faced by innovators who complain about licensees “holding out” are consistent with the situation facing “anyone . . . that makes a speculative investment, whether in technology, real estate, corporate securities, or any other industry.”⁴⁷

To be sure, coordinated action between licensees could implicate antitrust, but these concerns are not presented in licensing disputes at the core of holdout. Both licensors and licensees can engage in holdout merely by “refus[ing] to perform in good faith or negotiate reasonably.”⁴⁸ In contrast, the holdup problem, and accompanying lock-in binding implementers, exist on only one side of the exchange.⁴⁹

Fifth, patentees who obtain or maintain monopoly power as *a result of* breaching a FRAND commitment present a monopolization case.⁵⁰ In particular,

⁴⁴ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, *supra* note 1, at 36; *see also id.* at 37–38 (quoting a witness who stated that holdup results in “either [not] mak[ing] the standard or . . . acced[ing] to the . . . blackmail”).

⁴⁵ FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 234 (2011), <https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf> [<https://perma.cc/EDL8-ADML>].

⁴⁶ Melamed & Shapiro, *supra* note 38, at 2119.

⁴⁷ *See id.* (“Requiring that buyers guarantee an adequate return to those who make speculative investments would be antithetical to the operation of the market system and would badly distort investment incentives.”).

⁴⁸ TIMOTHY J. MURIS, AM. ENTER. INST., BIPARTISAN PATENT REFORM AND COMPETITION POLICY 9 (2017), <http://www.aei.org/wp-content/uploads/2017/05/Bipartisan-Patent-Reform-and-Competition-Policy.pdf> [<https://perma.cc/3YSZ-SEAK>].

⁴⁹ *See id.* Relatedly, holding patentees to their promise to license on FRAND terms is not equivalent to compulsory licensing, which “occurs when the government forces a patentee to license against its wishes.” Letter from 77 Former Government Enforcement Officials and Professors to Makan Delrahim, Assistant Att’y Gen., at 4 (May 17, 2018) [hereinafter Letter from 77 Former Government Enforcement Officials and Professors], <https://law.rutgers.edu/fmc-05-18-2018.pdf> [<https://perma.cc/Q86E-8U4D>]. Instead, “the holder of a standard essential patent is voluntarily choosing to license on a FRAND basis,” gaining the potential for significantly increased volume, protection from competition, and guaranteed royalties. *Id.*

⁵⁰ *E.g.*, *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 314 (3d Cir. 2007); *Microsoft Mobile Inc. v. Interdigital, Inc.*, No. 15-723-RGA, 2016 WL 1464545, at *2 (D. Del. Apr.

FRAND breaches could satisfy the requirement that a plaintiff demonstrate exclusionary conduct by showing (1) an exclusion of competitors (the exclusion of rival competitive technologies not chosen by the SDO), (2) that results in competitive injury (price increases and innovation harms from the breach), and (3) acquisition or maintenance of monopoly power (obtained through the breach).⁵¹ In addition, antitrust liability would not flow solely from a patentee's exercise of its right to exclude but instead would be on the table because of the *voluntary commitment* to license on FRAND terms.

In short, one challenge to FRAND issues stems from the unsupported positions articulated by Makan Delrahim. As shown in this Part, his positions on the right to exclude, injunctions, holdup, holdout, and antitrust are flawed. But despite the flaws, the continuing presence of these views introduces uncertainty into what should be noncontroversial positions.

III. CHALLENGE 3: INDUSTRY FUNDING⁵²

The third challenge stems from the role of funding. Of course, there is funding on multiple sides of the FRAND debate. But Qualcomm's "extraordinary" funding has included, as Professors Mark Lemley and Tim Simcoe have written, the "creation of entire centers [and] scholarly papers."⁵³ And these papers are cited and promoted regardless of how unpersuasive they are.

13, 2016). Relatedly, seeking an injunction against a licensee willing to pay a FRAND rate—such as where LSI sought an exclusion order in the U.S. International Trade Commission before proposing a FRAND license to Realtek—can constitute monopolization. *Realtek Semiconductor Corp. v. LSI Corp.*, 946 F. Supp. 2d 998, 1007–08 (N.D. Cal. 2013). *But see* *Rambus Inc. v. FTC*, 522 F.3d 456, 467 (D.C. Cir. 2008) (noting that "loss of an opportunity to seek favorable licensing terms is not as such an antitrust harm").

⁵¹ *E.g.*, *Microsoft*, 2016 WL 1464545, at *2 (citing *Broadcom*, 501 F.3d at 314–15).

⁵² The argument in this Part is adapted from Michael A. Carrier, *Rescuing Antitrust's Role in Patent Holdup*, 168 U. PA. L. REV. ONLINE 238 (2021).

⁵³ Mark A. Lemley & Timothy Simcoe, *How Essential Are Standard-Essential Patents?*, 104 CORNELL L. REV. 607, 614 n.28 (2019). Lemley and Simcoe cite a variety of sources that revealed Qualcomm's funding. *Id.* For other examples, see Justus Baron, *Counting Standard Contributions to Measure the Value of Patent Portfolios – A Tale of Apples and Oranges*, 44 TELECOMM. POL'Y 101870, at 1 n.1 (2020) (acknowledging that Qualcomm offers significant financial support to the Searle Center); Alexander Galetovic & Stephen H. Haber, *The Fallacies of Patent Holdup Theory*, 13 J. COMPETITION L. & ECON. 1, 1 (2017) (indicating that Qualcomm is a "major donor" to Hoover IP²); Alexander Galetovic & Stephen H. Haber, *SEP Royalties: What Theory of Value and Distribution Should Courts Apply?*, 17 OHIO STATE TECH. L.J. 189, 189 n.1 (indicating that Qualcomm is a "major donor" to Hoover IP²); Alexander Galetovic, Stephen Haber, & Lew Zaretski, *An Estimate of the Average Cumulative Royalty Yield in the World Mobile Phone Industry: Theory, Measurement and Results*, 42 TELECOMM. POL'Y 263, 263 n.1 (2018) (indicating financial support from Qualcomm); Anne Layne-Farrar, *Innovative or Indefensible? An Empirical Assessment of Patenting Within Standard Setting*, 9 INT'L J. IT STANDARDS &

For example, one Qualcomm-funded paper compared prices in SEP-reliant industries with those in non-SEP-reliant industries.⁵⁴ The authors state that the “prices of SEP-reliant products have fallen at rates that are fast . . . compared with patent-intensive, non-SEP-reliant products” and conclude that they “cannot reject the hypothesis of no SEP holdup.”⁵⁵ But just to level the most obvious critique, this does not provide any consideration of the “but-for” world. In other words, even if prices have fallen, the question is whether they would have fallen even more if not for holdup.⁵⁶ Carl Shapiro and Mark Lemley offer a helpful analogy, explaining that “[t]he quality-adjusted prices of pharmaceuticals have risen much faster than automobiles over the same period of time, but that . . . is not proof that pharmaceuticals are subject to a patent holdup problem.”⁵⁷ The concern here is that industry-supported papers that are not strong on the economics or law are still used to support questionable positions.

