

# Chapter 5

## Selected Issues in SEP Licensing in Europe: The Antitrust Perspective

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### 1 Introduction

In the last few years, Standard Essential Patents (henceforth “SEPs”) have attracted the attention of a number of regulators and antitrust agencies, and triggered significant litigation in many jurisdictions around the world.<sup>1</sup>

In Europe, both the Court of Justice of the European Union (henceforth “ECJ”) in *Huawei v ZTE*<sup>2</sup> and the European Commission (henceforth also the “Commission”) in its *Motorola* and *Samsung* investigations<sup>3</sup> have clarified the limits—under EU com-

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The views expressed in this chapter are entirely personal and cannot be attributed to the author’s law firm or any of its clients.

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<sup>1</sup>See Roberto Grasso, *The ECJ Ruling in Huawei and the Right to Seek Injunctions Based on FRAND- Encumbered SEPs under EU Competition Law: One Step Forward*, 39 *WORLD COMPET’N.* 213-238 (2016).

<sup>2</sup>Case C-170/13, *Huawei Techs. Co. Ltd. v. ZTE Corp.*, Euro. Ct. Justice, (16 July 2015). The ECJ ruled on the questions raised by the Landgericht Düsseldorf in connection with Huawei’s request of injunctions against ZTE in Germany for the alleged infringement of an SEP related to Huawei’s LTE technology.

<sup>3</sup>Commission decision COMP/AT.39985, *Motorola*, 29 Apr. 2014; Commission decision COMP/AT.39939, *Samsung*, 29 Apr. 2014.

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petition law—of the SEP-holder’s rights to seek injunctions against a prospective licensee who has allegedly infringed that patent.<sup>4</sup>

The ECJ preliminary ruling in *Huawei*, however, just like the European Commission’s decisions in *Motorola* and *Samsung*, leaves a number of important issues unresolved.

First, it is unclear in what circumstances the ownership of an SEP confers dominance. Second, while voluntary portfolio licensing is not illegal, an SEP-holder’s ‘all or nothing’ licensing strategy may raise issues under both patent law and EU competition law. Third, although the European Commission has yet to scrutinize the refusal to license at component-level, it is not clear if such a refusal is contrary to the FRAND commitment and also to Art. 102 TFEU, as it may amount to a discriminatory refusal to deal, and/or lead to excessive royalties. Fourth, there is no official view on whether the SEP-holder’s transfer of a subset of its SEPs to a Patent Assertion Entity (henceforth “PAE”) may breach EU competition law, and if so, in what circumstances.<sup>5</sup>

In this chapter I provide a brief overview of the standardization process, its benefits and risks for competition. I elaborate on the concept of FRAND and the way it is defined in the European Commission’s Horizontal Guidelines. I then analyze these issues and the principles underpinning them in light of the EU Competition rules.

## 2 The Standardization Process, Its Benefits and the Risks for Competition

Cooperative standard setting has played an important role in boosting innovation and growth across industries. The standard-setting process is based on an agreement among industry players to confer a monopoly on the holder of patents declared essential to a standard, thus excluding all alternative technologies existing before the adoption of the standard (*ex-ante* competition). The SEP-holder would not have such a monopoly without the industry agreement.

Standardization agreements are generally capable of generating significant efficiencies. They ensure compatibility and interoperability between products, encourage innovation, and lower costs by increasing the volume of manufactured products.

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<sup>4</sup>This was a first for the ECJ. The preliminary ruling broadly confirmed the Commission’s decisions in *Motorola* and *Samsung*, which were also a first for the Commission. The antitrust regulator historically investigated other issues concerning intellectual property rights (‘IPRs’), FRAND terms and competition law. For instance, it acted on complaints that Qualcomm failed to honour its FRAND commitment. It also investigated the issue of ‘FRAND succession’ in relation to ICom’s purchase of a Bosch portfolio of SEPs and Rambus’ alleged ‘patent ambush’.

<sup>5</sup>Indeed, neither *Huawei* nor the European Commission’s decisions provide guidance on a very important issue affecting SEP licensing, i.e. how to determine FRAND and what is a proper methodology that both SEP-holder and potential licensee should follow to arrive at a FRAND royalty, Roberto Grasso, *Standard Essential Patents: Royalty Determination in the Supply Chain*, 8 J. OF EURO. COMPETITION L. AND PRAC. 5, at 283-294 (2017).

They strengthen competition by enabling consumers to switch more easily between products and further market integration. This is why, subject to certain conditions, standardization agreements are not prohibited under Art. 101 TFEU.

By its very nature, however, the standardization process can also impair competition. Once a standard is implemented, holders of SEPs included in that standard are able to behave in anti-competitive ways. As the Commission explained in its Horizontal Guidelines:

[b]y virtue of its IPR, a participant holding IPR essential for implementing the standard, could, in the specific context of standard-setting, also acquire control over the use of a standard. When the standard constitutes a barrier to entry, the company could thereby control the product or service market to which the standard relates. This in turn could allow companies 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 excess rents by way of excessive royalty fees thereby preventing effective access to the standard.<sup>6</sup>

The hold-up problem is exacerbated when the standardized technology covers only a minor feature of a multifunctional product, for example a smartphone. In this case, the patented technology is considered “as essential” as any other technology declared essential to the standard, and gives the exact same monopoly power. Patent hold-up creates significant negative externalities, and ultimately harms competition and consumers. For example, the SEP-holder’s threats to enforce its patents on its minor technology through litigation may lead to a significant increase in the price of the entire product.<sup>7</sup> This is the case when the SEP-holder demands royalties based on the entire sale price of a product such as a smartphone, even though its patents cover a technology embedded only in a component such as a baseband chipset, which represents only a fraction of the value of the device.<sup>8</sup>

### 3 The FRAND Commitment

To minimize the risk of hold-up, Standard Setting Organizations (henceforth “SSOs”) such as the European Telecommunications Standards Institute (henceforth “ETSI”) and the Institute of Electrical and Electronics Engineers (henceforth “IEEE”), require members to disclose their essential IPRs in a timely fashion and to commit to license their technologies on (F)RAND terms.<sup>9</sup> This reflects the Commission’s approach in the Horizontal Guidelines:

<sup>6</sup>Horizontal Guidelines, at ¶ 269 and *Motorola*, at ¶ 76.

