

Standards, Licensing, and Innovation:
A Response to DOJ AAG's Comments on Antitrust Law and Standard-Setting

Standards are key components of established markets, such as networking, cellular, and computing, as well as emerging markets like 5G and the internet of things (IoT).¹ Within these markets, standards enable the creation of interoperable devices and software that can improve efficiencies in processes, products, and services across every sector of the economy.

In a speech delivered at USC Law School on November 10, 2017², Assistant Attorney General for Antitrust Makan Delrahim offered his perspective on the interplay between standards development, patent licensing, and antitrust. This speech stands in stark contrast to U.S. legal precedent, as well as views expressed by previous U.S. antitrust enforcers and other competition authorities and experts around the world, who have recognized the potential anti-competitive consequences created by patent licensing practices that exploit “hold-up,” and the vulnerability users of standards face because of the investments they make in developing and selling products.³ SEP abuses can transfer the value of innovations made by standard users to entrenched

¹ While there is no universal definition for the IoT, the concept encompasses everyday products using the internet to communicate data collected through sensors. IoT is expected to enable improved efficiencies in processes, products, and services across every sector. See Department of Commerce Internet Policy Task Force and Digital Leadership Team (Jan. 2017), available at https://www.ntia.doc.gov/files/ntia/publications/iot_green_paper_01122017.pdf. Forecasts estimate that 8.4 billion IoT devices will be in use worldwide this year (up 31 percent from 2016), and that this number will climb to 20.4 billion by 2020. See Press Release, *Gartner Says 8.4 Billion Connected "Things" Will Be in Use in 2017, Up 31 Percent From 2016* (Feb. 7, 2017), available at <http://www.gartner.com/newsroom/id/3598917>.

² See Assistant Attorney General Makan Delrahim, *Remarks at the USC Gould School of Law's Center for Transnational Law and Business*, Nov. 10, 2017 (“USC Speech”), available at <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-usc-gould-school-laws-center>. AAG Delrahim and other DOJ employees have since made similar speeches in other venues. See, e.g., Principal Deputy Assistant Attorney General Andrew C. Finch Delivers Remarks at the Heritage Foundation, Jan. 23, 2018, available at <https://www.justice.gov/opa/speech/principal-deputy-assistant-attorney-general-andrew-c-finch-delivers-remarks-heritage>.

³ See, e.g., US Federal Trade Commission, Commissioner Terrell McSweeney, *Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters* available at

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SEP holders who did not contribute to the value of those innovations and in the worst case can result in businesses—particularly small and medium businesses—exiting the market entirely.

In light of the importance of standards development; the interplay between standards development and intellectual property rights to the U.S. and global economy, and the negative impacts of SEP abuse, a free and robust debate regarding the issues discussed in the USC speech is critical. While we agree that industry standards “play a vital role in many sectors of the economy” and that “the setting of industry standards has become more critical and more complicated,”⁴ the USC speech seems to ignore some important background facts, and we question whether it draws the appropriate conclusions regarding the role of antitrust enforcement. We hope that innovative companies like our members can play a part in that debate, through this submission and otherwise. This paper also builds on and explains the perspectives expressed by 58 companies, academics and SMEs in their January 24, 2018, letter to AAG Delrahim;⁵ and a letter from 77 former government enforcement officials and professors of law, economics, and business, write to express concern with the USC speech and related speeches.⁶

https://www.ftc.gov/system/files/documents/public_statements/1350033/mcsweeny_-_the_reality_of_patent_hold-up_3-21-18.pdf (discussing important and long history of competition law enforcement against SEP hold up practices).

⁴ See USC Speech.

⁵ See *Industry Letter to AAG Delrahim Regarding Standards, Innovation and Licensing*, available at <http://www.ccianet.org/wp-content/uploads/2018/01/Industry-Letter-to-DOJ-AAG.pdf>.

⁶ See *Academic and Former Regulator Letter to AAG Delarahim Regarding Speeches on Patents and Holdup*, available at <https://www.competitionpolicyinternational.com/wp-content/uploads/2018/05/DOJ-patent-holdup-letter.pdf>.

Section A of this paper discusses why patent hold-up is actually a competition law problem that can harm the economy. Section B explains why a focus on so-called upstream “innovators” ignores the contributions that others in the value chain make to benefit consumers and advance the American and global economy. Section C explains why enforcement of voluntary licensing commitments is, by definition, not a form of compulsory licensing. Section D advocates that U.S. antitrust enforcement and antitrust policy should encourage, not threaten, diversity among standard-setting organizations so they can be responsive to the diverse interests of participants in standards development. As this paper explains, if the proposed policy approaches were implemented, antitrust policy would harm the U.S. economy and threaten U.S. leadership in technological innovation.

Executive Summary

Standardization plays an important role in the increasingly interconnected global economy. Assistant Attorney General Delrahim notes, and we agree, that antitrust enforcement and competition policy should aim to promote innovation and consumer welfare in the context of such standardization. However, the announced approaches conflict with established legal precedent and policy in the United States. These approaches threaten U.S. industry and consumer interests, harm U.S. innovation, interfere with parties' freedom to contract, and discourage experimentation with different ways of approaching the interplay between patented technologies and industry standards.

Specifically, the view that hold-up by owners of standard essential patents ("SEPs") is not an antitrust problem contradicts what scholars, the U.S. courts, and competition authorities around the world have long-recognized: clear, enforceable rules that constrain the ability of a SEP owner to exploit the market power created by the inclusion of its SEP in a popular standard are necessary to realize the required pro-competitive efficiencies of standardization. A SEP owner that seeks to exploit vague rules, or breaches a licensing commitment, is attempting to exercise market power, often monopoly power, that it promised to forego in exchange for having its patent incorporated into a standard. That behavior harms not just implementers of a standard, but the entire ecosystem building on such standard, including consumers and small businesses who lack the resources to litigate SEP disputes.