I received a first-hand example of this in 2018. In response to Delrahim’s speeches, I, along with former FTC Chairman Tim Muris, sent a letter on behalf of 77 former government officials and academics. The letter offered eight critiques of the positions Delrahim had articulated. The critiques were based on:

- (1) The bipartisan recognition of the anticompetitive harms of patent holdup;
- (2) Courts’ and SDOs’ recognition of the holdup problem;
- (3) The more serious antitrust concern presented by patent holdup than holdout;
- (4) The existence of an antitrust case from a FRAND breach resulting in patentees obtaining or maintaining monopoly power;
- (5) Patents’ inability to provide an unqualified right to exclude;
- (6) Caselaw precluding an automatic injunction in cases of patent infringement;
- (7) The utilitarian—as opposed to natural-rights—justification for patents; and
- (8) The inapplicability of compulsory licensing to FRAND issues.⁵⁸

STANDARDIZATION RSCH., July–Dec. 2011, at 15 (same); Anne Layne-Farrar, Gerard Llobet, & Jorge Padilla, *Payments and Participation: The Incentives to Join Cooperative Standard Setting Efforts*, 23 J. ECON. & MGMT. STRATEGY 24, 24 (2014) (same); Anne Layne-Farrar, Gerard Llobet & Jorge Padilla, *The Dynamic Innovation Implications of Licensing Patents Under an Incremental Value Rule*, in COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION 443 (Geoffrey A. Manne & Joshua D. Wright eds., 2011) (same); Pierre Larouche & Florian Schuett, *Repeated Interaction in Standard Setting*, 28 J. ECON. & MGMT. STRATEGY 488, 488 (2018) (same); Gerard Llobet & Jorge Padilla, *The Optimal Scope of the Royalty Base in Patent Licensing*, 59 J. L. & ECON. 45, 45 (2016) (same).

⁵⁴ Alexander Galetovic, Stephen Haber & Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. COMPETITION L. & ECON. 549, 551–54 (2015).

⁵⁵ *Id.* at 572.

⁵⁶ Carl Shapiro & Mark A. Lemley, *The Role of Antitrust in Preventing Patent Holdup*, 168 U. PA. L. REV. 2040–41 (2020).

⁵⁷ *Id.*

⁵⁸ Letter from 77 Former Government Enforcement Officials and Professors, *supra* note 49, at 1–4.

Delrahim responded the next day.⁵⁹ But he did not address the critiques. In fact, he did not answer even one. He stated only that he “also received a letter from a number of antitrust and intellectual property scholars, including federal judges, in support of the United States’ policies.”⁶⁰ And he attached the letter, which did not respond to any of the critiques. That response, of course, does not answer the question. The fact that others agree with one’s position does not substantively engage the debate.

This is a concerning development. Robust debate would require an engagement on the substance of critiques. The existence of industry funding does not provide a response when substantive arguments go unaddressed. But it does muddy the waters on issues related to FRAND.

IV. CHALLENGE 4: PATENT TROLLS⁶¹

Patent trolls provide the fourth FRAND challenge. The most glaring recent example was provided by the Avanci patent pool, which licensed 5G cellular wireless patents to automobile manufacturers. In July 2020, Delrahim issued a business review letter supporting the pool.

Over a period of 25 years, the Antitrust Division had supported patent pools, highlighting their procompetitive justifications. The Avanci pool, however, was different, presenting more significant anticompetitive effects. The Delrahim letter did not appreciate that. For starters, it did not consider how the Avanci pool’s refusals to license patented technologies to anyone other than automobile manufacturers violated pool members’ commitments to license on FRAND terms.⁶² As the letter failed to recognize, refusals to license violate the “FRAND obligation to license to all qualified users on nondiscriminatory terms,” with such refusals

⁵⁹ It perhaps bears some relevance that before heading the Antitrust Division, Delrahim was a registered lobbyist for SEP owner Qualcomm on issues relating to “intellectual property and competition policy.” Lobbying Report of Brownstein Hyatt Farber Schreck, LLP (2016), <https://lobbyingdisclosure.house.gov/> [<https://perma.cc/NG6Z-PFUM>] (click on “Lobbying Disclosure/Contributions Search” in left sidebar (in Public Disclosure Search box), then run search based on Delrahim as “lobbyist’s last name” and Qualcomm as “Client Name”).

⁶⁰ Letter from Makan Delrahim, Assistant Att’y Gen., to Michael A. Carrier & Timothy J. Muris (May 18, 2018), <https://src.bna.com/yY1> [<https://perma.cc/9EZW-HNWX>].

⁶¹ Parts of this Part are adapted from Letter from Alex H. Moss & Michael A. Carrier on Behalf of 28 Former Government Enforcement Officials, Professors, and Public Interest Advocates to Assistant Att’y Gen. Jonathan Kanter (Oct. 17, 2022) [hereinafter Moss & Carrier Letter], https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4250512 [<https://perma.cc/B8PW-ZDGD>].

⁶² Letter from Makan Delrahim, Ass’t Att’y Gen., Dep’t of Just. Antitrust Division, to Mark H. Hamer, Baker & McKenzie 21 (July 28, 2020) [hereinafter Delrahim Letter to Hamer], <https://www.justice.gov/atr/page/file/1298626/download> [<https://perma.cc/8YR7-46JF>].

leading to “reduced competition in the downstream market for devices or processes that employ the patent at issue.”⁶³

The letter also blessed the pool’s reimbursement of litigation costs even though it conceded that this could “incentivize more licensors to sue” and that they could “assert their essential patents when they otherwise would not have done so (perhaps due to the questionable strength of their declared SEPs).”⁶⁴ The letter additionally recognized that “non-infringing manufacturers” could be forced to “settle and take a . . . license.”⁶⁵ This is exactly what has happened.

Although the letter concerned a pool of patents deemed essential to the 5G standard, Avanci currently administers a “similar” pool involving SEPs for earlier standards (2G, 3G, and 4G).⁶⁶ And pursuant to this pool, multiple Avanci members have sued automobile manufacturers like Daimler, Tesla, and Ford, which frequently has resulted in settlements.⁶⁷

Nor, like the letter suggested, does the litigation often promote the removal of invalid patents from the pool.⁶⁸ For example, a court banned Ford from selling standard-compliant cars in Germany; days later, Avanci announced that Ford had taken a license.⁶⁹ The issuance of injunctions before courts can make validity determinations forces companies to take their products off the market—and risk going out of business—long before any invalidity (or infringement) determinations are made.

This use of injunctions is even more concerning given the identity of who is filing the lawsuits: a collection of patent assertion entities⁷⁰ (“PAEs”), including

⁶³ Herbert Hovenkamp, *FRAND and Antitrust*, 105 CORNELL L. REV. 1683, 1694 (2020).

⁶⁴ Delrahim Letter to Hamer, *supra* note 62, at 11.

⁶⁵ *Id.* at 12.

⁶⁶ *Id.* at 3.

⁶⁷ Moss & Carrier Letter, *supra* note 61.

⁶⁸ Delrahim Letter to Hamer, *supra* note 62, at 11.

⁶⁹ Amy Sandys, *Ford Takes Avanci Licence in Wake of Munich Judgment*, JUVE PATENT (May 31, 2022), <https://www.juve-patent.com/news-and-stories/people-and-business/ford-takes-avanci-licence-in-wake-of-munich-judgment/> [<https://perma.cc/3L49-WUJ9>].