<sup>7</sup>The Commission acknowledged that the mere threat of injunction “*may significantly impede effective competition by ... forcing the potential licensee into agreeing to potentially onerous licensing terms which it would otherwise not have agreed to*”. *Google/Motorola Mobility*, at ¶ 107 (13 Feb. 2012). See also, more recently, *Motorola*, at ¶ 486.

<sup>8</sup>See discussion in *infra* Part V.A.

<sup>9</sup>See ETSI Guide on Intellectual Property Rights (‘IPRs’), Sept. 19 2013. See also IEEE-SA Standards Board Bylaws and IEEE-SA Standards Board Operations Manual. While ETSI requires

[i]n order to ensure effective access to the standard, the IPR policy [of the standard setting organisation] would need to require participants wishing to have their IPR included in the standard to provide an irrevocable commitment in writing to offer to license their essential IPR to all third parties on fair, reasonable and non-discriminatory terms (“FRAND commitment”).<sup>10</sup>

In addition, the FRAND commitment aims at striking “a fair balance between the interests of technology owners to be appropriately remunerated for the use of their essential IPRs and the interests of technology implementers to have access to such essential IPRs”.<sup>11</sup>

The economic and social objective of the FRAND commitment is expressed in the European Commission’s Horizontal Guidelines:

FRAND commitments are designed to ensure that essential IPR protected technology incorporated in a standard is accessible to the users of that standard on fair, reasonable and non-discriminatory terms and conditions. In particular, FRAND commitments can prevent IPR holders from making the implementation of a standard difficult by refusing to license or by requesting unfair or unreasonable fees (in other words excessive fees) after the industry has been locked-into the standard or by charging discriminatory royalty fees.<sup>12</sup>

The FRAND commitment represents the *quid pro quo* at the heart of the standard-setting process. In exchange for a timely disclosure of the IPR and a commitment to license on FRAND terms, SSO members give the SEP-holder an opportunity to obtain a monopoly it would not have obtained absent a decision to select its technology over the alternative technologies available at the time and to obtain FRAND royalties from a potential massive base of products that support the standard.

This is also the minimum safeguard to ensure that the standard-setting process is compatible with Article 101 TFEU, and that the SEP-holder does not abuse the

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(Footnote 9 continued)

SEP-holders to commit to license on FRAND terms and conditions, the IEEE mandates a commitment to license on RAND terms. The difference is just in the terminology. In particular, under the IEEE-SA IPR policy, holders of a patent that is potentially essential to a standard must submit a Letter of Assurance (“LOA”) stating they will either (i) not enforce such patents, or (ii) license such patents “for a compliant implementation of the standard ... to an unrestricted number of applicants on a worldwide basis without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination.” Just like the FRAND commitment, an LOA is “*irrevocable*” and “shall apply, at a minimum, from the date of the standard’s approval to the date of the standard’s” withdrawal or its transfer to inactive status. Furthermore, once accepted by the IEEE-SA, an LOA referencing a particular standard or amendment to a standard remains in force with respect to subsequent amendments to the extent the claim technology is carried forward. An SEP-holder’s refusal to commit to license on royalty-free or RAND terms is a ground for excluding its proprietary technology from the standard.

<sup>10</sup>Horizontal Guidelines, at ¶285.

<sup>11</sup>*Motorola*, at ¶ 77.

<sup>12</sup>Horizontal Guidelines, at ¶ 287.

monopoly power it acquires after the adoption of the standard. Absent this safeguard, in certain circumstances the standard-setting process would be no different than an illegal and void agreement to confer a monopoly on certain SEP-holders and to exclude others.<sup>13</sup>

Abusive licensing practices in violation of the FRAND commitment create significant harm to society on many levels. They deter standard implementers from implementing the standard. Businesses fear that the SEP-holder might “hold them up” and ask unreasonable royalties or impose other unfair terms and conditions. Abusive licensing practices also discourage developers from investing in “add-on” innovation. More generally, the standard-setting process itself is negatively affected because companies would not want to invest in developing a standard that will not obtain broad acceptance because the rules failed to protect implementers from abusive conduct by licensees. Moreover, incentives to invest in developing truly valuable standardized technology would be chilled if the aggregate royalties for standardized technology are hogged by inventors who use abusive tactics to obtain more than their appropriate share.

## 4 Portfolio Licensing

SEP-holders and potential licensees may have a mutual interest in negotiating a license to an entire portfolio of SEPs. In this case, portfolio licensing is likely to create efficiencies, e.g. by reducing the administrative costs of multiple license negotiations. Portfolio licensing, however, may not be what both SEP-holder and prospective licensee want. There are a number of reasons why a prospective licensee may want to license only some of the SEPs in the SEP-holder’s portfolio. For example, it may want to license only those SEPs implemented in the product it manufactures or sells, without having to pay for all the other patents it does not use. It may also be simply concerned that not all the SEPs are essential, valid, or infringed. More generally, licensees may be concerned that portfolio licensing may lead to inaccurate royalty determinations because calculations are based only on the number of declared SEPs in a portfolio rather than the strength of the overall portfolio. Indeed, recent studies confirm the existence of a significant “patent thicket” in the SEP space.<sup>14</sup>

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<sup>13</sup>Horizontal Guidelines, at ¶ 288.

<sup>14</sup>A recent study shows that SEPs succeeded in only 12% to 16% of cases. See RPX Corp., *Standard Essential Patents: How Do They Fare?* 9, (2014), available at <http://www.rpxcorp.com/wp-content/uploads/2014/01/Standard-Essential-Patents-How-Do-They-Fare.pdf>.

While portfolio licensing is not per se illegal, the SEP-holder forcing the potential licensee to take a license to its entire portfolio of SEPs despite the latter's interest in only a subset of them may raise issues under both patent law and EU competition law.

#### 4.1 Patent Law Issues

From a patent law perspective, the SEP-holder is required to prove the merits of the patents it asserts against a licensee, just like in any patent infringement dispute. It cannot therefore force a potential licensee to take a “black-box” license to its entire portfolio, and seek royalties based on the number of patents in the portfolio, because this would imply that all those patents are essential, valid, and infringed, without the need to prove it.

