Nos. 18-1363, 18-1380, 18-1382, 18-1732

In the United States Court of Appeals for the Federal Circuit

TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED, TCT MOBILE LIMITED, TCT MOBILE (US) INC.,
Plaintiffs-Appellees
v.
TELEFONAKTIEBOLAGET LM ERICSSON, ERICSSON INC.,
Defendants-Appellants

On Appeal from the United States District Court for the Central District of California (8:14-CV-00341-JVS-DFM) (Hon. James V. Selna, J.)

ERICSSON INC., TELEFONAKTIEBOLAGET LM ERICSSON,
Plaintiffs-Appellants
v.
TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED, TCT MOBILE LIMITED, TCT MOBILE (US) INC.,
Defendants-Appellees

On Appeal from the United States District Court for the Central District of California (2:15-CV-02370-JVS-DFM) (Hon. James V. Selna, J.)

BRIEF OF AMICI CURIAE HIGH TECH INVENTORS ALLIANCE, ALLIANCE OF AUTOMOBILE MANUFACTURERS, INC. GOOGLE LLC, HEWLETT PACKARD ENTERPRISE COMPANY & HP INC. IN SUPPORT OF APPELLEES AND AFFIRMANCE

KEVIN HARDY
SAMUEL BRYANT DAVIDOFF
WILLIAMS & CONNOLLY LLP
725 Twelfth Street, N.W.
Washington, DC 20005
(202) 434-5000

CERTIFICATE OF INTEREST

Pursuant to Federal Circuit Rule 47.4, undersigned counsel for amici curiae certifies the following:

1. The full name of the amici curiae represented by me in this case are High Tech Inventors Alliance, Alliance of Automobile Manufacturers, Inc., Google LLC, Hewlett Packard Enterprise Company & HP Inc.

2. The names of the real parties in interest represented by me are the same.

3. No publicly traded company owns 10% or more of any stock in the High Tech Inventors Alliance, the Alliance of Automobile Manufacturers, Inc., Hewlett Packard Enterprise Company, or HP, Inc. Google LLC is a wholly owned subsidiary of XXVI Holdings Inc., which is a wholly owned subsidiary of Alphabet Inc., a publicly traded company; no publicly traded company owns 10% or more of Alphabet Inc.'s stock.

4. Amici curiae did not participate in proceedings in the lower tribunals. The following attorneys have appeared or are expected to appear in this Court on behalf of the amici curiae: Kevin Hardy and Samuel Bryant Davidoff, both of Williams & Connolly LLP, 725 Twelfth Street, N.W., Washington, DC 20005.

5. There are no cases known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal.

/s/ Kevin Hardy
KEVIN HARDY

NOVEMBER 8, 2018

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INTEREST OF AMICI CURIAE

The High Tech Inventors Alliance ("HTIA") is dedicated to advancing a patent system that promotes and protects real investments in technologies and American jobs.[1] Collectively, HTIA's members employ nearly 500,000 U.S. employees, spent $63 billion last year alone on research and development, and hold more than 115,000 U.S. patents.[2] Amici Google Inc., Hewlett Packard Enterprise Company, and HP Inc. are companies that develop, manufacture, and sell modern technologies, including smartphones, laptops, servers, access points, operating systems, online platforms, and internet-connected devices, as well as the software and services that support them. Similarly, the Alliance of Automobile Manufacturers, Inc., consists of members who develop, manufacture, and sell vehicles equipped with, among other things, internet-connected communications and navigation technologies.[3]

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[1] Amici affirm that no counsel for a party authored this brief in whole or part; no party or counsel for a party made a monetary contribution intended to fund its preparation or submission; and no person other than amici curiae, its members, or its counsel made a monetary contribution intended to fund its preparation or submission. All parties have consented to the filing of this brief.

[2] *See* High Tech Inventors Alliance, http://www.hightechinventors.com/ (last visited Nov. 8, 2018). The eight HTIA members are Adobe, Amazon, Cisco, Dell, Google, Intel, Oracle, and Salesforce.

[3] The members of the Alliance of Automobile Manufacturers, Inc. are the BMW Group; FCA US LLC; Ford Motor Company; General Motors Company; Jaguar Land Rover; Mazda North American Operations; Mercedes-Benz USA; Mitsubishi Motors North America, Inc.; Porsche Cars North

Multiple amici (or their members) participate in standard setting organizations and are both licensors and licensees of standard essential patents ("SEPs"). The panel's decision in this case regarding the appropriate methodology by which a court may determine fair, reasonable, and non-discriminatory ("FRAND") royalty rates for portfolios of SEPs will have significant ramifications for amici and the technology industry more generally.

