CRITERION ECONOMICS

1717 K Street, N.W. | Suite 900
Washington, D.C. 20006
Tel: +1 (202) 518-5121

J. Gregory Sidak
Chairman
Direct Dial: +1 (202) 518-5121
jgsidak@criterioneconomics.com

November 1, 2017

Legislative Affairs Office
General Coordination Division
Policy Planning and Coordination Department
Japan Patent Office
3-4-3 Kasumigaseki
Chiyoda-ku Tokyo 100-8915, Japan

Re *Comments on the Japan Guidelines for Licensing Negotiations Involving Standard-Essential Patents*

Ladies and Gentlemen:

The Japan Patent Office (JPO) has invited public comments on proposed guidelines for licensing negotiations involving standard-essential patents (SEPs). I understand that the purpose of those guidelines is to "help prevent disputes involving SEPs and quickly resolve any disputes that do arise in global markets." I respectfully submit my comments and suggestions.

My name is J. Gregory Sidak. I am the founder and chairman of Criterion Economics, L.L.C. in Washington, D.C. I am also a founding co-editor of the *Journal of Competition Law & Economics*, published quarterly by the Oxford University Press since 2005, as well as the publisher and founding editor of the *Criterion Journal on Innovation* launched in 2016. For the past 36 years, I have worked at the intersection of law and economics in academia, government, and private practice. As an expert economic consultant, I have served clients in the Americas, Europe, and the Pacific. I have done extensive work in the area of SEPs: I have testified as an economic expert on issues regarding fair, reasonable, and nondiscriminatory (FRAND) licensing in various legal proceedings, I have published academic articles, and I have presented my research at international conferences on FRAND matters and related topics. I also twice served as former Judge Richard Posner's court-appointed neutral economic expert on patent damages in the U.S. District Court for the Northern District of Illinois pursuant to Federal Rule of Evidence 706.

I attach seven articles that I have written in recent years that amplify the ideas expressed in my comments submitted herein. The first article, *The Meaning of FRAND, Part I: Royalties*, analyzes the economic methodology to determine a FRAND royalty for SEPs. The second article, *The Proper*

Royalty Base for Patent Damages, analyzes the selection of the royalty base for the calculation of patent damages. The third article, *Apportionment, FRAND Royalties, and Comparable Licenses After* Ericsson v. D-Link, analyzes the principles that the Federal Circuit has developed in cases concerning FRAND-committed SEPs, including the selection of the royalty base, as well as the relevance that comparable license agreements have for the calculation of a FRAND royalty. The fourth article, *A FRAND Contract's Intended Third-Party Beneficiary*, examines the rights that a FRAND commitment confers on a standard's implementer, as a third-party beneficiary of a contract between an SEP holder and a standard-setting organization (SSO). The fifth article, *Fair and Unfair Discrimination in Royalties for Standard-Essential Patents Encumbered by a FRAND or RAND Commitment*, examines how the U.S. jurisprudence on nondiscrimination provides common principles that can aid a court's interpretation of an SSO's nondiscrimination requirement. The sixth article, *Is a FRAND Royalty a Point or a Range?*, explains why Mr. Justice Colin Birss' opinion in *Unwired Planet* does not support the general proposition that a FRAND royalty is a unique point rather than a range. The seventh article, *Hedonic Prices and Patent Royalties*, demonstrates how one can use hedonic price estimation to determine empirically whether a FRAND (or RAND) offer falls within the range of reasonable royalties created in a voluntary transaction between the SEP holder and the implementer.[1]

I. Appropriate Licensing Negotiation Methods

The JPO has asked for comments regarding "[e]lements of 'good faith' negotiations" for FRAND-committed SEPs and "[f]actors in conducting negotiations [for FRAND-committed SEPs] effectively and efficiently." In the United States, several courts have found that an SEP holder's FRAND commitment constitutes a binding contract between the SEP holder and the SSO. If a FRAND commitment similarly constitutes an enforceable contract under Japanese law, then principles of contract law provide important guidance for identifying the parties' appropriate negotiating conduct. In particular, contract-law principles help to identify the SEP holder's precise obligations and the corresponding implementer's rights as a third-party beneficiary of the FRAND contract, as well as determine whether the implementer, in negotiating FRAND terms, has exhausted its rights as a third-party beneficiary. Recognizing those principles would stimulate the parties not only to avoid practices that unduly delay the negotiation process, but also to work toward the prompt execution of a license agreement.