This is confirmed by the fact that generally courts only adjudicate FRAND royalties for the specific patents asserted in litigation, supposedly the strongest, not for the entire portfolio. For example, in *Vringo v ZTE*, ZTE did not agree to pay a global FRAND rate for Vringo's portfolio without proof that its products actually practiced Vringo's patents, and that those patents were valid.<sup>15</sup> The English High Court rejected the notion that ZTE should pay royalties for patents it did not use and/or were invalid, and added that this did not make ZTE an “unwilling licensee”.<sup>16</sup> Notably, the court warned that SEP disputes resulting in a global portfolio license do not give Vringo the right to impose such a license on ZTE:

[i]n some ways I believe the position adopted by Vringo in this dispute confuses the true nature of its legal rights. Its rights are and are nothing more than patent rights. Although it is a truism that disputes of this kind often end up with a global licence, one needs to be careful turning that truism into something like a right to compel a defendant to enter into such a licence. The truism does not alter the character of Vringo's underlying rights.<sup>17</sup>

The District Court for the Northern District of California reached the same conclusion in *Apple v Ericsson*.<sup>18</sup> Ericsson, which owned a number of allegedly standard-essential patents, argued that a license to its entire portfolio of SEPs was necessary to resolve what it called a “portfolio-wide” dispute with Apple. The court rejected Ericsson's contention that the potential licensee was under the obligation to license the SEP holder's entire portfolio, even if a portfolio license could be seen as “business realities”.<sup>19</sup>

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<sup>15</sup>*Vringo Infrastructure, Inc. v. ZTE (UK) Ltd*, EWHC 1591, (Pat, June 6, 2013).

<sup>16</sup>*Id.*, at ¶¶ 42-44.

<sup>17</sup>*Id.*, at ¶ 56.

<sup>18</sup>*See Apple Inc. v. Telefonaktiebolaget LM Ericsson, Inc.*, No. 15-cv-00154-JD, 2015 WL 1802467, at \*2 (N.D. Cal. Apr. 20, 2015).

<sup>19</sup>*Id.*

## 4.2 EU Competition Law Issues

The SEP-holder forcing the potential licensee to take a license to its entire SEP portfolio may lead to the violation of EU competition rules, in particular in the context of injunctions related to FRAND-encumbered SEPs.

As recently confirmed by the ECJ in *Huawei*, the potential licensee has the right to challenge, in parallel to the negotiations relating to the grant of a license, the validity of those patents and/or to contest their essentiality to the standard and/or their actual use, or reserve the right to do so in the future.<sup>20</sup> The Court also clarified that the exercise of such right cannot be interpreted as a sign of unwillingness. The Commission reached the same conclusion in its *Motorola* investigation, where it found that Motorola's restriction of Apple's ability to challenge the validity of its patents was "capable of having a number of anti-competitive effects".<sup>21</sup> The SEP-holder making a license to one of its SEPs conditional upon the implementer taking a license to its entire SEP portfolio may effectively deprive the implementer of its right to challenge the validity, essentiality, or actual use of those patents.

Moreover, the ECJ in *Huawei* provided a list of obligations that the SEP-holder must follow to avoid that its action for a prohibitory injunction or for the recall of products against the potential licensee results in an infringement of Art. 102 TFEU. The ECJ required the SEP-holder to, *inter alia*, give notice or otherwise consult with the alleged infringer prior to initiating litigation, and to "alert the alleged infringer of the infringement complained about by designating that SEP and specifying the way in which it has been infringed".<sup>22</sup> The SEP-holder imposing a license to its entire portfolio of SEPs complies with such requirement only to the extent that the potential licensee is able to identify the patents allegedly infringed by its standard-compliant products and to understand why they are infringed. This may prove challenging in those cases in which a portfolio includes hundreds of patents. Indeed, if the SEP-holder does not comply with the *Huawei* obligation, it would not

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<sup>20</sup>See *Huawei*, at ¶ 69.

<sup>21</sup>The Commission identified those effects in, *inter alia*, limiting "Apple's ability to influence the level of royalties it will have pay to Motorola for the use of the SEPs covered by the Settlement Agreement", and leading "other potential licensees of the SEPs covered by the Settlement Agreement to pay for invalid IP". See *Motorola*, at 336. This conclusion is also consistent with the Commission's approach in its Technology Transfer Regulation and Guidelines, where it is established that the exemption does not apply to "any direct or indirect obligation of a party not to challenge the validity of intellectual property rights which the other party holds in the Union". The Regulation creates an exemption from antitrust scrutiny for some patent license agreements. See Commission Regulation 316/2014, Mar. 21, 2014 (on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements, Article 5(2), 2014 O.J. (L 93/17)). The Commission explained that this approach reflects the concern that to foster "undistorted competition [...] invalid intellectual property rights should be eliminated" as it "stifles innovation rather than promoting it". See Commission Communication (EC) of Mar. 28, 2014, guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, 2014 O.J. (C 89) ¶ 134.

<sup>22</sup>See *Huawei*, at ¶¶ 60-61.

be able to benefit from the protection (safe harbor) of the ECJ- mandated licensing framework, and its pursuit of injunctions may amount to an abuse contrary to Art. 102 TFEU.

Finally, the SEP-holder may use the threat of injunctions to force the potential licensee to take a license to its entire portfolio of SEPs. This effectively perpetuates the abusive use of injunctions contrary to Art. 102 TFEU. As recognized by the Commission in *Motorola*, in undistorted licensing negotiations, a potential licensee can balance the pros and cons of engaging the SEP- holder in a long and costly legal battle. In the case of SEP licensing, however, a potential licensee facing the SEP-holder's threat of injunctions has little choice but to agree to the SEP- holder's un-FRAND licensing terms.<sup>23</sup> The alternative is permanent exclusion from the market and severe damages to the potential licensee's sales and reputation. Assuming the SEP is valid, infringed, and enforceable, the licensee cannot market its products without infringing the SEP- holder's patents since by definition there are no substitutes.<sup>24</sup>

### 4.3 Component-Level Licensing

Certain SEP-holders purport to license only manufacturers and sellers of the end-products incorporating their declared essential patents, while refusing to license any other implementer of the standard, including manufacturers and suppliers of the very components that provide the standardized functionality.