⁷⁰ Patent assertion entities are “businesses that acquire patents from third parties and seek to generate revenue by asserting them against alleged infringers.” See FTC, PATENT ASSERTION ENTITY ACTIVITY: AN FTC STUDY 1 (Oct. 2016), https://www.ftc.gov/system/files/documents/reports/patent-assertion-entity-activity-ftc-study/p131203_patent_assertion_entity_activity_an_ftc_study_0.pdf [<https://perma.cc/6FD2-ZD8L>]. A related, somewhat broader, category is “non-practicing entities” (“NPEs”), which “do not make and sell products or services that embody their patented technologies.” John R. Allison, Mark A. Lemley, & David L. Schwartz, *How Often Do Non-Practicing Entities Win Patent Suits?*, 32 BERKELEY TECH. L.J. 235, 237 (2017). For a discussion of the role that NPEs have played in filing SEP lawsuits in the United States and Europe, see Jorge L. Contreras, *Assertion of Standards-Essential Patents by Non-Practicing Entities*, in D. DANIEL SOKOL, PATENT ASSERTION ENTITIES AND COMPETITION (2016); Jorge L. Contreras, Fabian Gaessler,

many notorious “patent trolls.”⁷¹ At least some of the licensors bringing these suits have that reputation and *even admit to doing as much*. For example, the CEO of Conversant, in relation to a different pool, boasted that “[t]he fact that we could sue and could push people into a pool license is hugely beneficial”⁷² The list of PAEs and patent trolls suing car manufacturers⁷³ reads like a who’s-who of entities that have employed the criticized business model:

- “Nokia-fed Avanci-aligned patent troll” Conversant⁷⁴;
- IP Bridge, formed “to use government funding and patent law as a weapon . . . to protect domestic industry”⁷⁵ by “buy[ing] up dormant patents from Japanese companies and licens[ing] them”⁷⁶;

Christian Helmers & Brian J. Love, *Litigation of Standards-Essential Patents in Europe: A Comparative Analysis*, 32 BERKELEY TECH. L.J. 1457 (2017).

⁷¹ Patent trolls are “those entities that bully the market by asserting, or threatening to assert, invalid or bogus patent portfolios to industry players that do not have the resources to defend themselves or for which it does not make economic sense to fight back in court.” *The Blog for Sisvel Licensing Programs: VP9-AV1 Q&A*, SISVEL (July 11, 2019), <https://www.sisvel.com/blog/audio-video-coding-decoding/vp9-av1-q-a> [<https://perma.cc/ZEZ5-J5DX>].

⁷² See Richard Lloyd, *Spate of Patent Litigation Dismissals Involving Tesla Points to Possible Avanci Deal*, INTELL. ASSET MGMT. (Mar. 17, 2021), <https://www.iam-media.com/article/spate-of-litigation-dismissals-tesla-points-possible-avanci-deal-pioneering-oem> [<https://perma.cc/693F-MBK4>].

⁷³ Florian Mueller, *Optis/Unwired Planet Group Sues Ford Motor Company over Five 4G Standard-Essential Patents in Eastern District of Texas: Sixth Avanci Licensor to Go After Ford*, FOSS PATENTS (May 5, 2022), <http://www.fo SSPatents.com/2022/05/optisunwired-planet-group-sues-ford.html> [<https://perma.cc/5MYN-ZNNH>] (discussing lawsuits brought by Optis/Unwired Planet, MiiCs, Sisvel, IP Bridge, Sol IP, and L2); Florian Mueller, *Avanci Conflict with Tesla Escalates as Nokia-Fed Patent Troll Conversant Sues Tesla in Texas and Germany*, FOSS PATENTS (Apr. 29, 2020), <http://www.fo SSPatents.com/2020/04/avanci-conflict-with-tesla-escalates-as.html> [<https://perma.cc/C7DM-3J68>]; Mathieu Klos, *Nokia and Daimler Settle All Global Litigation in Connected Cars Dispute*, JUVÉ PATENT (June 1, 2021), <https://www.juve-patent.com/news-and-stories/cases/nokia-and-daimler-settle-all-global-litigation-in-connected-cars-dispute/> [<https://perma.cc/M9YW-KYXA>].

⁷⁴ Florian Mueller, *Nokia-Fed Avanci-Aligned Patent Troll Conversant Asserting Two Patents Against Tesla in Mannheim: Same Patents in Use Against Daimler in Munich*, FOSS PATENTS (June 2, 2020), <http://www.fo SSPatents.com/2020/06/nokia-fed-avanci-aligned-patent-troll.html> [<https://perma.cc/Z92Q-EJSV>].

⁷⁵ Josh Landau, *IPR Successes: A Bridge to Sovereign Patent Funds*, PATENT PROGRESS (Oct. 9, 2017), <https://www.patentprogress.org/2017/10/09/ipr-successes-bridge-sovereign-patent-funds/> [<https://perma.cc/P4X8-LX8R>].

⁷⁶ Bing Zhao, *Five Years After Its Founding, IP Bridge Reflects Japan’s Changing Approach to Patents*, IAM MEDIA (July 22, 2018), <https://www.iam-media.com/article/five-years-after-its-founding-ip-bridge-reflects-japans-changing-approach-patents> [<https://perma.cc/5EAG-2TTD>].

- L2, a subsidiary of Longhorn IP, a “privately owned IP management and patent portfolio licensing company”⁷⁷;
- “IP monetization & technology investment firm” MiiCs⁷⁸;
- Nokia, “still feeding off . . . a catalog of thousands of wireless communications patents” retained “after [its] mobile-phone business suffered a fatal blow” a decade earlier⁷⁹;
- “Patent troll Optis,” which played a role in “massively increas[ing] license fees for standards-essential patents”⁸⁰;
- “Europe’s most notorious patent troll” Sisvel⁸¹;
- Korea’s Sol IP, “an intellectual property licensing company”⁸²; and
- Unwired Planet, which “focused exclusively on . . . licensing and . . . enforcement” of “its patent portfolio.”⁸³

The success that Avanci’s members have had in coercing vehicle manufacturers to enter into pool licenses is striking because it represents a deviation from standard industry practice. As Delrahim’s letter recognized, “suppliers in the automotive industry typically take a license to any intellectual property necessary to produce a particular component,” and Avanci’s approach is “different” because it requires vehicle manufacturers to take licenses instead of their suppliers.⁸⁴ The letter theorized that independent licenses might mitigate any harm caused by Avanci’s approach, but members of Avanci’s existing pool have refused to grant such licenses even when requested.⁸⁵

⁷⁷ LONGHORNIP, <https://www.longhornip.com/> [<https://perma.cc/NY4B-YFMB>] (last visited Jan. 29, 2023).

⁷⁸ *Monetizing Innovation*, MiiCs & PARTNERS, <https://www.miicspartners.com/> [<https://perma.cc/494M-H97W>] (last visited Feb. 2, 2023).

⁷⁹ Karin Matussek & Susan Decker, *Once a Handset Superpower, Nokia Still Commands a Potent Weapon*, BLOOMBERG (Sept. 10, 2020, 10:00 PM), <https://news.bloomberglaw.com/antitrust/once-a-handset-superpower-nokia-still-command-s-a-potent-weapon> [<https://perma.cc/UUG2-ZFGF>].