A. An SEP Holder's Obligations Arising from a FRAND Contract

A commitment to license SEPs on FRAND terms imposes specific contractual obligations on the SEP holder. Because the exact obligations might vary across SSOs, it is important to examine the exact language of the FRAND commitment (and, if necessary, the SSO's bylaws) to identify the SEP holder's contractual duties. Nonetheless, there are obligations that commonly arise from an SEP holder's FRAND commitment.

[1] These articles (and others on patent issues) are also posted at https://www.criterioneconomics.com/publications.html.

For example, a typical FRAND commitment imposes on the SEP holder a duty to *offer* to license its SEPs on FRAND terms. Typically, an SEP holder must notify the implementer of its infringement of SEPs and present an offer to the implementer to license those SEPs on FRAND terms. The SEP holder's offer should be sufficiently specific to permit an implementer to accept the offer and enter into a binding license agreement. An SEP holder that has not extended a FRAND offer to a given implementer has failed to discharge its contractual obligations and might face liability for damages or other remedies for breaching its contract with the SSO.

It bears emphasis, however, that an SEP holder can refuse to extend an offer to an upstream implementer (for example, to a chip manufacturer) if it instead offers to license its SEPs at the downstream level (for example, to a network operator). Under U.S. patent law, a patent holder has the statutory right to decide at which level to license its patents. A typical FRAND commitment does not restrict that right. There is consequently no valid legal argument to impose on the SEP holder the duty to offer to license its SEPs at a particular level of the supply chain. There is similarly no valid economic justification for imposing such an obligation on the SEP holder. Rather, it is economically rational to permit the SEP holder to choose the level of the supply chain at which to license its SEPs, because that choice can have efficiency justifications. Therefore, an SEP holder will likely discharge its contractual obligation by offering to license its SEPs on FRAND terms at any level of the supply chain.

Of course, the SEP holder's duty to make a FRAND offer does not ensure that a license will eventuate. Even if the SEP holder makes a FRAND offer, a negotiation with a given implementer might fail. For example, the implementer might ignore or reject the SEP holder's FRAND offer. Consequently, an SEP holder can discharge its contractual obligations arising from a FRAND commitment to a particular implementer even if the parties fail to execute a license agreement for the SEPs.

If the SEP holder has made a FRAND offer to a given implementer, then the SEP holder has no further duties to that implementer arising from the FRAND commitment. In particular, if the implementer has rejected a FRAND offer, the SEP holder has no duty to continue to negotiate the license terms with that implementer, let alone grant a license on FRAND terms. Of course, the SEP holder is free to continue negotiating a license for its SEPs and will typically do so if it is interested in licensing its SEPs. Nonetheless, any further negotiation of the licensing terms is solely at the discretion of the SEP holder and is no longer constrained by the FRAND commitment. An SEP holder that has offered to license its SEPs on FRAND terms has fully discharged its contractual obligations under the FRAND contract.

B. The Implementer's Conduct

Contract-law principles are also helpful for defining the scope of the implementer's rights as an intended third-party beneficiary of the FRAND contract. Pursuant to the SEP holder's duty to offer to license its SEPs on FRAND terms, the implementer is entitled to receive a FRAND offer from the

SEP holder. For example, an implementer that has not received a FRAND offer has the right to enforce the SEP holder's contractual obligations in court.

Yet, an implementer cannot claim rights under the FRAND commitment that the SEP holder never agreed to grant. Under U.S. contract law, an intended third-party beneficiary of a contract has no greater bundle of rights than what the parties to the contract agreed to convey to it. Hence, the implementer may claim under the FRAND commitment only the rights that the SEP holder promised to the SSO to convey to an intended third-party beneficiary of the FRAND commitment. For example, an implementer that claims that it has a right to obtain a license to the SEP holder's portfolio in exchange for a lump-sum royalty (rather than a running royalty) must show that the SEP holder and the SSO expressly agreed to confer that specific right on the implementer.