Mr. Delrahim argues that the “more serious risk” in the context of standard-setting is the “hold-out problem.”⁷ But it seems the identified “hold-out” problem is simply the process of negotiations where one party (the licensee) disagrees with the demands unilaterally set by the other (the patentee), a process that a patentee is always free to accelerate by going to court to seek compensation should it decide doing so best serves its interests. In the event of such disputes, and where the licensee is in the wrong, the courts can fully compensate an SEP holder for any “hold-out,” including by awarding interest to compensate the patentee for any delay in realizing payment for infringed patents. Thus hold-out affects the interests of only the patent holder and the prospective licensee, and – as with other private disputes – can be readily addressed by the U.S. courts.

By contrast, patent hold-up has industry-wide implications because the exercise of market power that a patent holder previously agreed to forgo to win inclusion of its patents in a standard inflates prices not only for the particular licensee but also for downstream consumers and the industry overall. These are the types of issues and harm that are properly addressed by the competition laws.

This focus on “hold up” divides the technology world into two camps—companies with SEP licensing programs, labeled as “innovators,” and prospective targets for such SEP licensing, labeled as standard “implementers.” In this view, standard implementers are mere exploiters of other companies’ technologies, free riders that benefit from the inventions of SEP licensors.

⁷ *Id.*

Any asserted dichotomy between “innovators” and “implementers” is false. As explained in Section B, companies that implement standards both make important technical contributions to develop the standards they implement and innovate above the level of a standard to create differentiated products that consumers want to buy. It is erroneous to assume that “upstream” inventions that are contributed to standard-setting activities merit more protection than “downstream” innovations contributed by others in the supply chain. This view exalts one particular business model, SEP licensing, over others. The value of an invention is determined by its own merits and the technical advancements it embodies – not by whether it is created by an upstream or a downstream producer.

Mr. Delrahim’s remarks also equate the enforcement of voluntary commitments to license on fair, reasonable, and non-discriminatory (“FRAND”) terms with “compulsory licensing.” This reflects a misunderstanding of the FRAND bargain that SEP licensors agree to as part of their participation in standards development. SEP licensors make FRAND commitments *voluntarily* because they hope to obtain valuable licensing opportunities in exchange for their commitments to license SEPs on FRAND terms, as noted in Section C below. Based in part on these commitments not to exclude others from the standard, patent holders advocate for the inclusion of their patented inventions into standards. In the case of widely-adopted standards, this means that manufacturers of hundreds of millions or even billions of products use their patents in implementing the standard—thus securing for the SEP holders that wish to seek licenses a steady stream of licensing revenues. Enforcing voluntary agreements to license on FRAND terms, and thereby ensuring that both sides receive the benefits of such a

bargain, is a far cry from compelling a patentee to license its patent. It is instead holding an SEP licensor to the commitment it freely gave.

Lastly, it is incorrect to suggest that an SSO's elaboration of the meaning of FRAND risks undermining standard-setting and innovation – even when that elaboration does nothing more than mirror the law as expressed by the U.S. courts. Once a particular patented technology is incorporated into a standard, choices that existed before that decision was made may no longer be viable, and the patentee whose technology was selected will be in a stronger negotiating position should it seek to license its invention. Different SSOs deal with the risk that creates for their members and the success of the standards they create in different ways – and participants are free to decide SSOs in which they wish to participate in. Absent a clear impact on competition or innovation, neither of which has been demonstrated, there is no reason for U.S. competition policy or antitrust enforcement to discourage attempts by SSOs to create greater clarity and certainty in the licensing of FRAND-encumbered SEPs, or to explore licensing options beyond FRAND. As shown in Section D below, IEEE's Intellectual Property Rights (IPR) policy update has had highly positive results.

Further Analysis and Elaboration

A. Patent Hold-Up is a Competition Law Problem That Harms the Economy

1. Inclusion in a Standard Should Not be What Drives the Value of SEPs

SEPs are no more or less valuable than other patents. Standards typically incorporate numerous SEPs, sometimes thousands or even tens of thousands per standard. Complex technology products often incorporate hundreds of standards.⁸ As should be obvious from the large number of patents that read on a single product, not all of these patents (including SEPs) represent breakthrough technologies.⁹ As former FTC Chairman Tim Muris observed, “[t]he economy is awash in low-quality patents, particularly in the crucial high-technology world of Silicon Valley.”¹⁰ The abundance of low-quality patents is no less of an issue for SEPs than it is for non-SEPs.

The technical value contributed by many of the patents used in a given standard can be insubstantial. For example, in *Microsoft Corp. v. Motorola, Inc.*,¹¹ the court determined that the handful of Wi-Fi patents, for which Motorola had sought a royalty of 2.25% of the price of game consoles that incorporated Wi-Fi (among numerous other technologies and standards),

⁸ See Mark A. Lemley & Carl Shapiro, Patent Holdup and Royalty Stacking, 85 TEX. L. REV. 1991, 1992 (2007). For example, an independent study found that, as of November 2012, 49 different patent holders declared 5,919 patent families declared as essential to the LTE standard. See Cyber Creative Institute Co., Evaluation of LTE essential patents declared to ETSI (June 2013), available at: <http://www.cybersoken.com/file/lte03EN.pdf>. [Brad Biddle articles would be good here as well]

⁹ See Timothy J. Muris, Bipartisan Patent Reform and Competition Policy, AEI Working Paper at 1 (May 2017) (noting that “many” of the 250,000 patents used in a smartphone are “of questionable quality that users of the standards cannot avoid.”)

¹⁰ *Id.* at 1.

¹¹ 2013 U.S. Dist. LEXIS 60233 (W.D. Wash. 25 Apr. 2013), *aff'd*, 795 F.3d 1024 (9th Cir. 2015).