INTRODUCTION

This case presents the Court's first opportunity to evaluate the methods of analysis federal courts may use to set FRAND rates for large portfolios of SEPs. Amici urge this Court to affirm the District Court's decision and to endorse the use of top-down analysis as one acceptable methodology for deriving portfolio FRAND rates. Top-down analysis calculates the reasonable royalty rate for a particular portfolio of SEPs by identifying a reasonable cumulative royalty for all patents covering the relevant standard and then apportioning that cumulative royalty according to the share of the relevant standard covered by the patents in the portfolio at issue. By taking the entire standard into account, top-down analysis proactively ameliorates the threat of excessive cumulative royalty rates that may occur when individual

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America, Inc.; Toyota; Volkswagen Group of America, Inc.; and Volvo Cars USA, LLC.

patent holders' rates are set without consideration for all the other SEPs that may read on the standard. Top-down analysis allows the estimation of FRAND rates for large portfolios without the cumbersome, often impossible, exercise of royalty analysis on a patent-by-patent basis, and without the need to analyze comparable license agreements which are often unavailable in real-world license negotiations due to confidentiality restrictions. It is built upon the principle set forth in this Court's precedents of apportioning royalties among different patents (and portfolios) that are essential to the same standard. And significantly, top-down analysis is an important tool used by parties in *actual* licensing negotiations over FRAND rates.

Given this, it was eminently reasonable for the District Court to utilize top-down analysis in setting FRAND portfolio rates under this Court's hypothetical negotiation standard. To be sure, the specific application of a top-down analysis may vary from case to case, and there may be cases or circumstances in which a court determines it is not appropriate. But courts should have flexibility to use this methodology when it is helpful and consistent with the evidence, as the District Court concluded it was in this case. Placing rigid limits on the use of top-down analysis, as appellant proposes, has no theoretical basis, and a pronouncement by this Court endorsing those limitations would stymie and distort the productive use of top-down analysis in real-world negotiations.

ARGUMENT

I. Licenses to SEP Portfolios Must Be on FRAND Terms and Conditions.

Many of today's most popular and useful consumer electronics require compatibility with devices, components, or infrastructure manufactured by multiple companies. Standard setting organizations develop common technical standards to facilitate this compatibility and to allow for the widespread adoption and interoperability of various consumer products.[4] Typically, standard-setting is a collaborative process, with many companies contributing technology to and otherwise participating in the development of a given standard.[5]

Once a particular standard has been widely adopted, adherence to the standard becomes effectively mandatory for a commercially viable device, and any product that complies with that standard must therefore practice the patented technology of multiple patent holders whose inventions are incorporated into that standard.[6] The volume of practiced patents can add up quick-

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[4] *See, e.g.*, U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Enforcement & Intellectual Property Rights: Promoting Innovation & Competition 33 (2007), ("2007 DOJ & FTC Report").

[5] *Id.*

[6] Often it is not clear—to manufacturers *or* patent owners—precisely which patents are practiced when implementing standardized technology because standard setting organizations generally do not determine which patents actually are essential to the standard.

ly: many standards, including wireless and telecommunications standards, are covered by a vast number (thousands or tens of thousands) of SEPs held by many companies. *See* District Ct. Op. at 27–28 [Appx000053–54]. A single company may claim hundreds, if not thousands, of patents to be essential to a standard or set of standards. In this case, for example, Ericsson, asserted that it owns over 190 patent *families* essential to the 2G, 3G, and/or 4G wireless standards used by all modern mobile phones, with each family containing multiple patents and each patent, multiple claims. District Ct. Op. at 33 [Appx000059]. Moreover, many modern devices incorporate a broad range of technology, meaning that a single product must implement numerous royalty-bearing standards. A smartphone, for example, likely implements multiple telecommunications standards (4G, 3G, and 2G), as well as Wi-Fi and NFC standards and audio- and video-coding standards.

In an effort to mitigate potential anti-competitive effects that may arise in an environment where patent holders, through the standard-setting process, collaborate on which patented technologies will and will not be included in a standard, many standard setting organizations request that patent holders commit that they will license patents declared essential to a standard on FRAND terms.[7] FRAND terms are designed to compensate patent owners

[7] *See, e.g.*, European Telecommunications Standards Institute Intellectual Property Rights Policy ¶ 6.1, https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf. Some standard setting organizations refer only to reasonable and

appropriately for their inventions and incentivize continuing innovation, while ensuring that rates reflect actual technological contributions and allow for widespread adoption of the standard. *See, e.g.*, *In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11 C 9308, 2013 WL 5593609, at *10–11 (N.D. Ill. Oct. 3, 2013); *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *12 (W.D. Wash. Apr. 25, 2013). As this Court recognizes, applying its general "reasonable royalty" principles, FRAND rates "must be apportioned to the value of the patented invention." *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1232 (Fed. Cir. 2014). Accordingly, they may not capture the value of any "unpatented features reflected in the standard," or any "value added by the standard's adoption of the patented technology." *Id.*; *see also Commonwealth Sci. & Indus. Research Organisation v. Cisco Sys., Inc.*, 809 F.3d 1295, 1305 (Fed. Cir. 2015).