Because an implementer of an industry standard is not a party to the FRAND contract, it has no contractual duties arising from the SEP holder's FRAND commitment. In particular, the implementer has no contractual duty to reply to the SEP holder's offer, to accept the offer within a reasonable time, or even to negotiate the terms of the license (let alone to negotiate in good faith). However, an implementer that fails to take specific steps in negotiating a license for a portfolio of SEPs might exhaust its rights as an intended third-party beneficiary of the FRAND commitment. Thereafter, the implementer can claim no further rights under that commitment.

According to principles of U.S. contract law, an implementer will exhaust its rights if it rejects the SEP holder's FRAND offer, either explicitly or by making a counteroffer. In addition, an implementer will exhaust its rights if it fails to reply to the SEP holder's offer within a commercially reasonable time. What constitutes a commercially reasonable time depends on industry practice. After extending an offer to license, an SEP holder typically receives an acknowledgment of its offer within a few weeks, and it typically receives a reply to the offer within a few months. An implementer that fails to reply to the SEP holder's offer within that time has likely exhausted its rights as a third-party beneficiary. Recognizing that an implementer can exhaust its rights as a third-party beneficiary by failing to respond to the SEP holder's offer within a commercially reasonable time will discourage the implementer from engaging in delaying tactics and will stimulate the prompt execution of license agreements on FRAND terms.

Nonetheless, the implementer may request a revision of the offer without rejecting the SEP holder's offer. Under U.S. contract law, mere inquiry regarding the possibility of different terms, a request for a better offer, or a comment upon the terms of the offer does not constitute a rejection of the offer. Therefore, the implementer may negotiate with the SEP holder in the sense that the implementer may request different terms without terminating its power to accept the original FRAND offer. A potential licensee that presents valid arguments during the negotiation might persuade the SEP holder to revise its offer. However, the SEP holder has no duty to accept the implementer's requested terms or to make another FRAND offer. Nothing in a typical FRAND contract obliges the SEP holder to make multiple offers within the FRAND range to a given implementer. After an SEP holder

has made a legitimately FRAND offer, it has discharged its duty to the third-party beneficiary and has no further obligations arising from the FRAND contract.

II. Factors and Methods for Calculating FRAND Royalties

A relevant question in license negotiations for a given portfolio of SEPs is whether the SEP holder's license offer to a given implementer is FRAND. From an economic perspective, there is no single methodology to determine a FRAND royalty for a given portfolio of SEPs. Multiple methodologies exist, and the appropriate methodology will depend on the information available in each case. When the SEPs have been licensed to multiple licensees, the existing license agreements might show that an established royalty exists for the SEPs at issue.[2] Even if no established royalty has emerged from multiple market transactions, royalties identified in comparable licenses typically provide the best evidence of what constitutes FRAND compensation for the use of a given portfolio of SEPs. Yet, when there are no sufficiently comparable license agreements, alternative economic methodologies (such as hedonic price analysis) permit the determination of a FRAND royalty.

A. Comparable License Agreements

If a given portfolio of SEPs has been licensed to third parties, the royalties identified in those license agreements will typically provide the most reliable information for the determination of a FRAND royalty. From an economic perspective, the royalties specified in real-word licenses reveal a fair and reasonable price that implementers have willingly paid for the SEPs. Because a voluntary transaction necessarily makes both parties better off, a royalty is "fair" and "reasonable" so long as both parties have agreed to it. However, not all licenses are helpful for the determination of a FRAND royalty. Only licenses that are sufficiently comparable—that is, licenses executed in circumstances that are sufficiently comparable to the hypothetical license at issue—can inform the determination of a FRAND royalty.

The most comparable licenses in each case are those that cover the right to use the portfolio of SEPs at issue. Such licenses will most accurately reveal what the parties consider to be a FRAND royalty for the use of the SEPs in suit. Yet even a license for the same SEPs might lose some of its probative value if it (1) was executed under circumstances that differ from the circumstances surrounding the hypothetical license at issue (for example, during a period of financial distress) or (2) has a different scope than the hypothetical license at issue.