The strategic refusal to license at component-level is based on the patent exhaustion doctrine. Under this doctrine, which is widely recognized in a number of jurisdictions globally, including the EU and the United States, the first fully licensed or authorized sale of a patented product may extinguish the patent owner's right to seek royalties on subsequent sales. In practice, if an SEP- holder licenses the chip maker, it cannot also license the same patents to the manufacturer or seller of the end-product incorporating that chip.<sup>25</sup>

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<sup>23</sup>The Commission considers that even the mere threat of an injunction is relevant in its abuse analysis. See *Motorola*, at 486. See also Case No COMP/M.6381, *Google/ Motorola Mobility*, at ¶¶ 53, 54, 111 (13 February 2012), at ¶ 107 (the mere threat of injunction “*may significantly impede effective competition by ... forcing the potential licensee into agreeing to potentially onerous licensing terms which it would otherwise not have agreed to*”).

<sup>24</sup>*Motorola*, at ¶ 486. In the specific circumstances, the Commission concluded that:

Settlement discussions under the threat of an injunction on the basis of a SEP for which there is no alternative were unduly distorted in favour of Motorola, as Apple had no other viable option than agreeing to a settlement.

<sup>25</sup>See, e.g., *Centrafarm BV & Adriaan de Peijper v. Sterling Drug Inc.*, Case C-15/74, 1974 ECR 11641147. The Court concluded that “the grant by a patentee of a sales licence in a member-State has the consequence that the patentee can no longer oppose the marketing of the patented product throughout the Common Market”.



The incentives behind this strategic licensing are clear. The SEP-holder can extract higher royalties by licensing directly the manufacturers or sellers of the end-product, rather than component manufacturers. It could argue that its royalties should be based on the sale price of the end-product, rather than the price of just the component supplying the infringing functionality.<sup>26</sup>

The European Commission has yet to scrutinize the refusal to license at component-level. A cursory analysis of this conduct, however, shows that refusal is contrary to the (F)RAND commitment, to the ETSI and the IEEE's IPR policies, and also to Art. 102 TFEU, as it may constitute a discriminatory refusal to deal, and/or lead to excessive royalties.

1. *The refusal to license component-level implementers is contrary to the (F)RAND commitment and to the ETSI and the IEEE's IPR policies.*

The SEP-holder's refusal to license component-level implementers is contrary to both the "Fair" and the "Non-Discriminatory" requirements of the (F)RAND commitment. More generally, it is contrary to the purpose of the FRAND commitment to stimulate widespread adoption of standards.

As part of its commitment to license any interested implementer on (F)RAND terms and conditions, an SEP-holder loses its right to cherry-pick its licensees. The (F)RAND commitment mandates that an SEP-holder be prepared to license all implementers who wish to use the standard, including manufacturers of the components that provide the patented functionality used in the end-product and sellers of end-products.

The SEP-holder's refusal to license component-level implementers simply based on the implementer's position in the supply chain is contrary to its commitment not to discriminate. Non-discrimination mandates that an SEP-holder license anyone at the level where its patented technologies can be implemented. The SEP-holder should achieve the same royalty regardless of where it licenses in the supply chain. Rather than extract higher rents from end-products that incorporate the same technology, the SEP-holder should command a higher price based on their

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<sup>26</sup>Certain SEP-holders engage in even more aggressive licensing strategies, by seeking royalties from the very final users of the end-products incorporating their standardized technology. For example, Innovatio IP Ventures, a U.S. company that owns certain patents declared essential to the 802.11 standard (i.e. Wi-Fi), sued and demanded royalties from more than 8,000 commercial activities, including cafés, restaurants, hotels, and grocery stores, all providing Wi-Fi networks. *In re Innovatio IP Ventures, LLC Patent Litigation*, No. 11C9308, 2013 WL 5593609, at \*1 (N.D. Ill. Oct. 3, 2013). The court rejected Innovatio's claims that the royalty should be determined:

as a percentage of the selling price of end-products with wireless functionality, including laptops, tablet computers, printers, access points, and the like", and held that royalties should be levied "not on the entire product, but instead on the 'smallest salable patent-practicing unit."

differentiating features.<sup>27</sup> This result can be achieved by using a common, non-discriminatory approach for all levels of the supply chain, based on the smallest saleable unit.

The non-discrimination obligation is part of the IPR policy of some of the most influential SSOs. The ETSI FRAND commitment, for example, requires SEP-holders to:

give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licences on fair, reasonable and non-discriminatory (“FRAND”) terms and conditions under such IPR to at least the following extent: MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee’s own design for use in MANUFACTURE; [...].<sup>28</sup>

Similarly, the IEEE’s IPR policy states that a RAND undertaking includes a commitment to license “an unrestricted number of applicants on a worldwide basis”.<sup>29</sup>

The International Telecommunications Union (henceforth “ITU”) also mandates that a party committing to license on RAND terms and conditions be “prepared to grant a license to an unrestricted number of applicants on a worldwide, non-discriminatory basis and on reasonable terms and conditions to make, use and sell implementations”.<sup>30</sup> The Common Patent Policy that governs the ITU disclosure clarifies that the licensing “statement must not include additional provisions, conditions, or any other exclusion clauses in excess of what is provided for each case in the corresponding boxes of the form”.<sup>31</sup> Indeed, the refusal to license component-level implementers qualifies as an “exclusion clause”.

## 2. *The refusal to license component-level implementers is contrary to EU competition law*

The SEP-holder’s refusal to license component-level implementers raises serious issues under EU competition law, in at least two respects. It may be constructed as an exploitative strategy aimed at extracting additional royalties from other standardized and non-standardized technologies that have “no reasonable relationship

<sup>27</sup>See, e.g., Florian Mueller, *Ericsson Explained Publicly Why it Collects Patent Royalties From Device (Not Chipset) Maker*, FOSS PATENTS, Jan. 29, 2014, <http://www.fosspatents.com/2014/01/ericsson-explained-publicly-why-its.html>.

<sup>28</sup>See ETSI Intellectual Property Rights Policy, at ¶ 6.1, available at <http://www.etsi.org/images/files/ipr/etsi-ipr-policy.pdf>.