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“provid[ed] very little contribution to core functionality of the 802.11 [Wi-Fi] Standard.”¹²

Moreover, “the majority of the technologies available to and/or adopted by the 802.11 drafters were in the public domain and not covered by patents.”¹³

The *Microsoft* court did not have occasion to assess the validity of the patents at issue or whether the asserted SEPs were in fact infringed because that particular case did not include patent infringement claims. In infringement cases, in which the validity or infringement of alleged SEPs is necessarily at issue, SEP holders have fared poorly. Indeed, the great majority of asserted SEPs that have been adjudicated in infringement cases have been determined to be invalid or not infringed.¹⁴ This is particularly significant because patentees typically assert their strongest patents against alleged infringers. Yet even the best patents that SEP holders assert have failed to hold up in litigation. And SEPs determined to be valid and infringed may offer only marginal benefits over alternative technologies that were available at the time of standardization. But once the invention claimed in even a weak patent is included in a standard, any implementer of the standard can be required to take a license to the patent. The Court of Appeals for the Federal Circuit described this phenomenon as follows:

¹² *Id.* at *62.

¹³ *Id.* at *50.

¹⁴ See RPX Corp., Standard Essential Patents: How Do They Fare? available at <https://www.rpxcorp.com/wpcontent/uploads/sites/2/2015/03/Standard-Essential-Patents-How-Do-They-Fare.pdf>; and John Jurata, Jr. & David B. Smith, *Turning the Page: The Next Chapter of Disputes Involving Standard-Essential Patents*, CPI Antitrust Chronicle, 15 Oct. 2013.

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When a technology is incorporated into a standard, it is typically chosen from among different options. Once incorporated and widely adopted, that technology is not always used because it is the best or the only option; it is used because its use is necessary to comply with the standard. *In other words, widespread adoption of standard essential technology is not entirely indicative of the added usefulness of an innovation over the prior art.*¹⁵

In a similar vein, the former chair of the European Telecommunications Standards Institute's ("ETSI") Technical Committee Special Mobile Group, responsible for creating leading standards such as GSM and UMTS, has explained that "[i]n nearly all cases, ETSI can choose between alternatives with comparable performance."¹⁶

Yet, as explained in more detail below, due to the proliferation of patents in contemporary technology, and the degree to which networking and telecommunications products depend on standards, SEP holders (even those whose SEPs are of insubstantial or even trivial technical value) can hold up entire industries and markets by refusing to license their SEPs or by licensing their SEPs on unfair or discriminatory terms. Rather than seeking royalties based on the fair contribution of the patented technology to the standard, an SEP holder can leverage its patent rights to demand compensation far beyond the SEP's technical value.

¹⁵ *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1233 (Fed. Cir. 2014) (emphasis added).

¹⁶ Expert Report of Friedhelm Hillebrand, *Nokia Corp. v. Qualcomm Inc.*, Dkt. No. 359-2, filed in *Nokia Corp. v. Apple Inc.*, Case No. 09-cv-791, ¶ 11 (D. Del. 16 May 2011).

2. Standardization Gives Rise to Patent Hold-Up

As the Antitrust Division, other federal agencies, and U.S. courts have long recognized, patent hold-up creates risks to competition.¹⁷ Characterizing hold-up as a “unilateral” problem that antitrust law should not be concerned about ignores that the power to hold up arises from concerted multilateral action by participants, often competitors, in a standard-setting organization agreeing on specific technologies to use in the industry. Standardization forecloses alternatives that would otherwise compete in the marketplace, and the FRAND commitment is intended to be a constraint on market power that standardization can create. Efforts by patentees to evade promises they made to license on FRAND terms comprise the abuse of monopoly power that the FRAND commitment is intended to limit.¹⁸ Such unearned monopoly power derives not necessarily from the patentee’s “superior skill, foresight, and industry,”¹⁹ but may derive instead from the fact that it is impossible to design around SEPs while maintaining compliance with the standard, creating a “lock-in” effect.²⁰

Before the adoption of a standard, alternative technological solutions generally exist to provide a particular functionality for which the standard-setting process seeks a uniform, market-

¹⁷ See, e.g., U.S. Dep’t of Justice and U.S. Patent & Trademark Office, Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments 4 (Jan. 8, 2013) (“U.S. DOJ/PTO Statement”), available at <http://www.justice.gov/atr/public/guidelines/290994.pdf>; Compl., *Federal Trade Commission v. Qualcomm Inc.* (N.D. Cal. Jan. 17, 2017) (“U.S. FTC Compl.”), ¶ 49, available at https://www.ftc.gov/system/files/documents/cases/170117qualcomm_redacted_complaint.pdf. See also Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal cooperation agreements, C 11/1 (Nov. 1, 2011), ¶ 269 (“Horizontal Guidelines”); Case No. COMP/M6381, *Google/Motorola Mobility* ¶¶ 105–108 (Feb. 13, 2012).

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wide solution.²¹ Companies with patents that may cover these alternative solutions compete vigorously for inclusion of their preferred technologies into each standard. Once a standard is set, *ex ante* competition ceases. Patents that cover the chosen technology become essential because they must be used to comply with the standard. And once a standard achieves commercial acceptance, compliance with the standard becomes a matter of commercial necessity, as failing to comply with the standard would render a product incompatible with other companies' products. This creates a "lock-in" effect, whereby companies that make or use standard-compliant products must use the SEPs that are incorporated into the standards that they implement.²² The degree of lock-in reflects what may be the prohibitive costs of switching away from the standardized technology.

¹⁸ For instance, the Department has noted that SEP holders "may gain market power and potentially take advantage of it by engaging in patent hold-up, which entails asserting the patent to exclude a competitor from a market or obtain a higher price for its use than would have been possible before the standard was set, when alternative technologies could have been chosen. This type of patent hold-up can cause other problems as well. For example, it may induce prospective implementers to postpone or avoid making commitments to a standardized technology or to make inefficient investments in developing and implementing a standard in an effort to protect themselves. Consumers of products implementing the standard could also be harmed to the extent that the hold-up generates unwarranted higher royalties and those royalties are passed on to consumers in the form of higher prices." U.S. DOJ/PTO Statement at 4.