A license agreement that includes other consideration in addition to the right to use the portfolio of SEPs at issue (such as a license that includes the right to use implementation patents or a strategic partnership to develop new technology) can also inform the calculation of a FRAND royalty. However, one must take care to apply an appropriate economic methodology to disaggregate the value

[2] In U.S. patent law, a royalty is "established" for a patent if enough industry participants have agreed to pay it that their acceptance constitutes a general acquiescence as to the royalty's reasonableness.

of the different components of the license and isolate the effective royalty that the licensee agreed to pay specifically for the SEPs in suit.

License agreements that do not cover the specific portfolio of SEPs at issue (for example, a license agreement for a third party's portfolio of SEPs) will typically have limited probative value, although in some cases they might still inform the determination of a FRAND royalty. Because such a license determines the conditions for the use of a different technology, it provides little information about what the parties consider to be FRAND compensation for the SEPs at issue. Nevertheless, if the licensed patents cover a technology that is sufficiently comparable to the one covered by the SEPs at issue, even a license for a different portfolio of SEPs might provide indirect evidence for the calculation of a FRAND royalty.

For example, suppose that an economic expert has access to licenses that SEP holders *A*, *B*, and *C* have executed when licensing their patents essential to the 5G standard. Suppose further that one seeks to determine a FRAND royalty for SEP holder *D*'s portfolio of patents that are essential to the 5G standard. Provided that sufficient information is available to compare the values of the SEP holders' portfolios, one could rely on those licenses to infer the FRAND royalty for the use of SEP holder *D*'s patent portfolio. That methodology might be appropriate if the SEP holder had not previously licensed its SEPs.

In sum, depending on the specific circumstances of each case, real-word licenses might provide reliable information for the determination of a FRAND royalty.

B. Hedonic Price Analysis and Portfolio Strength

When there are no comparable licenses, hedonic analysis might provide an appropriate alternative methodology to determine a FRAND royalty for a given portfolio of SEPs. Hedonic models were developed in the early 20th century to calculate real estate rental values taking into account housing characteristics. By regressing a house's characteristics on its total price, one can determine the average value that each listed component adds to the property's total value. One can similarly use hedonic regression as part of an analysis to determine a FRAND royalty for a given SEP. The best candidates for this type of analysis are standard-compliant goods for which changes in the components are frequent and easy to identify and quantify.

By using a hedonic price model, one can reliably estimate the implicit price that consumers are willing to pay to have a particular standard included in their product. For example, to estimate the incremental value of a particular standard, one would compile data on various features (including price) of products that practice the standard at issue and products that practice the next-best standard. By using a hedonic regression model, one can then estimate the incremental value of the standard above and beyond the value of the next-best standard.

After identifying the incremental value of a standard, one can determine the permissible range of FRAND royalties for the use of an SEP holder's portfolio by identifying the SEP holder's contribution

to the incremental value of that standard. To do so, one must rely on portfolio-strength metrics that permit a comparison between the contributions that various SEP holders have made to the standard. There exist several economic methodologies to assess the relative value that a portfolio of SEPs has added to the standard. (This value is called the SEP holder's relative portfolio strength.) The first step typically requires that one identify the number of SEPs that each SEP holder has contributed to the standard. However, because not all SEPs are equal in value, one must complement that information with additional metrics.

Economists frequently use a patent's forward citations—the number of citations that an issued patent receives from subsequently issued patents—as a proxy measure of that patent's value, on the rationale that a patent with a high number of forward citations is referenced more often by later innovations and is therefore likely more valuable than a patent with a lower number of forward citations (assuming that the patents are the same age). As alternative measures of the relative value that an SEP holder's patent portfolio adds to the standard, one might also consider a technical expert's qualitative opinion of each SEP holder's relative contribution to the standard or the number of accepted technical contributions to a standard. By using one or more portfolio-strength metrics, one can reliably estimate the value that a given SEP holder has contributed to a standard and, from that estimate, identify the permissible range of FRAND royalties. It is worth noting that hedonic analysis separates the value of a standard from the value of standardization, consistent with the U.S. Federal Circuit's requirement that the calculation of a reasonable royalty must exclude the value of standardization. In some jurisdictions, such as the United Kingdom, courts have explicitly declined to apply the Federal Circuit's requirement to exclude the value of standardization from a FRAND royalty. Because hedonic analysis disaggregates the value of the patented technology from the value of standardization, the identified royalty would represent a lower bound on a FRAND royalty in jurisdictions that do not require the exclusion of the value of standardization.