<sup>29</sup>IEEE-SA Standards Board Bylaws, at ¶ 6.2.

<sup>30</sup>*Patent Statement and Licensing Declaration for ITU-T or ITU-R Recommendation, ISO or IEC Deliverable*, ITU, available at [https://www.itu.int/dms\\_pub/itu-t/oth/04/04/T04040000030004PDFE.pdf](https://www.itu.int/dms_pub/itu-t/oth/04/04/T04040000030004PDFE.pdf).

<sup>31</sup>*Common Patent Policy for ITU-T/ITU-R/ISO/IEC*, ITU, available at <http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx>. The only exception allowed under the RAND commitment is that an SEP-holder can make its license conditional upon the licensee licensing its SEPs for implementation of the relevant ITU “Recommendation”.

to the economic value” of the SEP. It may also be seen as a discriminatory refusal to deal within the meaning of Art. 102 TFEU.

### 3. *The exploitative abuse*

Article 102(a) TFEU bars dominant companies from “directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions”.<sup>32</sup> As explained above, the ECJ has long held—e.g. in *United Brands*—that demanding a price that is excessive in relation to the economic value of the good or services provided constitutes unfair pricing.<sup>33</sup> The Commission confirmed the relevance of the *United Brands* test for the appropriateness of royalties SEPs in its Horizontal Guidelines, stating that “In case of a dispute, the assessment of whether fees charged for access to IPR in the standard-setting context are unfair or unreasonable should be based on whether the fees bear a reasonable relationship to the economic value of the IPR.”<sup>34</sup>

### 4. *The refusal*

As recognized by the EU Courts in a series of seminal cases, including *Magill*,<sup>35</sup> *Bronner*,<sup>36</sup> *IMS*,<sup>37</sup> and *Microsoft*,<sup>38</sup> a company abuses its dominant position if, without objective justification, (i) it refuses to license a product or service “indispensable to the exercise or a particular activity on a neighboring market”; (ii) the refusal is “of such a kind as to exclude any effective competition on that neighboring market”; and (iii) the refusal limits “production, markets or technical development to the prejudice of consumers”.<sup>39</sup>

The refusal to license is a sub-category of the refusal to deal contrary to Art. 102 TFEU. Courts and the Commission have consistently interpreted this category broadly, to include not only outright refusals, but also constructive refusals to deal.<sup>40</sup> In *Deutsche Post*, for example, the Commission clarified that “the concept of refusal to supply covers not only outright refusal but also situations where dominant

<sup>32</sup>See Art. 102(a) TFEU.

<sup>33</sup>See Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228.

<sup>34</sup>Horizontal Guidelines, at ¶ 289.

<sup>35</sup>See Joined Cases C-241/91 P and C-242/91 P, *RTE and ITP v. Commission* (‘*Magill*’) [1995] ECR I-743, at 50. See also Case 238/87, *Volvo v. Veng* [1988] ECR 6211, at ¶ 9.

<sup>36</sup>Case C-7/97, *Bronner* [1998] ECR I-7791, at ¶ 39.

<sup>37</sup>Case C-418/01, *IMS Health* [2004] ECR I-5039, at ¶ 35.

<sup>38</sup>See Case T-201/04, *Microsoft v. Commission* [2007] ECR II-3601, at ¶ 331.

<sup>39</sup>See Case C-241/91 P *Magill* at ¶¶ 54 to 56 and Case T-201/04 *Microsoft*, at paras. 332, 333, 643 and 647.

<sup>40</sup>See Commission Communication, Guidance on the Commission’s enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings (‘Commission Enforcement Priorities’) [2009] OJ C 45/7, at ¶ 79. See also DG Competition, Discussion Paper on the application of Article 82 of the Treaty to exclusionary abuses, December 2005, available at <http://ec.europa.eu/competition/antitrust/art82/discpaper2005.pdf>.

firms make supply subject to objectively unreasonable terms”.<sup>41</sup> The SEP-holder’s refusal to license a component manufacturer or seller is a clear example of outright refusal.

#### 5. *An input essential to be active on a neighboring market*

A patent declared essential to a standard, if valid, infringed, and enforceable, is by definition essential to be active on a neighboring market. As recently confirmed by the ECJ in *Huawei*, a standard-essential patent, unlike differentiating IP, is “essential to a standard established by a standardisation body, rendering its use indispensable to all competitors which envisage manufacturing products that comply with the standard to which it is linked”.<sup>42</sup>

#### 6. *The refusal is “of such a kind as to exclude any effective competition on that neighboring market”, thus limiting “production, markets or technical development to the prejudice of consumers”*

Art. 102 TFEU does not require proof that the SEP-holder’s refusal to license a standard implementer has substantially eliminated competition on a market.<sup>43</sup> Art. 102 TFEU requires that the SEP-holder’s refusal “tends to restrict competition or is capable of having that effect”,<sup>44</sup> regardless of whether it is successful.<sup>45</sup> In its Enforcement Priorities, the Commission stated that with regard to essential inputs “a dominant undertaking’s refusal to supply is generally liable to eliminate, immediately or over time, effective competition in the downstream market”.<sup>46</sup>

Logically, by refusing to license its SEPs, the patent holder can exclude “even the most innovative standard-compliant products from the market as, by definition, the patented technology cannot be worked around”, and eventually limit consumer choice and partially eliminate downstream competition.<sup>47</sup>

#### 7. *The objective justification*

Under the above-mentioned case law of the EU Courts on refusal to license, an SEP-holder whose conduct is liable to infringe Art. 102 TFEU can still avoid liability for abuse of dominance under Art. 102 TFEU if it can prove that its refusal

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<sup>41</sup>Commission decision COMP/C-1/36915, *Deutsche Post AG*, 25 Jul. 2001, at ¶ 103. See also Commission Enforcement Priorities, at ¶ 79.

<sup>42</sup>*Huawei*, at ¶¶ 49–50. See also the Commission’s decision in *Motorola*, at ¶¶ 51–53.

<sup>43</sup>*Microsoft*, supra note 74, at ¶ 564.

<sup>44</sup>Case C-549/10 P, *Tomra v. Commission*, judgment of 19 Apr. 2012, not yet reported, at ¶ 68. See also *Microsoft*, supra note 74, at ¶¶ 563 and 564, and Case T-301/04, *Clearstream v. Commission* [2009] ECR II-3155, at ¶ 148.