¹⁹ *United States v. Aluminum Co. of Amer.*, 148 F.2d 416, 430 (2d Cir. 1945) (L. Hand, J.).

²⁰ *Id.*

²¹ See Brief of Amicus Curiae The Institute Of Electrical and Electronics Engineers, Inc., in support of No Party, *Apple, Inc. v. Motorola, Inc.* at 19, No. 2012-1548 (Fed. Cir. Dec. 19, 2012) (when deciding which technology to include into a standard, SSOs typically choose from among "multiple available technologies" that offer "alternative approaches" to solving each technological issue that the standard addresses). As Friedhelm Hillebrand, former chair of the European Telecommunications Standards Institute's Technical Committee Special Mobile Group, has explained, "[i]n nearly all cases, ETSI can choose between alternatives with comparable performance." Expert Report of Friedhelm Hillebrand, Dkt. No. 359-2, *Nokia Corp. v. Qualcomm Inc.*, Case No. 09-cv-791 (D. Del. May 16, 2011) at ¶11.

²² See A. Douglas Melamed and Carl Shapiro, *How Antitrust Law Can Make FRAND Commitments More Effective* (forthcoming, Yale Law Journal), available at <https://faculty.haas.berkeley.edu/shapiro/frandcommitment.pdf> ("Melamed & Shapiro").

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Incorporation of a patent into a standard therefore changes the balance of power between patent holders and prospective licensees dramatically, as the Ninth Circuit explained in *Microsoft Corp. v. Motorola, Inc.*:

[O]nce a standard becomes widely adopted, SEP holders obtain substantial leverage over new product developers, who have little choice but to incorporate SEP technologies into their products. Using that standard-development leverage, the SEP holders are in a position to demand more for a license than the patented technology, had it not been adopted by the SSO, would be worth. The tactic of withholding a license unless and until a manufacturer agrees to pay an unduly high royalty rate for an SEP is referred to as “hold-up.”²³

The SEP holder’s strengthened bargaining position after adoption of a standard is directly attributable to the elimination of alternatives to the SEP resulting from the adoption of a standard. Because license negotiations typically do not take place until after a standard has been adopted, when the SEP holder is no longer competing to have its technology included in the standard, the prospective licensee is “at the patentee’s mercy.”²⁴ Prospective licensees therefore may be willing to pay a much higher royalty for use of the patented technology than they would have been willing to pay *ex ante*, when the SEP holder faced competition from other technologies. Further, while large corporations familiar with SEP licensing may be able to absorb the cost of an unreasonable license or seek redress in court at significant cost to their own innovative efforts, the same opportunities may not be available to small and medium enterprises. These innovators may be forced to abandon business plans in standard-dependent markets entirely.

²³ *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1030 (9th Cir. 2015); see *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014); U.S. DOJ/PTO Statement 4.

²⁴ *Apple Inc. v. Motorola, Inc.*, 869 F. Supp. 2d at 913.

As a result, the Antitrust Division has recognized that, unless constrained, a SEP holder can exploit its unearned market power to obtain unfair licensing terms, including access to a licensee's patents at unreasonable prices or supra-competitive royalties that are significantly higher than the SEP holder could have obtained before its patent was incorporated into the standard.²⁵

²⁵ U.S. Dep't of Justice and Fed. Trade Comm'n, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION at 35-36 (2007), *available at* <http://www.justice.gov/atr/public/hearings/ip/222655.pdf>. *See also* Horizontal Guidelines at ¶ 269 (noting that the need for standard compliance enables SEP holders to “behave in anti-competitive ways, for example by ‘holding-up’ users after the adoption of the standard either by refusing to license the necessary IPR or by extracting . . . excessive royalty fees thereby preventing access to the standard.”).

3. Preventing Hold-Up Through FRAND Commitments

Recognizing the potential for SEP holders to engage in hold up—and demand unfair, unreasonable, and/or discriminatory licensing terms—standard-setting organizations require participants to commit in advance to license SEPs on FRAND or royalty-free terms.²⁶ As Judge Posner has explained, “[t]he purpose of the FRAND requirements . . . is to confine the patentee’s royalty demand to the value conferred by the patent itself as distinct from the additional value—the hold-up value—conferred by the patent’s being designated as standard-essential.”²⁷ The value conferred by the patent itself is generally viewed as the amount the SEP holder could have received from licensing before the adoption of a standard and conferral of unearned market power—when the patent still faced competition from alternative technologies—or the *ex ante* value.²⁸ Accordingly, the FRAND commitment stands as “a bulwark against unlawful monopoly,”²⁹ preventing SEP holders from exercising unearned market power and charging supra-competitive royalties.

²⁶ See *Apple Inc. v. Motorola Mobility, Inc.*, 886 F. Supp. 2d at 1067 (noting that FRAND rules “ensure that standards do not allow the owners of essential patents to abuse their market power to extort competitors or prevent them from entering the marketplace.”). See also Case AT.39985 – *Motorola (GPRS)* ¶¶ 290-291 (“In order to ensure effective access to the GPRS standard, SEP holders are required by ETSI to commit to license its SEPs on FRAND terms and conditions. In principle, FRAND terms and conditions should be the outcome of commercial negotiations in which a SEP holder should not be able to exploit the market power it enjoys following the inclusion of its patented technology in the standard.”); Case No COMP/M.6381 – *Google / Motorola Mobility* ¶ 57 (noting that the European Commission’s Horizontal Cooperation Guidelines “recognise the market power which may be obtained by participants to the creation of a standard” and “therefore seek to specifically limit that market power” by requiring standard-setting organizations to require participants to make FRAND commitments).

²⁷ *Apple, Inc. v. Motorola, Inc.*, 869 F. Supp. 2d 901, 913 (N.D. Ill. 2012), *rev’d in part on other grounds*, 2014 WL 1646436 (Fed. Cir. Apr. 25, 2014).

²⁸ See Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition* 194 (2011).