When multiple patent holders own patents essential to a standard, and a given device incorporates multiple standardized technologies, the aggregate royalty burden can become excessive if patent holders are able to obtain royalties in excess of FRAND. *See, e.g.*, *Innovatio*, 2013 WL 5593609, at *9 (recognizing that the "cumulative royalty payments to all standard-essential

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non-discriminatory terms ("RAND"), but U.S. courts have interpreted the two commitments as essentially synonymous. *See Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at *12 n.7 (W.D. Wash. Apr. 25, 2013).

patent holders can quickly become excessive and discourage adoption of the standard"). This concern, known as "royalty stacking," can ultimately threaten the ability of manufacturers to bring innovative, commercially viable devices to market, even if the "excess" may appear at first blush to be insubstantial for a particular individual patent and rate.[8]

Excessive royalty rates for standardized technology can arise when parties in a particular bilateral negotiation over rates for a specific portfolio of SEPs do not take into account the full landscape of other SEP holders that may eventually demand royalties for SEPs covering the same standard. For example, consider a new entrant in the smartphone market approached by a holder of patents essential to the 4G wireless standard who demands a 0.5% royalty for its portfolio of SEPs.[9] The smartphone manufacturer may find that rate—standing alone—economically tolerable and might be willing to agree to it without extensive diligence, negotiation, or litigation. If, however, this manufacturer does not account for the fact that dozens of other SEP

[8] *See, e.g.*, Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 Tex. L. Rev. 1991, 1993, 2010–17 (2007); Gregory K. Leonard & Mario A. Lopez, *Determining RAND Royalty Rates for Standard-Essential Patents*, 29 Antitrust 86, 87 (2014).

[9] In the District Court, the parties agreed to base royalties on the price of the entire end-user device, e.g., the price of a smartphone. Whether that was the appropriate royalty base is not an issue before the Court and so this brief does not address that question.

holders may legitimately lay claim to their own rates for practicing the same standard, that manufacturer will quickly find itself besieged by further (individually tolerable) demands for licenses of 0.5%, or more—demands that decimate its hopes for having a commercially viable product.[10] In other words, efforts to negotiate or set rates in isolation, without reference to the claims of other holders of patents essential to the same standard, can quickly push royalty rates beyond reasonable bounds.[11]

Rates exceeding FRAND may also result from what is referred to as "hold-up." If a patent is essential to a standard, all parties who manufacture devices that implement that standard must practice the patent: they are "locked in." Absent an enforceable FRAND commitment, this gives the pa-

[10] While this case involves the 2G, 3G, and 4G LTE standards, similar issues arise, and are likely to continue to arise, with respect to other standards both within and beyond the wireless communications space. In the telecommunications context, patent-holders already have begun announcing royalty rates for 5G, the next generation wireless telecommunications standard. *See, e.g.*, Qualcomm 5G NR Royalty Terms Statement, https://www.qualcomm.com/media/documents/files /qualcomm-5g-nr-royalty-terms-statement.pdf (Nov. 19, 2017) (announcing royalty rate for multi-mode handset of 3.25% of selling price).

[11] *See* Jason R. Bartlett & Jorge L. Contreras, *Rationalizing FRAND Royalties: Can Interpleader Save the Internet of Things*, 36 Rev. Litig. 285, 295–96 (2017) (explaining that combining the rates in five published decisions on Wi-Fi SEPs, covering thirty-five adjudicated patents, would account for 4.5% of a hypothetical fifty-dollar router—suggesting that an aggregate royalty rate for 3000 essential Wi-Fi patents would be orders of magnitude larger).

tent holder leverage to extract royalty rates not justified by its technological contribution. *See, e.g.*, *D-Link*, 773 F.3d at 1209; *In re Innovatio IP Ventures, LLC Patent Litig.*, 956 F. Supp. 2d 925, 932 (N.D. Ill. 2013); 2007 DOJ & FTC Report at 37–38; Fed. Trade Comm'n, The Evolving IP Marketplace: Aligning Patent Notice & Remedies with Competition, 22 (2011).[12] This structural risk is particularly salient in the context of an industry standard, where a community has committed to one set of technologies at the exclusion of would-be alternatives.[13]

The involvement of federal courts in affirmative FRAND rate-setting is a relatively new development, and this Court has not yet had occasion to evaluate the task the District Court faced: setting FRAND rates for an entire portfolio of declared SEPs where no individual patents were fully adjudicated.

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[12] Lemley & Shapiro, *supra* note 8, at 1995–2008 (modeling the impact of a threatened injunction on negotiated royalty rates); Joseph Farrell et al., *Standard Setting, Patents, and Hold-Up*, 74 Antitrust L.J. 603 (2007) (bad behavior not necessary, though may be rewarded).