⁸⁰ Ben Lovejoy, *Apple Wins Partial Victory over Patent Troll Optis, but Billions Still at Stake*, 9TO5MAC (Aug. 16, 2021, 4:14 AM), <https://9to5mac.com/2021/08/16/apple-wins-partial-victory-over-patent-troll-optis-but-billions-still-at-stake/> [<https://perma.cc/G4FE-L5N8>].

⁸¹ *Sisvel Brings Patent Wild West into Germany*, INTELL. PROP. EXPERT GRP., <https://www.ipeg.com/sisvel-brings-patent-wild-west-into-germany/> [<https://perma.cc/UJ6R-WCBV>] (last visited Feb. 2, 2023).

⁸² Complaint at 3, Sol IP, LLC v. AT&T Mobility, Inc., No. 2:18-cv-00526 (E.D. Tex., Dec. 3, 2018).

⁸³ Eric Savitz, *A Patent Troll Is Born: Openwave Becomes Unwired Planet*, FORBES (May 1, 2012, 10:26 AM), <https://www.forbes.com/sites/ericsavitz/2012/05/01/a-patent-troll-is-born-openwave-becomes-unwired-planet/?sh=5f8df07710a0> [<https://perma.cc/QDB5-FKKS>].

⁸⁴ Delrahim Letter to Hamer, *supra* note 62, at 21.

⁸⁵ See Complaint at 42–43, Cont’l Auto. Sys., Inc. v. Avanci, LLC, No. 19-cv-2520 (N.D. Tex. May 10, 2019).

Patent pools have long been recognized as offering procompetitive justifications. But those benefits are undermined in the Avanci pool by a mix of litigation-cost reimbursement, patent trolls, and inclusion in the pool of invalid patents.⁸⁶ This combination threatens to export patent holdup to a different setting, one where FRAND does not offer protection.

V. CHALLENGE 5: MODEST FRAND CHALLENGE

The final four issues offer increasingly difficult challenges, which I call modest, medium, significant, and extraordinary.⁸⁷

The first level involves a modest challenge. It presents a relatively low level of difficulty because there is clarity. In some settings, this clarity stems from SDO rules. For the past several years, for example, the Institute of Electrical and Electronics Engineers (“IEEE”), which issues computer networking standards, has offered clear policies. The most lucid, in effect from 2015 to 2022,⁸⁸ provided that a SEP holder “shall neither seek nor seek to enforce a Prohibitive Order based on . . . Essential Patent Claim(s) . . . unless the implementer fails to participate in, or to comply with the outcome of, an adjudication, including an affirming first-level appellate review.”⁸⁹

⁸⁶ The Antitrust Division has signed off on pools like the MPEG-2 pool, where it “presume[d] from the information . . . provided . . . that the Portfolio patents are valid.” Letter from Joel I. Klein, Acting Assistant Att’y Gen., Dep’t of Just.: Antitrust Div., to Gerrard R. Beeney (June 26, 1997), <https://www.justice.gov/atr/response-trustees-columbia-university-fujitsu-limited-general-instrument-corp-lucent> [<https://perma.cc/RE69-ERBX>] (noting that Division would have engaged in a “very different” analysis if the pool had included invalid patents); *see also* Letter from Joel I. Klein, Acting Assistant Att’y Gen., Dep’t of Just.: Antitrust Div., to Gerrard R. Beeney (Dec. 16, 1998), <https://www.justice.gov/atr/response-koninklijke-philips-electronics-nvs-sony-corporation-japans-and-pioneer-electronic> [<https://perma.cc/QJC3-GBBY>] (“None of the information . . . provided . . . warrants abandonment of the presumption of validity as to any of the patents to be licensed”); Letter from Joel I. Klein, Assistant Att’y Gen., Dep’t of Just.: Antitrust Div., to Carey R. Ramos (June 10, 1999), <https://www.justice.gov/atr/response-hitachi-ltds-matsushita-electric-industrial-co-ltds-mitsubishi-electric-corporations> [<https://perma.cc/5DHZ-L9D2>] (noting that the pool is “unlikely to foist invalid patents upon users”). In contrast, the Avanci pool includes invalid patents. *See* Delrahim Letter to Hamer, *supra* note 62, at 11 (discussing inclusion of “invalid or non-essential patents” in the pool).

⁸⁷ Any given case could involve multiple levels of challenges. For example, as discussed in this Part, the issue of injunctive relief could be modest, but as discussed in Part VII below, subsequent determinations in the case of a FRAND royalty could be significant.

⁸⁸ *See* Press Release, IEEE SA, IEEE Announces Decision on Its Standards-related Patent Policy (Sept. 30, 2022), <https://standards.ieee.org/news/archive-2022/ieee-announces-decision-on-its-standards-related-patent-policy/> [<https://perma.cc/E6AE-XTWY>].

⁸⁹ IEEE, IEEE-SA STANDARDS BOARD BYLAWS § 6.2 (Aug. 2020) [hereinafter 2020 IEEE-SA STANDARDS BOARD BYLAWS], <https://standards.ieee.org/wp-content/uploads/im>

IEEE's clarity on injunctions was matched by predictability on the level at which licensing was required. Beginning in 2015 (and not changed by revisions announced in 2022), SEP holders must make licenses available to the manufacturers of "[a]ny product (e.g., component, sub-assembly, or end product) or service that conforms to any mandatory or optional portion of a normative clause of an IEEE standard."⁹⁰ The reference to components and sub-assemblies makes clear that SEP holders must provide licenses to all levels of the supply chain.⁹¹

On the licensing issue, other SDOs, like the Telecommunications Industry Association, require SEP holders to make licenses available to "all applicants" on "terms and conditions that are reasonable and non-discriminatory."⁹² And the Alliance for Telecommunications Industry Solutions policy provides that a SEP holder must grant a license to any applicant "under reasonable terms and conditions that are demonstrably free of any unfair discrimination."⁹³ Relying on this language, the SDO's guidelines, the policies' purposes, Qualcomm's practices, and the nature of SEPs, the U.S. District Court for the Northern District of California concluded that this language required Qualcomm to offer licenses to participants at all levels of the supply chain.⁹⁴

Clarity could come from not only SDO rules but also the facts of the case. A central issue in many cases is whether a licensee is willing or unwilling. While this will often be subject to debate, the answer in some cases will be straightforward.

Where it is clear that there is an unwilling licensee, the patent holder is able to obtain an injunction. For example, in a case litigated in Texas, the court found that

port/develop/policies/bylaws/sb_bylaws.pdf [https://perma.cc/3XH5-WUG7]. In September 2022, the IEEE Standards Association Board of Governors announced changes to this language that made it easier to obtain injunctions by lowering the standard for showing that a licensee is unwilling from a failure to participate in or comply with an adjudication outcome to the easier-to-satisfy demonstration of "willing[ness] to negotiate in good faith." IEEE, IEEE SA STANDARDS BOARD BYLAWS § 6.2 (Sept. 2022), [hereinafter 2022 IEEE SA STANDARDS BOARD BYLAWS], <https://standards.ieee.org/wp-content/uploads/import/governance/bog/resolutions/september2022-updates-sasb-bylaws.pdf> [https://perma.cc/28V8-M6FP].