²⁹ *Broadcom Corp. v. Qualcomm, Inc.*, 501 F.3d 297, 305 (3d Cir. 2007); *Research in Motion Ltd. v. Motorola, Inc.*, 644 F. Supp. 2d 588 795-96 (N.D. Tex. 2008).

Patent holders that participate in standard development voluntarily agree to license their SEPs on royalty-free or FRAND terms, giving up the unearned market power that is created by incorporating their patents into standards. SEP owners with business models based on patent licensing are willing to enter into this bargain because they may gain a large commercial benefit in exchange.³⁰ By taking part in standard-setting, patent holders gain the ability to influence the development of standards and, importantly, to have their technologies incorporated in the resulting standards. For SEP owners that have active licensing programs, this in turn may translate into substantial licensing revenues from implementers of the standard who can then be required to license SEPs in order to comply with the standards.³¹ In the case of mobile phones, this market amounts to two billion standard-compliant handsets manufactured annually, each one of which is a potential source of licensing revenue to each of the hundreds of SEP owners claiming to own patents necessarily infringed by the implementation of one of the many standards implemented in a smartphone.

³⁰ See *TCL Communication Technology Holdings v. Telefonaktiebolaget LM Ericsson*, Case No. SACV 14-341 (C.D. Cal. Dec. 21, 2017), slip op. at 2 (“[t]he acceptance of patent holder’s patent into a standard is of great value to the patent holder” and in exchange requires the patent holder to agree to license its SEPs on FRAND terms); Melamed & Shapiro at 7 (“When patent holders do make [FRAND] commitments, they are voluntarily choosing to gain volume (by including their technologies in the standard) in exchange for unit price (by agreeing to only charge FRAND royalties). If the standard is successful, that bargain is generally very profitable . . .”).

³¹ “[A] patent holder that also sells products and services related to the standard benefits from expanded marketing opportunities, and patent holders that focus on licensing their inventions benefit from an expanded source of revenue.” Statement of Joseph F. Wayland Acting Assistant Attorney General, Antitrust Division, Before The Committee on The Judiciary, United States Senate, Regarding “Oversight of The Impact on Competition of Exclusion Orders to Enforce Standards-Essential Patents” (July 11, 2012), available at <http://www.justice.gov/atr/public/testimony/284982.pdf>.

Contending that SSOs should not enable “licensees to obtain more favorable terms than they would otherwise achieve in an unconstrained market”³² overlooks the essential SEP bargain and the role of FRAND or royalty-free licensing commitments in preventing the exercise of unearned monopoly power. This assertion misses the critical point that once patented technology has been incorporated into the standard, the set of available alternatives has already been constrained. The unconstrained market is the market that existed before standardization, which is why the essence of FRAND is to capture the dynamics of that market by ensuring that SEP holders are compensated based on the *ex ante* value of their patents—the value in the unconstrained market that preceded standardization. Enforceable and meaningful FRAND undertakings are a necessary check against the potential abuse of market power, which is conferred by virtue of a technology’s inclusion in a standard rather than obtained through competition on the merits in an unconstrained market with alternatives.

4. The Concern with Hold-Out is Misplaced

The hold-up problem has been universally recognized by antitrust enforcement agencies, courts, and scholars in multiple jurisdictions. Critics of this consensus claim that the real issue is the problem of “hold-outs,” or implementers that refuse to take licenses to SEPs. To the extent that this concern refers to collusive agreements among implementers to boycott competitors and their products that result in anticompetitive effects, although there is no claim that such conduct is actually occurring, existing law already addresses such collusive behavior. Focusing the Department’s limited time, resources, and advocacy on such unlikely and apparently non-existent practices would be unproductive.

³² Delrahim Remarks at 4.

On the other hand, to the extent that this “hold-out” concern refers to isolated hold-outs by individual licensees, this concern is misplaced for at least three reasons. First, unlike the case with hold-up, which is pervasive and well documented in case law, there is no evidence of a pervasive hold-out. Much of what critics label hold-out is merely the refusal of potential licensees to accede to SEP holders’ demands to pay royalties that reflect the *ex post* market power conferred upon them by standardization. The fact that a prospective licensee does not respond to an invitation to license it receives from a SEP licensor by reaching for its checkbook is no more evidence of “hold out” than the fact that a prospective used car purchaser seeks to negotiate a lower price than the one the seller first offers. Indeed, given the large number of alleged SEPs that have found to be invalid or not infringed, it would be an imprudent prospective licensee who did *not* carefully evaluate the strength of the patents it is being asked to license.

Indeed, the U.S. Courts have already considered arguments regarding “hold out” (sometimes referred to as “reverse hold up”) and determined that such behavior is *not* a “significant concern” in the context of SEP licensing. As one U.S. District Court held:

[T]he court is not persuaded that reverse hold-up is a significant concern in general, as it is not unique to standard-essential patents. Attempts to enforce any patent involve the risk that the alleged infringer will choose to contest some issue in court, forcing a patent holder to engage in expensive litigation. The question of whether a license offer complies with the RAND obligation merely gives the parties one more potential issue to contest. When the parties disagree over a RAND rate, they may litigate the question, just as they may litigate any issue related to liability for infringement.”³³

³³ See *In re Innovatio IP Ventures, LLC Patent Litig.*, Case No. 11-C-9308, 2013 WL 5593609 at *11 (N.D. Ill. Oct. 3, 2013).

In other words, an approach focused on “hold-out” over “hold-up” is not just poor policy; it is contrary to the views of U.S. courts that have adjudicated SEP licensing disputes.

Second, unlike hold-up, which imposes higher costs on an entire industry and thereby harms consumers, any unilateral hold-out that might exist affects only the two parties to the licensing dispute: the SEP holder and the potential licensee. Where a FRAND commitment is violated, the patent holder asserts market power it promised to forgo to the detriment of all implementers of a standard and the consumers who purchase the products they create. Similar competition law interests are not implicated when a prospective licensee disputes whether the licensing fees or other terms sought by the SEP holder are fair and reasonable.