<sup>45</sup>*Microsoft*, at ¶ 564.

<sup>46</sup>*Motorola*, at ¶ 312.

<sup>47</sup>Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228. See Roberto Grasso, *The ECJ Ruling in Huawei and the Right to Seek Injunctions Based on FRAND-Encumbered SEPs under EU Competition Law: One Step Forward*, 39 WORLD COMPETITION 213-238 (2016).

was objectively necessary, or that it generated efficiencies that may outweigh or counterbalance its exclusionary effects to the benefits of consumers.<sup>48</sup> The SEP-holder's refusal to license standard implementers at the component level, however, serves no other purpose than collecting higher/excessive royalties from the manufacturer or seller of the end-product. This cannot possibly constitute an objective justification for refusing to license a component maker under Art. 102 TFEU.

## 5 SEP Transfers and PAEs

The monetization of patent rights, including through the transfer of ownership of one or more SEPs is perfectly legitimate, provided that the entity acquiring the IPR honours the patent pledges made by the previous owner, e.g. to license under royalty-free or FRAND terms. For example, the transfer of an SEP may reflect a legitimate need of a small-to-medium-sized company to obtain a return on its investment, e.g., when the company is under-capitalized and/or cannot afford the cost of litigation against implementers of its technology allegedly infringing its IPRs. It may also create efficiencies by helping an operating company to manage a large patent portfolio—e.g., when a company decides to close a business line, it may outsource to a PAE the patents related to such business that it no longer needs.<sup>49</sup>

Issues arise when the new SEP-holder (transferee of the IPR) has an “enhanced” ability and strong incentives to disregard the patent pledges made by the original SEP-holder. This is the case when the purchaser of the SEPs is a PAE.<sup>50</sup>

Unlike operating companies active in the downstream markets or innovators/patentees active in the upstream input technology markets, PAEs normally do not manufacture or sell products, nor invest in R&D.<sup>51</sup> Their business model consists of purchasing patents from patent-holders for the sole purpose of

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<sup>48</sup>Case 27/76 *United Brands Company and United Brands Continentaal BV v. Commission* [1978] ECR 207, ¶¶ 218–220 and 228. See also Case C-209/10 *Post Danmark A/S v. Konkurrencerådet*, judgment of 27 March 2012.

<sup>49</sup>See Mark S. Popofsky & Michael D. Laufert, *Patent Assertion Entities and Antitrust: Operating Company Patent Transfers*, ANTITRUST SOURCE 3–4 (Apr. 2013); See also Brian Yeh, *An Overview of the ‘Patent Trolls’ Debate*, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, Aug. 20, 2012, available at [https://www.eff.org/sites/default/files/R42668\\_0.pdf](https://www.eff.org/sites/default/files/R42668_0.pdf).

<sup>50</sup>A recent academic paper shows that, while in principle enhanced monetization can promote innovation, overall, enhanced monetization by PAEs discourages innovation and harms consumers. See Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisitions*, 79 ANTITRUST L. J. 484 (2014).

<sup>51</sup>The distinction between operating companies and PAEs is not always straightforward. For example, certain operating companies are also very active in the monetization of their patents, which may qualify them as PAEs.

monetizing them through assertion.<sup>52</sup> Importantly, the PAEs' decision to assert their patent rights against an implementer is not constrained by the risk that the implementer retaliates, e.g. by countersuing for infringement of its own patents. PAEs are also less sensitive to procompetitive outcomes such as cross-licenses with the other patent holders.<sup>53</sup> PAEs are not exposed to reputational damages vis-à-vis the members of the relevant SSO because generally they are not members of an SSO, or at least are not "repeat players".

Moreover, PAEs do not suffer the pressure that customers and shareholders often put on the management of an operating company to settle a patent dispute and avoid costly litigation.<sup>54</sup>

The nature of PAEs enables them to create an "outsized threat" for the implementers, i.e. a threat that is much greater than the value to the user of the patented technology.<sup>55</sup> This increases the risk of patent hold-up. The PAE may decide not to honour the FRAND commitment given by the previous SEP-holder to an SSO. It may use the threat of injunctions to force implementers on a downstream market to agree to un-FRAND/excessive royalties. It may also discriminate against a group of implementers—e.g. a PAE may decide to license only end-product manufacturers or sellers in order to be able to charge higher royalties.

Regardless of whether the new SEP-holder honours the FRAND commitment given by the previous patent owner, the SEP-holder's transfer of only a subset of its SEP portfolio (henceforth "portfolio splitting") is a clear example of the "complements problem" and likely to lead to royalty stacking.

Finally, the SEP transfer raises special concerns in case of "hybrid-PAEs", i.e. when the operating company transferring the SEP maintains some level of influence or control over the PAE's licensing business. The SEP transfer, in this case,

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<sup>52</sup>This is also the definition adopted by the U.S. FTC. In its report the FTC stated: "The business model of PAEs focuses on purchasing and asserting patents against manufacturers already using the technology, rather than developing and transferring technology", Fed. Trade Comm'n, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, (March, 2011), <https://www.ftc.gov/sites/default/files/documents/reports/evolving-ip-marketplace-aligning-patent-notice-and-remedies-competition-report-federal-trade/110307patentreport.pdf>. Moreover, while in principle PAEs could invest the revenues from their licensing activity in innovation or to expand a business in a downstream market, recent studies found that less than 25% of PAEs' revenues contributed to innovation, and that "less than two percent of losses in wealth caused by PAEs passed through to independent inventors". See Popofsky & Laufert, *supra* note 49, at 2 and related sources.

<sup>53</sup>Operating companies generally purchase SEPs for perfectly legitimate defensive purposes. For example, to dissuade other SEP-holders from initiating litigation, thus avoiding unnecessary costs, or simply to be able to cross-license with other SEP-holders. In both cases, the purchase of SEPs yields a procompetitive outcome. See, *inter alia*, Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in *INNOVATION POLICY AND THE ECONOMY* 119, 127 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2001), available at <http://faculty.haas.berkeley.edu/shapiro/thicket.pdf>. See also Popofsky & Laufert, *supra* note 49, at 5.