⁹⁰ 2020 IEEE-SA STANDARDS BOARD BYLAWS § 6.1; 2022 IEEE SA STANDARDS BOARD BYLAWS § 6.1.

⁹¹ Jorge L. Contreras, *Sometimes FRAND Does Mean License-to-All* (Intellectual Asset Mgmt., U. of Utah Coll. of L., Rsch. Paper No. 457, 2021), at 3, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3889813 [https://perma.cc/28V8-M6FP].

⁹² *FTC v. Qualcomm Inc.*, No. 17-CV-00220-LHK, 2018 WL 5848999, at *3 (N.D. Cal. Nov. 6, 2018), *vacated on other grounds*, 969 F.3d 974 (9th Cir. 2020) (citations omitted). The "all applicants" language traces its roots back to the 1940s. *See* Jorge L. Contreras, *A Brief History of FRAND: Analyzing Current Debates in Standard Setting and Antitrust Through a Historical Lens*, 80 ANTITRUST L.J. 39, 74 (2015) (reviewing "historical patent licensing decrees issued from the 1940s through 1970s" and concluding that "all applicants" referred to "every person or firm that requested such a license").

⁹³ *Qualcomm*, 2018 WL 5848999, at *9 (citations omitted).

⁹⁴ *Id.* at *10–15.

Intel was not a willing licensee.⁹⁵ Ericsson offered a license to Intel before trial on the same terms as offers to other licensees, but Intel “never meaningfully engaged in licensing talks.”⁹⁶ A second example occurred in Wisconsin, where the court found that Apple was not a willing licensee because it “was seeking only a ceiling on the potential license rate that it could use for negotiating purposes,” with the company agreeing to pay a FRAND rate “only if it was the rate [it] wanted.”⁹⁷ In these cases, clarity on the facts reveals an unwilling licensee.

On the other side, licensee willingness may be apparent. In *Realtek v. LSI*, even though Realtek stated that “it would accept a [F]RAND license,” LSI “did not offer a license, but rather asked Realtek to immediately cease and desist from the allegedly infringing activities.”⁹⁸ Without “even waiting for a response,” LSI sought an exclusion order from the ITC “less than a week later.”⁹⁹ The European Commission confronted a similar situation based on Motorola’s “abusive” conduct in “seek[ing] and enforce[ing] an injunction against Apple in Germany on the basis of an SEP which it had committed to license on FRAND terms” where “Apple had agreed to take a licence and be bound by a determination of the FRAND royalties by the relevant German court.”¹⁰⁰

In cases where the SDO rules or licensee willingness or unwillingness are clear, the challenges presented by FRAND are modest in nature.

VI. CHALLENGE 6: MEDIUM FRAND CHALLENGE

The next level of challenge lacks the clarity of the previous Part. When such clarity is missing,¹⁰¹ one solution is to look to the SDO’s history. For example, a review of the history of the FRAND policy of the European Telecommunications

⁹⁵ *Ericsson Inc. v. D-Link Sys., Inc.*, No. 6:10-CV-473, 2013 WL 4046225, at *16 (E.D. Tex. Aug. 6, 2013), *aff’d in part, vacated in part, rev’d in part*, 773 F.3d 1201 (Fed. Cir. 2014).

⁹⁶ *Id.*

⁹⁷ *Apple Inc. v. Motorola Mobility, Inc.*, No. 11-CV-178-BBC, 2012 WL 7989412, at *3 (W.D. Wis. Nov. 8, 2012).

⁹⁸ *Realtek Semiconductor Corp. v. LSI Corp.*, 946 F. Supp. 2d 998, 1007–09 (N.D. Cal. 2013).

⁹⁹ *Id.* at 1008.

¹⁰⁰ European Commission Press Release IP/14/489, Antitrust: Commission Finds that Motorola Mobility Infringed EU Competition Rules by Misusing Standard Essential Patents (Apr. 29, 2014), http://europa.eu/rapid/press-release_IP-14-489_en.htm [<https://perma.cc/BP69-YJ7D>].

¹⁰¹ For example, commentators have explained that the policies of SDOs like the International Telecommunication Union and the European Telecommunications Standards Institute “leave room for interpretation” on the question of the appropriate licensing level. ‘SEPs EXPERT GROUP’ (E03600), GROUP OF EXPERTS ON LICENSING AND VALUATION OF STANDARD ESSENTIAL PATENTS, CONTRIBUTION TO THE DEBATE ON SEPs 75 (Jan. 2021) [hereinafter GROUP OF EXPERTS ON LICENSING AND VALUATION OF STANDARD ESSENTIAL PATENTS], <https://ec.europa.eu/docsroom/documents/45217> [<https://perma.cc/9UWU-FG3K>].

Standards Institute (“ETSI”) uncovered evidence that standard essential patents were not meant to be “a passport to windfall profits,” that there was a concern of cumulative royalties, and that no material discrimination between licensees was anticipated.¹⁰² That history provides useful guidance in interpreting SDO rules.

Guidance also could be provided by the characteristics of the relevant industry. This could assist, for example, in ascertaining whether the end product or component provides the appropriate licensing level.

Some have argued that the end-product level makes sense in the setting of smartphones. Damien Gerardin and Dimitrios Katsifis have written that because “connectivity has always been core to the functionality of mobile devices,” smartphone manufacturers “have knowledge” about cellular technologies and have been able to “negotiate with SEP holders on an equal footing.”¹⁰³ In contrast, in sectors where connectivity has not “been core to the end-product’s functionality” (like “home appliances, medical devices, [and] passenger vehicles”), the default is more likely to be “upstream licensing, namely licensing at the level of the value chain where the relevant patents are first implemented.”¹⁰⁴

The authors explain how automobile manufacturers “may assemble as many as 30,000 components sourced from various suppliers.”¹⁰⁵ As a result, OEMs “traditionally relied on a system where their suppliers must procure parts that are free of third-party rights, combined with a system of indemnity.”¹⁰⁶ In contrast to the manufacturer, which “lacks knowledge as to whether each of the thousand components may infringe . . . third-party IPRs [intellectual property rights],” component makers “will have the necessary knowledge over the technology used,” which makes it “more efficient” for them to clear IPRs.¹⁰⁷

Another setting presenting a medium challenge for FRAND is the determination (in cases other than the clear ones discussed in the preceding Part) of whether a licensee is unwilling. This is more difficult than the modest challenges discussed in the previous Part. But it is no more than a medium challenge because it requires only a binary determination in a setting in which the parties often present royalty rates that are far apart. For example, in the *Microsoft* and *Innovatio* cases,

¹⁰² Robert Pocknell & Dave Djavaherian, The History of the ETSI IPR Policy: Using the Historical Record to Inform Application of the ETSI FRAND Obligation 32–33 (Sept. 27, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4231645 [<https://perma.cc/9UWU-FG3K>].

¹⁰³ Damien Gerardin & Dimitrios Katsifis, End-Product- vs. Component-Level Licensing of Standard Essential Patents in the Internet of Things Context 9 (May 18, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3848532 [<https://perma.cc/M4BH-NEJ5>].

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 10.