[13] Courts, regulators, and academics have recognized that hold-up is a real world, not purely theoretical, concern. *See, e.g.*, *Microsoft*, 2013 WL 5373179, at *7 (stating "that hold up took place in this case"); *Innovatio*, 2013 WL 5593609, at *9 ("[T]he court concludes that patent hold-up is a substantial problem that RAND is designed to prevent."); Terrell McSweeny, Commissioner, U.S. Fed. Trade Comm'n, Holding the Line on Patent Holdup: Why Antitrust Enforcement Matters (Mar. 21, 2018), https://www.ftc.gov/public-statements/2018/03/holding-line-patent-holdup-why-antitrust-enforcement-matters; Lemley & Shapiro, *supra* note 8, at 2009.

By the plain meaning of the term, a FRAND rate must be "reasonable." A "reasonable royalty" determination, for SEPs as for all patents, is grounded in the hypothetical negotiation framework that reflects what a willing licensee and a willing licensor would have agreed to for the patents at issue if they had succeeded in negotiating a rate. *See Minks v. Polaris Indus., Inc.*, 546 F.3d 1364, 1372, (Fed. Cir. 2008); *see also, e.g.*, *Microsoft*, 2013 WL 2111217, at *3, *14–15 (applying hypothetical negotiation framework in FRAND context); *Innovatio*, 2013 WL 5593609, at *5 (same). Accordingly, any analysis of a "reasonable" rate for a patent portfolio should—indeed, must—account for what potential licensees and licensors negotiating over rates in the real world actually do in similar situations.

II. Real-World SEP Licensing Is Complex and Difficult.

The licensing of SEPs covering major industry-wide standards is different in several respects from garden-variety patent licensing. These differences are relevant to an evaluation of the proper framework for constructing a "hypothetical negotiation" in a judicial rate-setting determination.

A. Multiple, Portfolio-Wide Licenses Are Common.

SEP licensees and licensors often negotiate portfolio-wide agreements, as opposed to successive licenses for each patent allegedly essential to a given standard. This is because product manufacturers practice the standardized technology as a whole, rather than electing to implement individual pa-

tents. Implementers are not, for the most part, picking and choosing between different technologies within the standard (let alone specific patents that cover these technologies). Rather, by choosing to follow the industry standard, the implementer automatically finds itself practicing an undifferentiated group of thousands of patents owned by potentially hundreds of patent holders. Thus, parties often agree to conduct negotiations for all of a particular patent holder's SEPs for a given standard rather than to enter into licenses on a patent-by-patent basis.[14]

For similar reasons, implementers of standards are likely to enter into multiple portfolio-wide licenses for SEPs with multiple patent holders. A smartphone manufacturer, for example, does not typically have the option of licensing one patent holder's portfolio of cellular SEPs and not another's. By practicing the standard as a whole, device manufacturers necessarily will be practicing the SEPs of a diverse group of patent holders, many of whom may potentially seek royalties. Thus, any agreement that a product manufacturer reaches will be made against the backdrop of other rates that must be paid or that may be demanded in the future. If that potential cumulative rate be-

[14] To be sure, parties often negotiate over the technical merits of specific patents, including evaluating whether the patents claimed by the patent holder to be SEPs actually *are* essential to the standard. However, in such circumstances, the parties are still generally looking to reach a license for all relevant and valid SEPs, not a piecemeal license for only some of them.

comes excessive, product manufacturers will have fewer incentives to incorporate the standard, innovate themselves, or even produce the device in the first place. *See, e.g.*, *Innovatio*, 2013 WL 5593609, at *9 (recounting evidence of Broadcom's concerns about hold-up); Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 Berkeley Tech. L.J. 1135, 1149–50 (2013). And although individual licensors often seek to maximize the royalties they can obtain in specific one-on-one negotiations, licensors as a class benefit from a reasonable distribution of the total royalty burden for a product, which would encourage widespread adoption of the standard.[15]

Accordingly, SEP licensing in the real world does not, and cannot, narrowly focus on the specific patents or even specific patent holders. Responsible and sophisticated licensors and licensees negotiate with the following understanding: because an implementer practices the entire standard, any individual royalty rate negotiated ultimately must be consistent with a rea-

[15] Appellant has expressly noted this fact, stating to the Federal Trade Commission that "if the royalty levels for a standard are cumulatively too high, they will adversely impact and may negate the economic benefits of standardization. It is, therefore, important when negotiating royalty rates that individual licensors take into account the cumulative royalty levels payable by licensees." *See* Ericsson's Response to FTC Request for Comments, Standard Setting Workshop at 6, https://www.ftc.gov/sites/default/files/documents/public_comments/request-comments-and-announcement-workshop-standard-setting-issues-project-no.p111204-00049%C2%A0/00049-80189.pdf.

sonable cumulative royalty rate for the entire standard.