<sup>54</sup>See Popofsky & Laufert, *supra* note 49, at 4.

<sup>55</sup>Morton & Shapiro, *supra* note 50, at 471.

increases the risk that the operating company may use the PAE as a vehicle to aggressively enforce its patents against competitors.

## 5.1 Potential Issues

### 1. Risk of patent hold-up

Since PAEs have much stronger incentives than operating companies to extract the highest value from their IP, the SEP transfer increases the risk of patent hold-up by raising the costs to implement the standard.

PAEs can disregard the FRAND commitment given by the previous owner to the SSO, and demand exorbitant/excessive royalties. PAEs may also attempt to extract higher royalties by licensing only end-product manufacturers or sellers, and exclude component-level implementers. Although the case law in Europe is clear that the FRAND commitment binds not only the original owner but also the purchaser of an SEP,<sup>56</sup> in practice PAEs often find a way to circumvent this obligation and demand higher/un-FRAND royalties.<sup>57</sup>

PAEs may use the threat of injunctions to force implementers on a downstream market to agree to un-FRAND/excessive royalties. The threat of litigation is indeed a “nuclear weapon” that PAEs have and often use to extract monopoly rents from their IP. In the U.S., PAEs have become one of the main sources of litigation. In 2012, PAE-initiated litigation accounted for 62% of all infringement suits.<sup>58</sup> A recent study concluded that the direct costs of PAEs litigation amounted to \$29 billion in 2011<sup>59</sup>—a 400% increase compared to 2005.<sup>60</sup> The situation is not much different in Europe, where a study commissioned by the European Commission concluded that the total cost of IP litigation in 2004 amounted to over €306 million.<sup>61</sup> Similarly, a

<sup>56</sup>See Commission Horizontal Guidelines, at ¶ 285. See also the Commission’s Press Release concerning Bosch’s transfer of declared SEPs to IPrCom, Press Release, European Commission, Antitrust: Commission Welcomes IPrCom’s Public FRAND Declaration, Memo/09/549, Dec. 10, 2009, available at [http://europa.eu/rapid/press-release\\_MEMO-09-549\\_en.htm](http://europa.eu/rapid/press-release_MEMO-09-549_en.htm).

<sup>57</sup>Moreover, certain PAEs conceal their patent portfolios through holdings. See Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1, at ¶¶ 14, 27 (2012), [http://stl.stanford.edu/pdf/feldmangiants\\_-\\_among-us.pdf](http://stl.stanford.edu/pdf/feldmangiants_-_among-us.pdf).

<sup>58</sup>Alexander Italianer, *Shaken, not Stirred. Competition Law Enforcement and Standard Essential Patents*, Mentor Group – Brussels Forum, Brussels, Apr. 21, 2015.

<sup>59</sup>These costs include legal costs, settlement costs, and other costs for resolved lawsuits, unresolved lawsuits, and non-litigated assertions.

<sup>60</sup>James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 22-24, 48 (Boston Univ. School of Law Working Paper No. 12-34, 2012), 99 CORNELL L. REV., available at <http://www.bu.edu/law/faculty/scholarship/workingpapers/revcov.html>.

<sup>61</sup>See CJA Consultants Ltd, European Policy Advisors, *Patent Litigation Insurance – A Study for The European Commission on The Feasibility of Possible Insurance Schemes Against Patent Litigation Risks*, 46 (2006), available at [http://ec.europa.eu/internal\\_market/indprop/docs/patent/studies/pli\\_appendices\\_en.pdf](http://ec.europa.eu/internal_market/indprop/docs/patent/studies/pli_appendices_en.pdf).

study of patent litigation in the United Kingdom concluded that PAEs litigation amounted to 11% of the total patent litigation between 2000 and 2010.<sup>62</sup>

In sum, if the PAE's "outsized threat" is large and credible enough, the targeted implementer is likely to pay more than a reasonable royalty, especially if the management is risk averse.<sup>63</sup>

## 2. Risk of royalty stacking

Economic theory known as the "Cournot complements" suggests that the splitting of complements among multiple owners results in an inefficient outcome: cumulatively higher prices.<sup>64</sup> The theory suggests that consumers are better off if products that are complementary from the demand side are produced and sold by a single company.

Royalty stacking is just a modern example of the complements problem. Royalty stacking occurs when a standard implementer faces license claims and related royalty requests from multiple patent-holders, each of whom expects to negotiate a license without taking other patent-holders into consideration. Thus, the standard implementer faces a royalty stack, which can reach the point of making the implementer's business uneconomical and ultimately harm competition, innovation, and consumers.

As mentioned above, royalty stacking is particularly acute in the ICT industry, which is characterized by significant horizontal complementarities, "cumulative innovation" and dispersed patent ownership. Devices, such as smartphones and computers, implement thousands of patents, including patents declared essential to a standard (e.g. the Wi-Fi alone is estimated to implement some 3,000 complementary SEPs).<sup>65</sup>

Certain SEP-holders publicly pledge to avoid royalty stacking, e.g. by self-imposing a cumulative royalty cap.<sup>66</sup> This pledge becomes ineffective, however, if only some SEPs, rather than the entire portfolio, are transferred. Unless the original SEP-holder reduces its royalty demands in proportion to the royalties

<sup>62</sup>See Christian Helmers et al., *Is There a Patent Troll Problem in the U.K.?*, 24 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 509, 511510-12 (2014).

<sup>63</sup>Morton & Shapiro, *supra* note 50, at 471-472.

<sup>64</sup>AUGUSTIN COURNOT, *RESEARCHES INTO THE MATHEMATICAL PRINCIPLES OF THE THEORY OF WEALTH* (Nathaniel T. Bacon trans., The Macmillan Co. 1987) (1838).

<sup>65</sup>We have explained above why it is important to consider the aggregate level of royalties when negotiating a FRAND license.