¹⁰⁶ GROUP OF EXPERTS ON LICENSING AND VALUATION OF STANDARD ESSENTIAL PATENTS, *supra* note 101, at 82.

¹⁰⁷ Gerardin & Katsifis, *supra* note 103, at 10.

the courts found that the SEP owners' demands were, respectively, 2,000 and (roughly) 400 times higher than what was determined to be a FRAND rate.¹⁰⁸

In short, SDO history, industry characteristics, and a licensee's willingness can present medium challenges that are more difficult than the ones discussed in Part V but not as challenging as those in the next two Parts.

VII. CHALLENGE 7: SIGNIFICANT FRAND CHALLENGE

The next challenge is significant, requiring the determination of the "FR" (fair and reasonable) and "ND" (nondiscriminatory) elements of FRAND.

As an initial matter, U.S. courts have been clear that SEP holders are entitled to the incremental value of their patented technologies rather than the value added by incorporation into the standard. As the Federal Circuit explained in *Ericsson v. D-Link*, "the patentee's royalty must be premised on the value of the patented feature, not any value added by the standard's adoption of the patented technology."¹⁰⁹

¹⁰⁸ Contreras, *Much Ado About Hold-Up*, *supra* note 5, at 889 (comparing Motorola's demand for a 2.25% royalty of the price of a \$500 Microsoft computer (\$11.25) with the court-determined FRAND rate of \$0.00555 per unit); *id.* (comparing Innovatio's proposed royalty of 6% of the end price of a product (potentially resulting in a royalty of \$36.90 per unit) with the court's FRAND determination of \$0.0956 per unit). For a proposed framework for determining willingness, see Jorge L. Contreras, *A Framework for Evaluating Willingness of FRAND Licensees* (LAW360, U. of Utah Coll. of L., Rsch. Paper No. 442, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3810703 [<https://perma.cc/M4BH-NEJ5>].

¹⁰⁹ *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1232 (Fed. Cir. 2014); *see also* *Commonwealth Sci. & Indus. Rsch. Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1305 (Fed. Cir. 2015) (explaining that the value of the patented technology "is distinct from any value that artificially accrues to the patent due to the standard's adoption," and that "[w]ithout this rule, patentees would receive all of the benefit created by standardization—benefit that would otherwise flow to consumers and businesses practicing the standard"); *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370 JVS(DFMX), 2018 WL 4488286, at *54 (C.D. Cal. Sept. 14, 2018), *rev'd in part, vacated in part on other grounds*, 943 F.3d 1360 (Fed. Cir. 2019) (citing *Ericsson*, 773 F.3d at 1232–33); *In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609, at *9 (N.D. Ill. Oct. 3, 2013) (noting that because "patent hold-up is a substantial problem that [F]RAND is designed to prevent," the FRAND rate "must, to the extent possible, reflect only the value of the underlying technology and not the hold-up value of standardization"); *cf.* EUR. COMM'N, SETTING OUT THE EU APPROACH TO STANDARDS ESSENTIAL PATENTS 6 (2017), <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0712&from=EN> [<https://perma.cc/B6D7-KZJH>] ("Licensing terms have to bear a clear relationship to the economic value of the patented technology."). For a different perspective, see *Unwired Planet Int'l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC (Pat) 711, [97] (Eng.), *aff'd* [2020] UKSC 37, <http://www.bailii.org/ew/cases/EWHC/Patents/2017/711.html> [<https://perma.cc/9ZJN-FK3W>] (noting that economic experts in U.K. case agreed that patentee could "appropriate some of the value that is associated with the inclusion of his technology into the standard

But beyond that, challenges loom. How do we put the “FR” of FRAND into practice? There are two main approaches for considering what is fair and reasonable, which have been labeled “bottom up” and “top down.”¹¹⁰

“Bottom up” involves assessing the SEPs in isolation and ascertaining a reasonable royalty. In determining reasonable royalties in patent infringement cases, U.S. courts follow a modified version of the 15-factor *Georgia-Pacific* framework.¹¹¹ As the court in *Microsoft v. Motorola* explained, factors such as those relating to a patentee’s attempts to maintain a monopoly by refusing to license its patents and (since a FRAND-committed patentee cannot discriminate against rivals) the commercial relationship between the parties are not relevant.¹¹² The court also highlighted the importance of the patent to the standard and the significance of the patent to the alleged infringer’s product.¹¹³

For example, the *Microsoft* court began its analysis by considering the rates in patent pools. For several reasons, royalties in this setting tend to be lower than those attained through bilateral negotiation: a pool’s primary objective is to minimize royalties (not maximize licensing), pools often consider only the number (not value) of patents, and rates are reduced from low transaction costs and antitrust concerns.¹¹⁴ The *Microsoft* court acknowledged these factors but considered the pool in determining royalties since the pool was widely adopted and Motorola’s technologies were not important to the standard, and it selected a royalty high enough to attract patentees but low enough to ensure implementation.¹¹⁵

In the *Microsoft* case, the court did not consider agreements to be comparable if they were conducted as part of a “broad cross-license” or executed in the context of the “threat of a lawsuit” or “history of litigation between the parties.”¹¹⁶ Similarly, the court in *In re Innovatio* refused to consider potentially comparable licenses that were “adopted under the duress of litigation,” which resulted in a payment that could have reflected “hold-up value.”¹¹⁷

and the value of the products that are using those standards” but not considering the issue in detail since the parties did not contest it).

¹¹⁰ For an example of a court that applied both approaches, see *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15–2370 JVS(DFMX), 2017 WL 6611635 (C.D. Cal. Dec. 21, 2017) (applying top-down analysis and also considering comparable licenses).

¹¹¹ *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970), *modified and aff’d*, 446 F.2d 295 (2d Cir. 1971).

¹¹² 2013 WL 2111217, at *16–20 (W.D. Wash. Apr. 25, 2013); *see also Ericsson, Inc.*, 773 F.3d at 1229–30 (“In a case involving [F]RAND-encumbered patents, many of the *Georgia-Pacific* factors simply are not relevant; many are even contrary to [F]RAND principles.”).

¹¹³ *See Microsoft*, 2013 WL 2111217, at *3–4.

¹¹⁴ *See id.* at *79–80.

¹¹⁵ *See id.* at *82, *85.

¹¹⁶ *Id.* at *67–69.

¹¹⁷ *In re Innovatio IP Ventures, LLC*, Pat. Litig., No. 11 C 9308, 2013 WL 5593609, at *30–34 (N.D. Ill. Oct. 3, 2013).