B. Incomplete Information Is the Norm.

Real-world negotiations for SEP licenses are often conducted with imperfect information. In particular, parties frequently lack detailed information about the quality of their counter-parties' full patent portfolios or their counter-parties' relevant licensing history.

Because SEP licensing negotiations typically involve large numbers of potential SEPs, it would be far too costly and time-intensive to expect licensees—including new entrants with little or no prior experience with the technology at issue—to conduct a thorough evaluation of the validity, infringement, enforceability, technical importance, and value over possible alternatives for each and every patent in every portfolio that might be asserted against the standard, as would be needed to assess royalty rates using a "bottom-up" analysis. This kind of patent-by-patent rate analysis is not commercially reasonable for a single large portfolio, let alone the portfolios of multiple patent holders, and is not typically done by parties in the real world.

Even licensors may try to avoid the type of complete evaluation of each patent in their own portfolio that would be called for if they sought to determine rates on a patent-by-patent basis. In this case, for example, Appellant submits that it spent "50-80 hours" charting essentiality for certain patent

families. Ericsson Br. at 48 (process required 50–80 hours per family "for which [Appellant] had produced an approved claim chart"). But even when a patent holder charts the claimed essentiality of patents it has selected, that limited analysis does not address validity, importance to the standard, improvement over then-existing alternatives, and other factors that may be important when determining the appropriate royalty (if any) for an individual patent.[16]

Real-world negotiations also generally are devoid of clear information regarding the licensor's or licensee's agreements with other companies, which tend to be governed by strict confidentiality obligations. *See Innovatio*, 2013 WL 5593609, at *39 (observing that "RAND licenses are relatively rare in the marketplace"). For example, it is not unusual in a licensing negotiation for a licensor to have an extensive licensing history that the licensee has no ability to access, let alone evaluate.

Even where licenses, or information about licenses, are available, those licenses may not be easily applicable to the negotiation at hand as licenses vary across many dimensions. One agreement may be a world-wide cross-

[16] Negotiations sometimes involve the analysis of select patents identified by the licensor. This is often unsatisfactory as patent holders have incentives to identify patents that are more likely than the portfolio average to be valid, essential, and infringed. Thus, for example, two patent holders with disparately strong patent portfolios may nevertheless both be able to identify equally strong sets of "representative" patents.

license that bundles SEPs with non-SEPs and is payable through a lump sum, while another license may address only the use of SEPs in a specific geographic region based on a running royalty rate on a particular royalty base. This situation is even more complicated when dealing with cross-licenses that reflect only "net" payments or rates. To even attempt an apples-to-apples comparison between existing license rates and rates offered during negotiations, all such rates must be "unpacked" into one-way royalty rates that cover common ground. This process involves its own complexities, proxies, and assumptions. *See, e.g.*, District Ct. Op. at 53–88 [Appx000079–114] (determining "comparable" firms and "unpacking" licenses with widely-divergent provisions, such as a global cross-license for 2G and 3G SEPs involving a one-time lump sum payment (Apple, Appx000101–102) and a global cross-license for 2G, 3G, and 4G SEPs, excluding CDMA, involving an upfront lump sum, annual payments that may be calculated either through lump sums or per unit royalties, and a commitment to purchase certain products manufactured by one party (Samsung, Appx000104–105)). This can lead to significant disagreements about which licenses are truly comparable and makes it difficult or impossible to rely on licenses as the only, or even the primary, input when negotiating a rate in the real world. Moreover, existing license rates may reflect hold-up, the very concern FRAND rates are designed to avoid.[17]

[17] This is particularly true for licenses negotiated at times or in jurisdictions where it appears or appeared possible for patent holders to secure an

C. Reasonable Proxies of Patent Value Are Often Useful.

In the absence of complete information, parties in portfolio license negotiations may rely on proxies for patent value based on publicly-available information. For example, negotiating parties often rely on publicly- or commercially-available information about portfolio size and strength and the products implementing those portfolios. This may include industry reports, such as patent landscape studies[18] and reports on market shares and sales volume,[19] as well as numerical information about the portfolio being licensed. For example, a negotiating party's position on the strength of a portfolio may be informed, to greater or lesser degrees, by factors such as the patent holder's share of patents declared essential to a standard; the jurisdictions in which patents are issued; and whether the patent is alleged to be essential to a more or less important or innovative portion of the standard. Parties may

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injunction without first offering a FRAND rate. *See* U.S. Int'l Trade Comm'n, Inv. No. 337-TA-745, Third Party United States FTC's Statement on Public Interest 3–4 (2012), https://www.ftc.gov/sites/default/files/documents/advocacy_documents/ ftc-comment-united-states-international-trade-commission-concerning-certain-wireless-communication/1206ftcwirelesscom.pdf.