Critics point to hold-out as threatening the ability of SEP licensors to earn a return on their research and development (R&D) expense, costs that are sunk by the time the SEP licensor begins to seek licenses. But this argument presumes that SEP owners are entitled to guaranteed returns on their R&D investments, without regard to whether there are competing technologies or whether the inventions they create turn out to be the subject of valid and infringed patents. As our member companies know from experience, not every R&D investment is successful. Just as we do not seek government guarantees of our members’ continued commercial success, there is no justification for federal antitrust policy to mitigate the risks inherent in R&D expenses that are intended to – but may not – lead to valid, essential and technically significant SEPs.³⁴ Antitrust law does not permit firms introducing new products or technologies to act anticompetitively on the ground that they cannot otherwise obtain sufficient compensation for their R&D costs.³⁵ The

³⁴ See Melamed & Shapiro at 8.

³⁵ *Id.*

fact that technology firms incur sunk costs cannot justify allowing an SEP holder to renege on a promise to forgo the exercise of market power conferred by a standard and to impose terms on licensees that harm consumers and competition. A hold-out focused policy approach also ignores the fact that having an SEP incorporated into a broadly adopted standard can secure substantial returns over a prolonged period, which can last even after a technology is outdated because of the need for standard-compliant products to maintain backward compatibility with earlier-generation standards.

Third, the hold-out concern is based on the false premise that SEP holders have “no recourse” if standard implementers refuse to license valid SEPs that they in fact infringe. Far from having “no recourse,” the SEP holder who believes a prospective licensee is acting in a dilatory fashion can sue the standard implementer that infringes its patents and refuses to take a license. There are well established processes for seeking redress from infringers through the judicial process, and the courts regularly adjudicate infringement disputes that cannot be settled amicably. There is nothing about SEPs that makes recourse to the judicial system less adequate than it is for holders of all other patents. On the contrary, standard compliance often makes proving infringement easier than in ordinary patent cases,³⁶ and judicial determinations that a patent must be infringed to comply with a standard serve as a deterrent against future hold-outs.

³⁶ See *Fujitsu Ltd. v. Netgear, Inc.*, 620 F.3d 1321, 1327 (Fed Cir. 2010) (holding “a district court may rely on an industry standard in analyzing infringement. If a district court construes the claims and finds that the reach of the claims includes any device that practices a standard, then this can be sufficient for a finding of infringement . . .”).

5. Antitrust Law Should Address FRAND Violations

The assertion that antitrust law has no role to play in FRAND disputes is incorrect. Antitrust is concerned with the acquisition of market power through anticompetitive means. As discussed above, when companies promise through their FRAND commitments not to exercise the market power they gained from incorporation of their patents into standards but then breach those commitments, they are exercising market power they acquired by promising to forgo that exercise. Recognizing this principle, U.S. antitrust agencies under both Republican and Democrat administrations have warned against anticompetitive conduct related to the violation of SSO patent policies and breach of FRAND commitments.³⁷ Similarly, courts have held that exclusionary conduct by SEP owners is reachable under Section 2 of the Sherman Act when they make FRAND commitments that they do not intend to honor and subsequently breach those commitments.³⁸ Wrongful hold-up conduct can occur, however, even absent such deception.³⁹

At a minimum, competition law can and should address cases of significant FRAND violations that harm industry and consumers. To do otherwise would allow SEP holders violating their FRAND commitments to continue to charge supra-competitive royalties for the use of their patents incorporated into standards. To the extent that implementers of standards are able to pass along these overcharges to their customers, the impact of a SEP owner's wrongful attainment of monopoly power is felt by consumers. Moreover, if hold-up behavior is allowed to continue

³⁷ See, e.g., *Muris* at 12 (“Despite disagreement on particular cases and on the underlying theory under which cases should proceed, there is widespread agreement on the importance of the issue and its suitability as an appropriate subject for antitrust enforcement”).

³⁸ See, e.g., *Broadcom*, 501 F.3d 297; *Apple Inc. v. Motorola Mobility, Inc.*, 2011 WL 7324582, at *13, *Apple Inc. v. Samsung Elecs. Co.*, 2011 WL 4948567 (ND. Cal. Oct. 18, 2011); *Research in Motion Ltd.*, 644 F. Supp. 2d at 728.

³⁹ See Joseph Kattan, FRAND Wars and Section 2, *Antitrust* 27, no. 3 (Summer 2013) at 32-34.

unchecked, we should expect that more SEP holders will employ such practices, hampering the success of the IoT.

B. Innovation Throughout the Value Chain Drives the Economy

Today's complex technology products involve innovations by multiple industry participants at different levels in the value chain. Companies can, and often are, *both* SEP holders and prospective licensees that manufacture standard-compliant products.⁴⁰ Accordingly, any suggestion that there are two separate camps—innovators and implementers—with “dueling interests” that are “always in tension” is mistaken. Also incorrect is the suggestion implicit in this false dichotomy that standard implementers are effectively free riders exploiting other companies' innovations without compensating them for their inventions.

Moreover, the assumption that only the upstream inventions that are contributed to standard-setting activities merit protection is also incorrect. A product can contain a multitude of technological innovations separate and apart from a given SEP. For example, different wireless access points may implement the same standard, but differ significantly relative to other features, such as throughput, antenna design, configuration and management, and interference management features that go beyond the standard. This differentiation explains why a large enterprise may spend hundreds of dollars for an enterprise-class access point that implements the same standard as a consumer access point that is available for less than 50 dollars at a consumer electronics retailer.

⁴⁰ E.g., Letter from 58 Signatories to Assistant Attorney General Makan Delrahim, United States Department of Justice (January 24, 2018).