C. Patent Pools

Patent pool licenses typically provide an unreliable benchmark for calculating a FRAND royalty, particularly if the SEP in question has not been licensed within the pool. In a patent pool, members agree to share their SEPs with the pool and collectively license those SEPs to individual implementers. The pool administrator typically collects royalties from each licensee and distributes the revenues among its members according to a predetermined formula. Patent pools often reward contributors on the basis of the number of SEPs contributed to the pool, rather than the SEPs' relative value. Consequently, if an SEP holder owns SEPs that command more value than the average SEP, that SEP holder would be unlikely to contribute its SEPs to a pool. Put differently, because a patent pool does not differentiate between more valuable and less valuable SEPs, it is likely to attract only SEPs that have an average or below-average value. It would thus be inappropriate to rely categorically on royalties from patent pools to calculate a FRAND royalty for all SEPs, especially those that were never licensed through a pool.

Even if an SEP holder has licensed its SEPs through a patent pool in the past, the patent pool license still might have little probative value for the calculation of a FRAND royalty in the present. One would need to examine the specific circumstances of the case to assess the informative value of the royalty specified in the pool agreement. For example, it is possible that the SEP holder decided to contribute its SEPs to a pool because it lacked the necessary financial resources to engage in a bilateral negotiation with each potential licensee. It is also possible that the SEP holder did not contribute its SEPs to the pool until after the licensee had executed a license with the pool. In that case, the royalty identified in the pool license will provide little information about what the licensee or the SEP holder considered to be FRAND compensation for the use of the SEP holder's portfolio, because the licensee, in negotiating the pool license, never considered (let alone determined) the value of those SEPs. Therefore, even when an SEP holder has previously licensed its SEPs through a pool, the pool agreement might have limited informative value for the calculation of a FRAND royalty.

III. The EMVR, the SSPPU, and Royalty Stacking

The JPO should avoid requiring the SEP holder and the implementer to consider in their licensing negotiations concepts such as the smallest salable patent-practicing unit (SSPPU), the entire market value rule (EMVR), or royalty stacking. The relevant goal in such negotiations is to ensure that the SEP holder's offer to a given implementer is FRAND. The parties can achieve that goal by applying a reliable methodology to calculate a FRAND royalty. Introducing concepts such as the SSPPU, the EMVR, or royalty stacking would compel the parties to address issues having little or no practical relevance, which in turn would impede the ability of the parties to execute a license agreement expeditiously.

A. The EMVR and the SSPPU

Despite having attracted considerable attention from academics and regulators, the selection of the royalty base plays a limited role in real-world license negotiations. In negotiating a license for a given SEP, the parties typically use three royalty-payment structures: (1) an *ad valorem* royalty rate (for example, a royalty of 3 percent of the licensed product's net selling price), (2) a per-unit royalty (for example, a royalty of $2 per licensed product sold), and (3) a lump-sum royalty (for example, a royalty of $120 million for use of the licensed technology over a specified license term). When the parties negotiate a per-unit royalty or calculate the lump-sum royalty by multiplying a per-unit royalty by the licensee's projected sales, the selection of the royalty base will have no effect on the calculated royalty payment. The selection of the royalty base is relevant only to cases in which the parties negotiate an *ad valorem* royalty or calculate a lump-sum royalty by multiplying an *ad valorem* royalty by the licensee's projected revenue from selling the licensed product.