[18] *See, e.g.*, iRunway, *Patent & Landscape Analysis of 4G-LTE Technology* (2012), https://www.i-runway.com/images/pdf/iRunway%20-%20Patent%20&%20Landscape%20Analysis%20of%204G-LTE.pdf.

[19] Industry participants have access to numerous reports and market research tools of this nature, often for a fee. *See, e.g.*, Statista, https://www.statista.com/topics/840/smartphones/ (last visited Nov. 8, 2018).

also consider publicly-available information about individual and cumulative royalty rates that is released by parties or patent pools[20] or revealed through litigation.

III. Top-Down Analysis Is Used in Actual Negotiations Because It Provides a Predictable Approach to FRAND Licensing Using Available Information.

In view of the real-world constraints and practical limitations faced by parties in SEP licensing negotiations, top-down analysis is frequently used in actual licensing negotiations as an efficient and practical mechanism for determining FRAND rates. That is because the steps of the top-down analysis are well suited to the actual concerns and limitations of parties in SEP negotiations, who seek predictable and consistent ways to value portfolios that account for the overall cumulative royalty burden from licensing the standard at issue from multiple patent holders.

The first step of top-down analysis looks to a reasonable cumulative aggregate royalty for *all* patents essential to the standard at issue. This is an important and principled starting point because, as explained above, it is ultimately the cumulative royalty for a standard that is vital to prospective licensees. Licensees are not interested only in the royalties they pay for a particular SEP or to a particular SEP holder, any more than they are inter-

[20] *See, e.g.*, *LTE License Fees*, Via Licensing, http://www.via-corp.com/us/en/licensing/lte/licensefees.html (last visited Nov. 8, 2018).

ested in incompletely implementing relevant parts of a standard. What will be relevant to the profitability of the licensee's device, and therefore to the decisions regarding investments necessary to produce that device, is the *total* royalties the licensee must pay to practice the relevant standard. A method for deriving royalty rates for particular portfolios that is grounded in a reasonable aggregate royalty—as is top-down analysis—reflects this important reality. Moreover, an appropriate aggregate rate can be determined using available information, including public statements contributors to the standard make about rates as well as industry participants' knowledge regarding the contribution the standardized technology—as a whole—makes to the product or products at issue.

The second step in the top-down analysis, attributing a percentage of aggregate royalty according to the value of the patented technology covered by the portfolio at issue, also reflects how licensing parties often think about cost allocation. Product manufacturers implementing standardized technologies can typically determine a given portfolio's level of contribution to the standard. Sophisticated licensees know that distributing the total amount they can pay for the standard in accordance with each portfolio's technological contribution is necessary in order to retain sufficient resources to compensate the other patent-holders whose technologies contribute to that standard. And similarly, a reasonable and fair division of total royalties for a

standard is fair to licensors, as it promotes broad adoption of the standard and ensures that all licensors are justly compensated for their innovations, not just those who are quickest to the negotiating table.

The second step of top-down is also consistent with the information that is more readily available to parties negotiating SEP portfolio licenses. By dividing up a cumulative aggregate royalty rate, top-down analysis avoids the need for an arduous "bottom-up" assessment of the appropriate individual rate for each patent. It also does not necessarily depend on an assessment of comparable licenses, which may be unavailable or unknown to the parties. Instead, top-down analysis takes available information about the value of particular patents, like the information identified in the previous section regarding the relative size, strength, quality, and importance of the portfolio, and then uses that to calculate the royalty share of each SEP portfolio.

Finally, both steps of the top-down analysis accord with this Court's fundamental principles about what value a reasonable royalty properly should and should not capture. Specifically, apportioning an aggregate rate across the patents and portfolios comprising the standard ensures that the resulting rate of the portfolio at issue reflects the contribution of *that portfolio's* inventive technology to the overall standardized technology, and therefore to the product. *See Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1232–33 (Fed. Cir. 2014).

Not surprisingly, top-down analysis is frequently used in licensing negotiations to reach portfolio-wide SEP licensing agreements. That is not only the experience of these amici, but it is also consistent with the views of other patent holders and manufacturers who have advocated starting with an aggregate royalty rate appropriate for the standard as a whole, and then distributing it amongst patent holders.[21] Indeed, as the court below noted, even Appellant has previously embraced the concept of apportioning aggregate royalty rates when negotiating licenses. District Ct. Op. at 20–22 [Appx000046–48].