It is pointless to argue whether consumers benefit more from innovations contributed by SEP licensors or innovations that differentiate products that implement standards. Just as SEP licensors deserve a fair return based on the value of the patented innovations they contribute, implementers of standards that innovate to create products consumers value deserve to enjoy the fruits of their own innovation and must not be compelled to divest value they have themselves created by paying super-competitive SEP licensing royalties. It would be unjust enrichment for SEP licensors to receive royalties based on the added value contributed by downstream innovators. For example, today's smartphones are computing and multimedia platforms, as well as communications tools. A typical smartphone includes an advanced microprocessor, a sophisticated graphics processor, flash memory, DRAM, location awareness technology, touch technology, voice recognition, high-definition still and video cameras, video and music replay, power management technology, and an advanced operating system. All of these technologies provide benefits to end users that are independent of the cellular technology that enables telephony connections. A holder of SEPs related to cellular technology thus should not be permitted to exercise its market power in such SEPs to extract unreasonable royalties based on the overall price of a smartphone.⁴¹ It is unfair and unreasonable for SEP licensors to tax the value created by others – value that is unrelated to anything claimed in the licensors' patents. Competition enforcers should not “pick and choose” between different innovators and should not privilege upstream patentees with licensing-based business models.

⁴¹ This point is illustrated by the court in *Microsoft Corp. v. Motorola, Inc.*, which highlighted testimony explaining that “a 1% royalty on a chip placed in an \$80,000.00 Audi A8 would be \$800.00, or about 267 times the retail price of the chip.” 2013 WL 2111217, at *95.

C. Enforcement of a Voluntary FRAND Commitment is Not “Compulsory Licensing”

Equating enforcement of voluntary commitments to license on FRAND terms with “compulsory licensing” is also incorrect. This assertion reflects a misunderstanding of the FRAND commitment. Compulsory licensing is the forced licensing by a government of patents that the patent holder does not wish to license.⁴² A patent holder that *voluntarily* contributes its intellectual property for use in a standard has made an irrevocable commitment to license based on SSO rules that, as noted previously, are designed to constrain the abuse of market power. In voluntary, industry-led standards development (such as the kind that characterizes hundreds of ANSI-accredited standards development organizations), patentees are free to decide not to make a FRAND commitment and thereby avoid the constraints that such commitment imposes on their subsequent ability not to license or to charge whatever the market will bear.⁴³ Patent holders that agree to participate in standards development and to commit their patents to FRAND licensing are aware that their decision has consequences, positive and negative, on their future licensing prospects. For example, as noted earlier, licensors may agree to the FRAND commitment because they seek access to a potentially large market for their patents from implementers of a successful standard. In exchange, however, they limit their ability to exclude implementers and agree not to seek unfair or unreasonable license terms such as tying SEPs to non-SEPs.

⁴² See, e.g., WTO Agreement on Trade-Related Aspects of Intellectual Property Rights, Article 31 (addressing the process for compulsory licensing – i.e., the conditions for use of the subject matter of a patent allowed by the law of a WTO member without the authorization of its right holder).

⁴³ See *Microsoft v. Motorola*, 696 F.3d at 885 (“Motorola could have withheld the [FRAND] promise at the price of having the ITU avoid its patents when setting standards, but chose not to.”).

Enforcement of that voluntary commitment is neither compulsory licensing nor a mandate that SEP holders assist their competitors. Rather, such enforcement promotes economic freedom and opportunity for all to compete on a level playing field based on their own innovations, price, and quality. Implementers of standards rely on the availability of SEP licenses on FRAND terms as they decide to make major investments to bring complex products to market, which contain innovations that often exceed the standardized technologies. In forcing SEP holders to uphold their end of the FRAND bargain, antitrust agencies are fostering competition and innovation at both the upstream and downstream level.

D. SSO Diversity Should be Valued, Not Threatened

The diversity of industry-led standard-setting organizations is an asset that distinguishes standards development in the United States from other countries and promotes U.S. economic growth. One aspect of that diversity is the different approaches SSOs take to the interplay between patented inventions and standardization. While some SSOs use FRAND licensing, other significant SSOs have chosen royalty-free (RF) licensing models as their default option. For example, CableLabs, responsible for cable broadband standards that hundreds of millions of Americans use to access the internet, requires its SEP holders to license essential patents on RF terms. The Bluetooth Special Interest Group and the USB Implementers Forum are two other examples of SSOs responsible for wildly successful standards that have adopted RF licensing models. Others, for example a leading software industry SSO known as OASIS, permit members of technical working groups to choose between FRAND and RF options. As membership organizations, SSOs may continually reevaluate their choice of IPR licensing models to choose the model that works best for their members and the fields of innovation in which they want to create standards. Absent anticompetitive conduct and effect, the U.S. government should not

discourage SSOs from clarifying IPR policies to provide greater transparency and predictability regarding patent licensing. To do otherwise would be to presume that the government is in a better position than industry participants to decide fundamental questions regarding how SSOs should govern themselves.

It would be very unfortunate, for example, if the USC speech were to be misunderstood as suggesting that innovative SSOs like the Institute of Electrical and Electronic Engineers Standards Association (“IEEE-SA”) should face antitrust scrutiny for clarifying their IPR policies in line with U.S. case law, the Department’s prior policy statements, and its February 2015 business review letter (“BRL”). The IEEE is the world’s largest technical professional organization with hundreds of thousands of members. The IEEE promulgates popular global standards such as Wi-Fi and Ethernet. Departing from the approach to SSO rules provided in the BRL threatens to harm U.S. innovation and U.S. economic leadership generated by IEEE and other SSOs with similar rules. The best test of whether an SSO has achieved rules that suit its members and the technological areas in which it creates standards is whether industry participants see it as a congenial place to create new standards. By that measure, IEEE-SA has thrived since instituting the recent update to its IPR Policy.⁴⁴

⁴⁴ See Konstantinos Karachalios. *“IEEE’s Continued Leadership in Standardization” IEEE-SA Document (2017)*, available at: <http://works.bepress.com/konstantinos-karachalios/1/>; IPLytics, *Empirical study on patenting and standardization activities at IEEE* (March 2017), available at <http://www.iptytics.com/general/ieee-active-patent-policy-change/>; [placeholder to add additional studies as available]