But many other times, in applying a bottom-up approach, courts will examine comparable licenses.¹¹⁸ The Federal Circuit in *Commonwealth Scientific & Industrial Research Organisation v. Cisco Systems* explained that where licenses “are sufficiently comparable,” considering them “is typically reliable because the parties are constrained by the market’s actual valuation of the patent.”¹¹⁹ The court refused to exclude the consideration of comparable licenses because they could be “the most effective method of estimating the asserted patent’s value.”¹²⁰

Considering comparable licenses is helpful in seeking to ascertain a patent’s incremental value. But it can be “complicated for courts to perform” because it requires the valuation of numerous SEPs and because “the performance of [a] standard is multidimensional,” with multiple changes resulting from replacing one patent with another.¹²¹

In part for that reason, some courts have applied a second—“top down”—approach. This analysis helps to prevent “royalty stacking,” which arises because “most standards implicate hundreds, if not thousands of patents,” leading to cumulative royalty payments that “can quickly become excessive and discourage adoption of the standard.”¹²² The top-down approach “begins with an aggregate royalty for all patents encompassed in a standard” and then “determines a firm’s portion of that aggregate.”¹²³

For example, in the *Innovatio* case, the court “start[ed] with the average price of a Wi-Fi chip” and then calculated the “average profit that a chipmaker earns on the sale of each chip” since this “isolat[es] the portion of the income from the sale of the chip available to the chipmaker to pay royalties on intellectual property.”¹²⁴ The court then “multiplied the available profit on a chip by a fraction calculated as the number of *Innovatio*’s . . . standard-essential patents, divided by the total number of . . . standard-essential patents.”¹²⁵

¹¹⁸ Jonathan S. Masur, *The Use and Misuse of Patent Licenses*, 110 NW. U. L. REV. 115, 120 n.22 (2015).

¹¹⁹ 809 F.3d at 1303.

¹²⁰ *Id.* at 1303–04.

¹²¹ *In re Innovatio*, 2013 WL 5593609, at *37 (quoting *Microsoft*, 2013 WL 2111217, at *13); see also Haris Tsilikas, *Comparable Agreements and the “Top-Down” Approach to FRAND Royalties Determination*, COMPETITION POL’Y INT’L, July 21, 2020, <https://www.competitionpolicyinternational.com/comparable-agreements-and-the-top-down-approach-to-frand-royalties-determination/> [<https://perma.cc/8JMV-NGQK>] (explaining complexity of “real-life licensing agreements” that include cross-licenses, non-monetary consideration, and a royalty structure that “might differ from a simple running royalty rate”).

¹²² *In re Innovatio*, 2013 WL 5593609, at *9.

¹²³ *TCL Commc’n Tech. Holdings Ltd. v. Telefonaktiebolaget LM Ericsson*, 943 F.3d 1360, 1367 (Fed. Cir. 2019).

¹²⁴ *In re Innovatio*, 2013 WL 5593609, at *38.

¹²⁵ *Id.* For a critique of the court’s assumption that the royalties should be based on the profits, see Thomas F. Cotter, *Patent Damages Heuristics*, 25 TEX. INTELL. PROP. L.J. 159, 207 (2018) (“Ideally, one would use the portion of the sales price that typically covers royalty payments, because the profit margin might stay the same depending on whether the implementer could charge a higher price to cover its costs.”).

The court highlighted the advantages of this approach. It accounted for royalty-stacking concerns because “basing the total potential royalty for all . . . standard-essential patents on the chipmaker’s profit insures that the total royalty stack will not exceed an amount that would force chipmakers out of the business.”¹²⁶ The framework avoided the need to rely on other licenses, “provide[d] some quantitative and analytical rigor” to the analysis, and did not “apportion the value of Innovatio’s patented features based solely on . . . numeric proportionality.”¹²⁷

The top-down approach offers benefits. But each of its component inquiries may not be clear. In a particular case, courts could confront challenges in determining how many SEPs read on the royalty base, the portion of the base that is payable as royalties, the percentage of SEPs owned by the patentee, and the proportion that are likely to be valid and essential.¹²⁸ In addition, decision-makers will sometimes lack access to the information needed to conduct the analysis. For example, licensing deals often are confidential, “which prevents any given licensee from knowing precisely what terms a SEP holder has offered to other licensees and which prevents courts from learning the rates charged by SEP holders that are not before them in a particular matter.”¹²⁹ The unavailability of licensing deals makes it difficult, if not impossible, to calculate the “average, one-way aggregate running royalty rate for a given standard.”¹³⁰

The other element of FRAND is “ND”: nondiscriminatory. SEP owners “must treat ‘similarly situated’ licensees in a similar manner.”¹³¹ In *TCL v. Ericsson*, a leading case on this issue, the court explained that “all firms reasonably well-established in the world market” are similarly situated to TCL, which was trying to obtain a license to Ericsson’s patents.¹³² The court concluded in particular that “Apple, Samsung, Huawei, LG, HTC, and ZTE” were similarly situated.¹³³ And the court found that “local kings,” which “sell[] most or all of [their] devices in a single country,” are “not similarly situated to global firms.”¹³⁴

The court explained that “excluding from the analysis the largest firms in the market would have the effect of insulating them, and further contributing to their

¹²⁶ *In re Innovatio*, 2013 WL 5593609, at *38.

¹²⁷ *Id.* at *39. For a discussion of other cases applying a top-down approach, see Jorge L. Contreras, *Global Rate Setting: A Solution for Standards-Essential Patents?*, 94 WASH. L. REV. 701, 716 (2019) [hereinafter Contreras, *Global Rate Setting*] (referring to “the Japanese Intellectual Property High Court in *Samsung v. Apple Japan*, the U.K. High Court of Justice (Patents) in *Unwired Planet v. Huawei*, and the U.S. District Court for Central District of California in *TCL Communications v. Ericsson*”).

¹²⁸ Cotter, *supra* note 125, at 204–11.

¹²⁹ Contreras, *Global Rate Setting*, *supra* note 127, at 717.

¹³⁰ Tsilikas, *supra* note 121.

¹³¹ Contreras, *Global Rate Setting*, *supra* note 127, at 722.

¹³² *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370 JVS(DFMX), 2018 WL 4488286, at *30 (C.D. Cal. Sept. 14, 2018), *rev’d in part, vacated in part on other grounds*, 943 F.3d 1360 (Fed. Cir. 2019).

¹³³ *Id.* at *31.

¹³⁴ *Id.* at *32.

dominant positions, by imposing a barrier in the form of higher rates for those not at the top end of the market.”¹³⁵ The court held that the offers Ericsson made to TCL were “radically divergent from the rates which Ericsson agreed to accept from licensees similarly situated to TCL,” which led it to conclude that “TCL has carried its burden and demonstrated that [the offers] are discriminatory and do not meet FRAND terms.”¹³⁶

In contrast, the court in *HTC v. Ericsson* rejected a proposed jury instruction that “would transform the non-discrimination element of FRAND into a most-favored-licensee approach, which would require Ericsson to provide identical licensing terms to all prospective licensees.”¹³⁷ As Jorge Contreras has explained, however, “[t]he first sentence of HTC’s proposed jury instruction, which mirrors the model instruction published by the Federal Circuit Bar Association . . . and cited by the court . . . refers to ‘*similar* licensing terms [for] licensees that are *similarly situated*,’ not *identical* licensing terms for *all* prospective licensees.”¹³⁸ Even if it is “puzzling” why the court found the proposed jury instruction to be inaccurate given that “both parties appear[ed] to acknowledge the relevance of the ‘similarly situated’ test for nondiscrimination,”¹³⁹ the *HTC* ruling increases the challenges of establishing whether a royalty is nondiscriminatory.¹⁴⁰

In short, the difficulty of ascertaining the FR and ND aspects of FRAND presents significant challenges.

VIII. CHALLENGE 8: EXTRAORDINARY FRAND CHALLENGE

The last challenge is the most perplexing, an extraordinary challenge based on the global nature of litigation. The difficulty arises from the conflict between territorial patent rights and global commerce.¹⁴¹ The possibility of a single court

¹³⁵ *Id.* at *30.