IV. Appellant's Proposed Limitations on the Use of Top-Down Analysis Are Arbitrary and Unreasonable.

The strong analytical foundation for the top-down approach makes it a valuable tool for courts engaged in FRAND rate-setting proceedings. Indeed, even Appellant agrees that top-down analysis "can be useful." Erics-

[21] *See* Press Release, Industry leaders NTT DoCoMo, Ericsson, Nokia and Siemens, and Japanese manufacturers reach a mutual understanding to support modest royalty rates for the W-CDMA technology worldwide (Nov. 6, 2002), *available at* https://www.sec.gov/Archives/edgar/data/924613/000110465902006769/j6199_6k.htm; Press Release, Wireless Industry Leaders commit to framework for LTE technology IPR licensing, (Apr. 14, 2008), https://www.ericsson.com/en/press-releases/2008/4/wireless-industry-leaders-commit-to-framework-for-lte-technology-ipr-licensing; Letter from Apple Inc. to Canadian Competition Bureau (Aug. 10, 2015), http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/Apple-IPEG-2015.pdf/$file/Apple-IPEG-2015.pdf.

son Br. at 46. Appellant attempts, however, to cabin the use of top-down far too narrowly—to be relied upon only when one of two prerequisites are fulfilled: (a) there is "proof of royalty stacking" or (b) "no comparable licenses exist." *Id.* But those artificial constraints ignore the realities of SEP portfolio licensing and have no basis in the hypothetical negotiation framework.

Appellant's proffered royalty stacking prerequisite would apparently require evidence of overcompensation within the product or standard at issue before performing a top down analysis. This would mean that a top-down approach would only be used to limit the rates available in later licensing agreements, if first-movers already have secured inflated rates. That is closing the barn door after the horse is out. A key benefit of a top down analysis is that it allows for the setting of rates for individual SEP portfolios (or patents) by *prospectively* taking account of the fact that, ultimately, total royalties for a given standard must be apportioned across *all* SEP holders. Thus, the utility of top-down is, among other things, its ability to help ensure that cumulative rates do not exceed reasonable levels and are fairly apportioned. It offers a proactive way to estimate reasonable rates and avoid excessive stacking from the outset.[22] Appellant's proposal, by contrast, would turn it

[22] In *Ericsson v. D-Link Systems, Inc.*, this Court rejected D-Link's request that the jury be instructed on the threats of royalty stacking or hold-up when setting a FRAND rate for specific patents, holding that such an instruction need not be given absent evidence on the record of hold-up or royalty stacking as to the patents at issue. 773 F.3d 1201, 1234 (Fed. Cir. 2014).

into a tool for belatedly, and unfairly, reducing the compensation of "late" licensors.

The same reasoning undercuts Appellant's position that the top-down approach becomes useful in circumstances when "no comparable licenses exist," but otherwise should not be used. *Id.* The top-down approach's consistency with the hypothetical negotiation framework and reasonable royalty principles is independent of the existence of comparable licenses, and Appellant offers no argument or evidence to the contrary. In contrast, heavy reliance on comparable licenses as the only starting point to determine FRAND rates requires information about license rates and agreement structures that parties generally do not have in licensing negotiations. There is no principled basis to disregard evidence that parties negotiating licenses in the real world rely upon in favor of a focus on information unavailable to prospective licensees.

Moreover, any conclusion that "comparable" licenses must be the primary (or only) touchpoint for a Court-determined FRAND rate, as Ericsson suggests, will further distort real world license negotiations and impede compromise, as both sides will know that any agreement will have an out-

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But that decision did not address, let alone reject, consideration of those structural concerns and how they may inform the hypothetical negotiation framework when determining an appropriate method for setting a FRAND rate for an SEP portfolio.

sized effect on future licenses. For any given license, the licensor will have an incentive to push for higher-than-otherwise-necessary rates, because it knows that a higher rate on the first license will form the basis for higher rates on subsequent licenses. The licensee will have precisely the opposite incentive. These externalities will distort—and may eliminate—the range of possible rates that both parties would otherwise find acceptable for the particular agreement in question. And from a litigation perspective, any direction from this Court that license rates *must* be analyzed as a threshold step would create the risk that lower courts will stretch to find "comparable" licenses even when none actually arise from similar circumstances. There is no theoretical or practical justification for an artificial limitation of this sort.

V. Courts Should Have Discretion To Apply Top-Down Analysis in a Practical and Flexible Manner.

Consistent with the overarching principle that a reasonable royalty rate should reflect the rate willing parties would reach in a hypothetical negotiation, the method through which a court determines a FRAND rate must account for the realities and constraints present in portfolio licensing. Where, as here, both parties are seeking a court-determined portfolio royalty rate, the type of evidence offered will be different from the evidence offered in typical patent damages cases. Courts, like parties, often will not have perfect or complete information, but should have flexibility to assess evidence proffered in a given case in ways similar to how parties conduct real world

negotiations. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1315 (Fed. Cir. 2014) ("This court has also recognized that estimating a 'reasonable royalty' is not an exact science."), *overruled on other grounds by Williamson v. Citrix Online*, LLC, 792 F.3d 1339 (Fed. Cir. 2015). Using top-down analysis, a court tasked with determining a FRAND rate can make assessments regarding aggregate royalty rates and apportionment based on technological contribution using the same types of information parties would use when negotiating in the normal course of business. Consistent use of top-down analysis by courts would allow new market entrants to gain visibility into a predictable and available process by which rates are determined. This, in turn, will facilitate budgeting and mitigate disparities in information and bargaining power between the parties.