<sup>66</sup>For example, for its declared cellular SEPs spanning multiple generations of standards, Nokia pledged not to demand royalties exceeding 2% of the price of the end-product. See Eric Stasik, *Royalty Rates And Licensing Strategies For Essential Patents On LTE (4G) Telecommunication Standards*, LES NOUVELLES, Sept. 2010, 117, available at <http://www.investorvillage.com/uploads/82827/files/LESI-Royalty-Rates.pdf>.



sought by the new owner, the implementer will need a license from, and pay royalties to, two patent holders rather than just one. This is assuming that the operating company splits its portfolio with only one entity. The risk and magnitude of royalty stacking increases with the number of entities each buying a piece of the portfolio. Recent examples of SEP-holders who engaged in these “multiple splits” include Nokia and Ericsson.<sup>67</sup>

### 3. *Transfer of an SEP-holder’s subset of its portfolio to a hybrid-PAE*

The transfer of only part of a portfolio of SEPs is even more concerning when an operating company maintains some level of influence or control over the PAE’s licensing business (henceforth “hybrid-PAE”). For example, the operating company may transfer certain SEPs in exchange for a portion of the royalties that the PAE will collect, while continuing to be fully licensed to the transferred SEPs.

In this case, the interests of the operating company and the PAE are fully aligned. They both want to secure the highest return on their respective investment. Moreover, the operating company may have an incentive to raise its rivals’ costs as a strategy to gain market share, i.e. beyond the simple interest in the revenues generated through licensing.<sup>68</sup>

### 4. *The regulators’ approach to SEP transfers*

The risks behind SEP transfers outlined above are well known, and key enforcers have recently criticized certain transfers of SEPs to PAEs. For example, in *The Evolving IP Marketplace*, the U.S. FTC recognized that PAEs “can distort competition in technology markets, raise prices and decrease incentives to innovate”.<sup>69</sup> In 2011, the White House found that “a review of the evidence suggests that, on balance, patent assertion entities have had a negative impact on innovation and economic growth”.<sup>70</sup> More recently, however, the White House revised its initial assessment, using softer tones to describe the potential outcome of these licensing practices.<sup>71</sup>

In Europe, there is no precedent or guidance from the European Commission on the compatibility of these licensing practices with EU competition law. In general,

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<sup>67</sup>Nokia, e.g., has transferred some of its patents declared essential to wireless telecommunications standards to Vringo, others to Sisvel, Core Wireless Licensing. Ericsson has transferred patents declared essential to communications standards to Sisvel and Unwired Planet. See, e.g., Florian Mueller, *Privateering: Let’s Name And Shame Companies That Feed Patent Trolls – Please Help Complete The List*, FOSS PATENTS, May 12, 2015, <http://www.fosspatents.com/2015/05/privateering-lets-name-and-shame.html>.

<sup>68</sup>In this case, for example, the operating company may suggest a list of rivals that the PAE can target.

<sup>69</sup>See Fed. Trade Comm’n, *supra* note 52.

<sup>70</sup>See Executive Office of the President, *Patent Assertion and US Innovation*, Jun. 2013, available at [https://www.whitehouse.gov/sites/default/files/docs/patent\\_report.pdf](https://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf).

<sup>71</sup>See Ron D. Katznelson, White House “Patent Troll” Report Challenged under the Federal Information Quality Act, PATENTLY O, Apr. 2015, available at <http://patentlyo.com/patent/2015/04/challenged-federal-information.html>.

the Commission seems less concerned than its U.S. counterparts. The European Commission's former Director General for Competition, Alexander Italianer not too long ago commented that PAEs have been less active in Europe, for several reasons, including: (i) the loser pays principle that applies in litigation before EU courts that makes litigation less attractive to PAEs; (ii) damage awards that are generally significantly lower in Europe compared to the U.S.; and (iii) the fact that EU courts are specialist patent courts, which reduces uncertainty concerning the outcome of litigation. It remains to be seen if this means that the European Commission will not intervene in the debate with something more than a statement by its Director General. It has been observed that the introduction of a Unitary European patent enforceable in all participating Member States may further increase the PAEs' incentives to litigate, as it will bring down litigation costs.<sup>72</sup>

In the meantime, the legality of the transfer of a subset of the SEP-holder's portfolio to a PAE continues to be debated before national courts. In a series of judgments from January 2016, the Düsseldorf Regional Court concluded that the SEP transfer did not amount to an abuse of dominant position contrary to Art. 102 TFEU (nor Art. 101 TFEU).<sup>73</sup> The court stated that the goal to increase licensing profits from the transferred SEPs does not restrict competition and therefore is not abusive under Art. 102 TFEU, as long as the SEP-holder abides by its FRAND commitment.<sup>74</sup>

This is the LG Düsseldorf's opinion. Other courts in Germany and other EU Member States may take a different approach to portfolio splitting and its potential to restrict competition. For example, the LG Düsseldorf's decision may be criticized because, logically, in order to continue to be FRAND post-transfer, the FRAND royalty demanded pre-transfer must have been under- FRAND. Or at least, the court's decision implies that the SEP-holder did not charge as much as it legally could before the transfer. This, however, seems unlikely and contrary to the very purpose of PAEs' patent acquisitions – i.e. to enhance the monetization of the acquired patents.<sup>75</sup>

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<sup>72</sup>See Helmers, *supra* note 62.

<sup>73</sup>See Cases 4b O 120/14, 4b O 122/14 and 4b O 123/14. The court also rejected the plaintiff's allegations that the SEP transfer infringed Art. 101 TFEU.

<sup>74</sup>Unwired Planet sued Samsung for alleged infringement of certain SEPs declared essential to the GSM and the LTE standards. Ericsson was the original owner of the patents at issue and had transferred them in 2013, together with claims for past damages to Unwired Planet. Samsung argued that the transfer infringed, *inter alia*, Art. 101 and/or Art. 102 TFEU because it reflected Ericsson and Unwired Planet's "portfolio splitting" strategy to increase the royalty rates contrary to Ericsson's FRAND commitment. Under the SEP transfer agreement between Ericsson and Unwired Planet, the latter honoured Ericsson's FRAND commitment. It seems that Unwired Planet had issued a separate FRAND declaration to ETSI. See cases 4b O 120/14, 4b O 122/14 and 4b O 123/14. See also *Düsseldorf Regional Court rules on SEP "portfolio splitting"*, Apr. 8, 2016, available at <http://www.lexology.com/library/detail.aspx?g=82603b83-1378-4032-a638-b8c7cdc2856d>.

<sup>75</sup>Morton & Shapiro, *supra* note 50, at 482.

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