Some SEP holders, however, would prefer that SSO rules not be clarified and that FRAND commitments remain vague and opaque so that they can more freely tax standard implementers with no meaningful constraint.⁴⁵ Such SEP holders have pushed back against the IEEE policy clarifications, for example, arguing that those updates impose a “*mandatory* definition of Reasonable Rate under RAND” that “*must*” not include the value of the standard; “*must*” be set with reference to the smallest saleable patent practicing unit; “*must*” take into account the contributions made by other SEPs for the same standard; and may be calculated with reference to licenses not obtained under threat of an injunction.⁴⁶ These hyperbolic characterizations of the IEEE-SA’s policy are simply inaccurate.⁴⁷ As the Department’s BRL recognized, the IEEE-SA’s policy update “does *not* mandate any specific royalty calculation methodology or specific royalty rates.”⁴⁸ Accordingly, the Department concluded in its BRL that the policy is “consistent with U.S. law.”⁴⁹

The optional factors in the IEEE-SA Update that courts or arbitrators *may* consider are the very same factors that U.S. judges already have determined can be used to ensure that royalties SEP holders receive relate only to their inventions, and not the value of the standard or other unpatented features in complex technology products such as mobile phones, computers, or

⁴⁵ See, e.g., Bill Merritt (InterDigital), “Why We Disagree with the IEEE’s Patent Policy,” *eeTimes* (Mar. 27, 2015), available at https://www.eetimes.com/author.asp?doc_id=1326144.

⁴⁶ Roy E. Hoffinger, Qualcomm Incorporated, *The 2015 DOJ IEEE Business Review Letter: The Triumph of Industrial Policy Preferences Over Law and Evidence*, CPI Antitrust Chronicle (March 2015), at 7-8 (emphasis added).

⁴⁷ See IEEE Standards Board Bylaws, Section 6.1, Patent Definitions.

⁴⁸ Letter from Renata B. Hesse, Acting Assistant Attorney General, United States Department of Justice, to Michael A. Lindsay, Esq., Dorsey & Whitney, LLP (February 2, 2015) (“BRL”), at 8, 11, 12 (emphasis added).

⁴⁹ *Id.*

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tablets.⁵⁰ Furthermore, nothing mandates that an SEP holder participate in or make a FRAND commitment to IEEE. The fact that some companies have announced that they would not comply with the new IEEE policy⁵¹ demonstrates the non-coercive nature of the IEEE policy update. Given that no patent holder is required to participate in IEEE standardization activities, and that any patentee remains free to seek royalties on whichever terms it chooses simply by refraining from making a FRAND commitment, no basis for a finding of anticompetitive conduct or effect could exist.

Moreover, despite concerns – expressed exclusively by a small handful of companies that opposed the updated policies and their advocates⁵² – that IEEE was “thrown into a state of uncertainty” and that the “the market [would] collapse”⁵³ as a result of its policy update, IEEE is thriving today. IPLytics, an independent market intelligence company, undertook empirical analyses of the IEEE’s work since 2015 and determined that “the data indicates that contributions to IEEE standards, and technical work within IEEE working groups, continues apace.”⁵⁴ Specifically, IPLytics made the following findings:

⁵⁰ See, e.g., *Ericsson Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201 (Fed. Cir. 2014); *VirnetX, Inc. v. Cisco Systems, Inc.*, 767 F.3d 1308 (Fed. Cir. 2014).

⁵¹ See Richard A. Epstein & Kayvan B. Noroozi, *Why Incentives for ‘Patent Holdout’ Threaten to Dismantle FRAND, and Why It Matters*, 32 BERKELEY TECH. L. J. (forthcoming) at 28.

⁵² E.g., WiseHarbor (see <http://www.ipladership.org/organizations/wiseharbor>)

⁵³ *Id.*

⁵⁴ IPLytics, *Empirical study on patenting and standardization activities at IEEE*, IPLytics (March 2017), at 1 (emphasis added).

(Cont’d on next page)

- “IEEE’s receipt of patent declarations since March 2015 are largely in line with historical precedent, and indicate a particularly active declaration process shortly after completion of the Patent Policy updates (*i.e.*, there were a large number of declarations submitted subject to the terms of the new Patent Policy shortly after that policy was adopted);
- Standardization work at IEEE has continued to move forward in line with work levels prior to the IEEE IPR Policy text updates; and
- New standardization work at IEEE has been at its highest levels ever since the IPR Policy text updates were completed,⁵⁵

IPlytics concludes “[b]ased on our review of the available facts, and by many measures, IEEE remains as strong, or stronger, than it has ever been.”⁵⁶

In summary, the Department’s position advanced in its BRL regarding IEEE’s policy revisions or update makes sense because it preserves SSO diversity and the benefits it produces. The BRL states: “[i]t is not the Department’s role to assess whether the IEEE’s policy choices are right for IEEE . . . SSOs develop and adjust patent policies to best meet their particular needs. It is unlikely there is a one-size-fits all approach for all SSOs, and indeed, variation among SSOs’ patent policies could be beneficial to the overall standard-setting process. Other SSOs, therefore, may decide to implement patent policies that differ from the Update.”⁵⁷

⁵⁵ *Id.*

⁵⁶ *Id.* at 15.

⁵⁷ BRL at 1-2.

Conclusion

Antitrust law has an important role to play in addressing the problem of hold-up by SEP holders. Breaches of FRAND commitments allow SEP holders to exercise unearned market power to the detriment of entire industries and our economy. Competition enforcement agencies, including the Department, therefore can and should continue down the path established by their predecessors in addressing cases of significant FRAND violations that harm competition and the consumers. And SSOs should be allowed to continue to craft rules and policies that ensure the benefits of standardization while reducing the risks of patent hold-up. Without a balanced SEP licensing environment, countless stakeholders from across sectors including small businesses will be locked out of new markets emerging through convergence, jeopardizing the growth of the IoT and its ability to introduce new efficiencies across consumer and enterprise contexts.

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