Top-down analysis also accounts for the different legal context in which portfolio rate-setting takes place. There may be more uncertainty regarding essentiality, validity, and infringement of any individual patent in the FRAND-portfolio-rate-setting context than there is in a patent damages case where those factors have been adjudicated. In the context of patent damages determinations—where damages are awarded only after a patent has been determined to be valid and infringed—a court's hypothetical negotiation then assumes the asserted patent claims are valid and infringed. A licensee, in other words, does not benefit from an uncertainty discount after the court

has resolved that uncertainty in the licensor's favor. *See In re Innovatio IP Ventures, LLC Patent Litig.*, No. 11 C 9308, 2013 WL 5593609, at *7 (N.D. Ill. Oct. 3, 2013).

But when a court determines a FRAND rate for an entire portfolio—i.e., where the patents declared essential have not yet been and may never be adjudicated valid, essential, and infringed—the court's hypothetical negotiation can and should hew more closely to the considerations that would be applicable in an *actual* negotiation regarding a portfolio license. The uncertainty that exists between the negotiating parties regarding validity, essentiality, and infringement also exists for the court where the parties determine to present their case on a portfolio basis. Accordingly, a court setting a portfolio FRAND rate should not assume that the parties negotiate over valid and infringed patents, as it would in typical patent damages cases.[23] A top-down approach allows the court to account for this uncertainty about essentiality, validity, and infringement by incorporating it into the apportionment analysis if warranted by the evidence presented.

Here, the district court used the kind of information that would have been available to negotiating parties to determine the appropriate aggregate royalty burden as the starting point for a top-down analysis. *See* District Ct.

[23] *See* Mark A. Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 Berkeley Tech. L.J. 1135, 1151 (2013).

Op. at 18–26 [Appx000044-52] (relying on public statements by Ericsson and others). It then used additional information of the type that generally would have been available to the parties during negotiations to estimate Ericsson's share of that cumulative royalty burden. District Ct. Op at 26–38, 43–46 [Appx000052–64, 69–72] (relying on percentage of patents essential to the standard owned by Ericsson, adjusting for factors such as over-declaration of essentiality, jurisdiction, and expiration dates). The results of this top-down analysis were then used in conjunction with an analysis of comparable licenses in order to arrive at the Court's overall FRAND rate. District Ct. Op at 49 [Appx000075]. This practical approach is consistent with the hypothetical negotiation framework, given the evidence available to the parties during negotiations and the Court during litigation.

CONCLUSION

A top-down approach to setting FRAND portfolio rates reflects the considerations and information facing parties actually negotiating licenses for SEP portfolios. The decision below regarding the Court's use of top-down analysis to set a portfolio FRAND rate should be affirmed.

Respectfully submitted,

/s/ Kevin Hardy

KEVIN HARDY
SAMUEL BRYANT DAVIDOFF
WILLIAMS & CONNOLLY LLP
725 Twelfth Street, N.W.
Washington, DC 20005
(202) 434-5000

NOVEMBER 8, 2018

CERTIFICATE OF SERVICE

I, Kevin Hardy, counsel for amici curiae and a member of the Bar of this Court, certify that, on November 8, 2018, a copy of the attached Brief of Amici Curiae High Tech Inventors Alliance, Alliance of Automobile Manufacturers, Inc., Google LLC, Hewlett Packard Enterprise Company & HP Inc. in Support of Appellees and Affirmance was filed with the Clerk through the Court's electronic filing system. I further certify that all parties required to be served have been served.

/s/ Kevin Hardy
KEVIN HARDY

NOVEMBER 8, 2018

CERTIFICATE OF COMPLIANCE
WITH TYPEFACE AND WORD-COUNT LIMITATIONS

I, Kevin Hardy, counsel for amici curiae and a member of the Bar of this Court, certify, pursuant to Federal Rule of Appellate Procedure 32(a)(7)(B), that the attached Brief of Amici Curiae High Tech Inventors Alliance, Alliance of Automobile Manufacturers, Inc., Google LLC, Hewlett Packard Enterprise Company & HP Inc. in Support of Appellees and Affirmance is proportionately spaced, has a typeface of 14 points or more, was prepared using Microsoft Word 2013, and contains 5,981 words.

/s/ Kevin Hardy
KEVIN HARDY

NOVEMBER 8, 2018