¹³⁶ *Id.* at *50. For a different perspective, see *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC (Pat) 711, [501] (Eng.), *aff’d* [2020] UKSC 37 (rejecting “hard-edged non-discrimination obligation” and applying competition law requirements where “only terms which are sufficiently dissimilar to distort competition are prohibited”).

¹³⁷ 12 F.4th 476, 486 (5th Cir. 2021).

¹³⁸ Jason Rantanen, *Guest Post by Prof. Contreras: HTC v. Ericsson – Ladies and Gentlemen, The Fifth Circuit Doesn’t Know What FRAND Means Either*, PATENTLY-O (Sept. 13, 2021), <https://patentlyo.com/patent/2021/09/contreras-ericsson-gentlemen.html> [<https://perma.cc/9JLT-TACW>].

¹³⁹ *Id.*

¹⁴⁰ An additional challenge in determining whether royalties are nondiscriminatory stems from an inability to compare license terms, as “some level of transparency . . . is required,” but is often lacking “due to non-disclosure obligations.” See GROUP OF EXPERTS ON LICENSING AND VALUATION OF STANDARD ESSENTIAL PATENTS, *supra* note 101, at 116.

¹⁴¹ See Thomas F. Cotter, *Is Global FRAND Litigation Spinning Out of Control?*, 2021 PATENTLY-O PAT. L.J. 1, 2 (2021). For a court issuing a global license and stating that country-by-country licensing would be “madness,” see *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC (Pat) 711, [543] (Eng.), *aff’d* [2020] UKSC 37.

setting a global FRAND rate naturally leads to a “race to the courthouse,”¹⁴² with one party seeking an “anti-suit injunction” (“ASI”) that prohibits the other party from litigating in other jurisdictions.¹⁴³ Courts could even “establish[] global licensing terms” that bind an implementer that obtains “most of its sales revenue” outside the country where the litigation is filed.¹⁴⁴

How does a court decide whether to grant an ASI? In the United States, it relies on several factors. After reviewing the caselaw, Jorge Contreras concludes that (assuming the involvement of the same parties) the courts examine issues like whether the same issues are involved, whether the local action disposes of the issues in the foreign action, whether the applicant for the injunction “engaged in vexatious or other bad faith conduct,” and whether the injunction “would adversely impact international comity.”¹⁴⁵ Of the four factors, Contreras finds that the most important is “whether the local action will be dispositive of the foreign action.”¹⁴⁶ And he notes that this factor “threatens to broaden greatly the availability” of ASIs.¹⁴⁷

Once one party is able to obtain an ASI, then the other will try to stop that with an “anti-anti suit injunction” (“AASI”) that would prevent the litigant from petitioning a court for an ASI.¹⁴⁸ Nor does it end there. Take, for example, the licensing dispute between Samsung and Ericsson. In December 2020, Ericsson sued in the Eastern District of Texas.¹⁴⁹ At the time of filing, Ericsson did not realize that Samsung had sued in China a few days earlier.¹⁵⁰ When Samsung then sought an ASI, Ericsson was surprised to learn it could be compelled to litigate the dispute only in Wuhan, China.¹⁵¹ In addition, Samsung received an anti-anti-anti suit injunction (“AAASI”) that penalized Ericsson for going to any other forum to seek

¹⁴² Jorge L. Contreras, *The New Extraterritoriality: FRAND Royalties, Anti-Suit Injunctions and the Global Race to the Bottom in Disputes over Standards-Essential Patents*, 25 B.U. J. SCI. & TECH. L. 251, 283 (2019) [hereinafter Contreras, *The New Extraterritoriality*] (noting incentive for parties “to initiate litigation in the most favorable jurisdiction possible, as quickly as possible, often to foreclose a later suit in a less favorable jurisdiction”).

¹⁴³ Jorge L. Contreras, *It’s Anti-Suit Injunctions All the Way Down – The Strange New Realities of International Litigation over Standards-Essential Patents*, 26 IP LITIGATOR 1, 3 (2020) [hereinafter Contreras, *Anti-Suit Injunctions*] (“Anti-suit injunctions are interlocutory in personam remedies issued by a court in one jurisdiction to prohibit a litigant from initiating or continuing parallel litigation in another jurisdiction.”).

¹⁴⁴ Cotter, *supra* note 141, at 8.

¹⁴⁵ Contreras, *The New Extraterritoriality*, *supra* note 142, at 278.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.* at 279.

¹⁴⁸ Contreras, *Anti-Suit Injunctions*, *supra* note 143, at 7.

¹⁴⁹ Shuying Lin, *Ericsson v. Samsung: Anti-Suit Injunctions in Cross-Border Litigation*, YK LAW (2022), <https://yklaw.us/ericsson-v-samsung-anti-suit-injunctions-in-cross-border-litigation/> [https://perma.cc/3YSW-H9ST].

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

an AASI that would prohibit Samsung from seeking an ASI.¹⁵² Despite the AAASI that prohibited it, Ericsson obtained an AASI and the Texas case continued.¹⁵³

One final example is the European Union's February 2022 case against China at the World Trade Organization "for restricting EU companies from going to a foreign court to protect and use their patents."¹⁵⁴ The EU explained that patent holders that "go to court outside China often face significant fines in China, putting them under pressure to settle for licensing fees below market rates."¹⁵⁵ It stated that this policy "is extremely damaging to innovation and growth in Europe, effectively depriving European technology companies of the possibility to exercise and enforce the rights that give them a technological edge."¹⁵⁶

These issues present the most difficult challenges because they implicate national sovereignty and politics. Courts around the world apply different rules and need not be bound by other courts' rulings. There is no simple answer here.

CONCLUSION

In conclusion, there are many reasons why FRAND is a complex topic. The first four challenges offer low-hanging fruit that could clarify FRAND issues by paying less attention to systemic holdup, jettisoning unsupported positions, not letting industry funding replace reasoned debate, and being aware of the role played by patent trolls. The remaining four challenges pose levels of difficulty that increase from modest (clear SDO rules or facts) to medium (SDO history, industry characteristics, unclear licensee willingness) to significant (determining "fair and reasonable" and "nondiscriminatory") to extraordinary (global litigation). While not all of these challenges can be addressed with simple solutions, an awareness of the types of challenges presented by FRAND could prove helpful in the years ahead.

¹⁵² *Id.*; see also Peter K. Yu, Jorge L. Contreras & Yu Yang, *Transplanting Anti-Suit Injunctions*, 71 AM. U. L. REV. 1537, 1585–87 (2022).

¹⁵³ Lin, *supra* note 149; Dani Kass, *Gilstrap Won't Let Samsung Enforce China FRAND Injunction*, LAW360 (Jan. 11, 2021), <https://www.law360.com/articles/1343500/gilstrap-won-t-let-samsung-enforce-china-frand-injunction> [<https://perma.cc/7CHJ-HCRP>].

¹⁵⁴ European Commission Press Release IP/22/1103, EU Challenges China at the WTO to Defend its High-Tech Sector (Feb. 18, 2022), https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1103 [<https://perma.cc/GSG9-8KR3>].

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*