Despite having such limited relevance, concepts such as the EMVR and SSPPU are often invoked in disputes over royalties for SEPs. The EMVR provides that, unless there is evidence that the patent in suit drives the demand for the multi-component product (such as a smartphone), the price of the multi-component product shall not constitute the royalty base for the calculation of patent damages

in litigation. If no such evidence is provided, the Federal Circuit requires that the royalty base be the SSPPU—that is, the smallest salable component of the downstream product that practices the patent in suit. However, it bears emphasis that the EMVR and SSPPU are *evidentiary principles* unique to American patent litigation. They seek to aid the jury in disaggregating the value of the patented invention from the value of the noninfringing components. Of course, regardless of the selected royalty base, one can, in theory, arrive at the correct damages award by applying the correct royalty rate. (For example, a 0.3-percent royalty rate applied to a royalty base of $100 would lead to exactly the same damages award as a 3 percent royalty rate applied to a royalty base of $10—that is, $0.30.) However, U.S. courts have said that presenting a large number to the jury might skew the jury's perception and lead to the award of patent damages that exceed the value of the patented invention. As a result, U.S. courts have introduced evidentiary principles requiring the use of SSPPU as the royalty base unless specific requirements are satisfied.

However, in developing the EMVR, U.S. courts have never mandated the use of the SSPPU in real-world negotiations between licensors and licensees. The EMVR is a legal construct for jury trials, not a decision-making heuristic that rational firms and individuals supposedly use in real-world transactions. Parties to a license often use the value of the downstream product as the royalty base, even if there is no evidence that the licensed technology drives consumer demand for the entire device. It would be nonsensical to assert that a license executed through private negotiation must use the SSPPU when calculating a royalty for SEPs, because such a mandate would introduce unnecessary costs without providing any benefit to the parties. Ultimately, the royalty for an SEP must reflect the value of the patented technology. Sophisticated parties have sufficient tools to achieve that goal.

In light of these economic principles, it is not surprising that U.S. courts have rejected the suggestion that the SSPPU should always be the royalty base for the calculation of royalties for FRAND-committed SEPs. The JPO should similarly avoid imposing any particular restriction on the royalty base that the parties use when negotiating a royalty for SEPs in a private bilateral negotiation.

B. Royalty Stacking

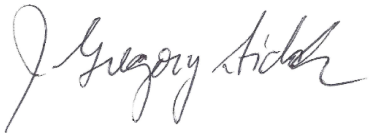
The JPO should also be skeptical of unsupported allegations about the risk of royalty stacking, which posits that the sum of all royalties that each SEP holder demands might impose an excessive royalty burden on a licensee and limit the licensee's ability to commercialize its product. The Federal Circuit clarified in *Ericsson v. D-Link* that the theoretical conjecture of royalty stacking is relevant to the calculation of a FRAND royalty only when empirical evidence shows that stacking is a concern in the particular case at hand. That legal conclusion has a sound economic basis; the royalty-stacking conjecture rests on flawed economic reasoning that lacks a rigorous empirical and theoretical foundation. Since the royalty-stacking conjecture was first introduced in 2007, scholars have examined empirical data on the royalties paid to license SEPs, but they have found no evidence that royalty stacking occurs in practice, let alone that it occurs with such frequency and severity as to be a serious public policy concern. In fact, the empirical evidence from industries that rely on SEPs *contradicts* the prediction that royalty stacking is a systematic problem. Therefore, unsubstantiated allegations about

the risk of royalty stacking should not influence the determination of a FRAND royalty in bilateral negotiations. Rather, if the royalty for a given SEP is FRAND (that is, if it reflects the incremental value of the licensed technology), the JPO should not consider the theorized risk of royalty stacking to be of significant concern.

IV. Summation

In sum, there is no need to develop new legal principles to enable an SEP holder and an implementer to promptly resolve their disputes regarding FRAND terms. Simply interpreting a FRAND commitment according to the established principles of contract law would encourage both parties to engage in good-faith negotiations. Recognizing that certain kinds of negotiating conduct might result in (1) a breach of contract or (2) the exhaustion of a third-party beneficiary's right to enforce the FRAND contract would encourage both parties to avoid delaying tactics, to raise arguments that advance the negotiation, and to engage in conduct that facilitates the prompt execution of the license agreement. Several rigorous economic methodologies exist on which both parties can rely to resolve their disagreements about FRAND terms and to determine a FRAND royalty for the SEPs at issue. However, there is no valid economic justification for injecting concepts such as the EMVR, the SSPPU, or royalty stacking into the negotiation, as doing so would not inform the determination of the FRAND royalty and would instead only needlessly prolong the negotiation process.

Sincerely,



J. Gregory Sidak
Chairman

Enclosures