

# From Transfer of Technology to Innovation Through Access

Peter Picht

## Contents

1	Introduction .....	510
2	Standards, Standard-Essential Patents and the Case for Access Rights .....	511
2.1	Benefits and Inherent Dangers of Standards and SEPs .....	511
2.2	Questionable Conduct Related to SEPs .....	512
2.3	SEP Issues as a Case for Access Rights .....	514
3	Can TRIPS Cope with the SEP-Related Need for Access? .....	517
3.1	Fundamental Level .....	517
3.2	EU Competition Law and TRIPS .....	519
3.3	Reconciling Patent Law Remedies and TRIPS .....	522
4	Summary: What SEPs Tell Us About TRIPS and Innovation Through Access .....	525
	References .....	525

**Abstract** While, in a traditional perception, IP law is all about protection and exclusivity, recent developments such as the strategic use of standard-essential patents (SEPs) present access rather than exclusion as a key driver for innovation. Although standardization generates important benefits to society it does also entail substantial risks such as the abuse of SEPs. From an analysis of important SEP-related practices it becomes evident that they constitute an important context in which a new demand for access to proprietary technology arises. When TRIPS is put to their litmus test, the result is double-edged. On the level of its fundamental provisions TRIPS cannot only accommodate the need for access. With its goal to balance the interests of technology owners and those who urge for a right to use protected technology TRIPS is even in the position to foster fair access. However, specific provisions on access requirements, such as Article 31 TRIPS on compulsory licenses, prove unsatisfactory. Until reform is brought about, the existing set of provisions must be read appropriately.

---

Dr. Peter Picht, LL.M. (Yale) is Senior Research Fellow at the Max Planck Institute for Innovation and Competition.

P. Picht (✉)

Max-Planck-Institute for Innovation and Competition, Munich, Germany

e-mail: [peter.picht@ip.mpg.de](mailto:peter.picht@ip.mpg.de)

## 1 Introduction

Technology transfer through and in exchange for the implementation of intellectual property (IP) protection—this trade-off lies at the roots of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)<sup>1</sup> and it is deeply entrenched in the Agreement’s provisions (cf. Preamble and Articles 7, 8, 66). Vindicating, in its traditional interpretation, strong, exclusive IP rights, it was i.a. meant to support IP-based exporting industries mainly in the developed countries.<sup>2</sup> Today, however, the view on IP protection is changing in some respects, not least in countries heavily exporting IP-based goods. In an “overprotected” environment, access rather than exclusion is increasingly regarded as a key driver for innovation and prosperity.<sup>3</sup> How does the TRIPS Agreement fit in with this paradigm shift?

This contribution discusses these questions with regard to technology standards and standard-essential patents (SEPs). This is not a random choice: Standards are an increasingly important phenomenon in markets that are heavily based on IP.<sup>4</sup> Pointedly, one might say that we are—at least with regard to ICT<sup>5</sup> markets—living in an era of standardization. As we will see, standards can convey great benefits but they may also harm competition and, ultimately, society (cf. below Sect. 2.1). Since many of the potentially harmful effects of standardization result from a lack of access (on acceptable conditions) to standard-essential patents (cf. below Sect. 2.2), the “era of standardization” may also have to be made an “era of access”. This is true not only within particular IP jurisdictions but also in a transnational dimension. From wherever standards originate, they are liable to have an impact on several countries’ markets. Access to standardized and IP-protected technology is certainly key to the competitiveness of developing countries. But market participants in developed countries do suffer as well when standards access is made proprietary and restricted. In many jurisdictions, competition law (cf. below Sect. 3.2) as well as patent law (cf. below Sect. 3.3) instruments are being developed and used to achieve an acceptable level of access.<sup>6</sup> Are they in line with the fundamental goals (cf. below Sect. 3.1) of TRIPS and its more specific provisions (cf. below Sects. 3.2.2 and 3.3.2)? Turning to a broader perspective (cf. below Sect. 4), do the results from this analysis indicate

---

<sup>1</sup> H. Ullrich (2004), Expansionist Intellectual Property Protection and Reductionist Competition Rules: A TRIPS-Perspective, *J. Int’l Econ. L.* 2004, 401; D. Gervais (2012), *The TRIPS-Agreement: Drafting History and Analysis*, No. 2.342.

<sup>2</sup> G.E. Evans (1994), Intellectual Property as a Trade Issue – The Making of the Agreement on Trade-Related Aspects of Intellectual Property Rights, 18 *World Comp. L. Rev.* 1994, 141 et seq.

<sup>3</sup> Cf. for example G. Becker (2013), *On Reforming the Patent System*; R. Posner (2013), *Patent Trolls*.

<sup>4</sup> T.P. Stoll (2014), *Are You Still in? – The Impact of Licensing Requirements on the Composition of Standard Setting Organizations*, *Essays on the Economics of Patents, Standards, and Innovation*, pp. 41 et seq.

<sup>5</sup> Information and Communications Technology.

<sup>6</sup> Another tool, not addressed by this contribution but at least potentially important, are SSO rules that require patent holders to display a certain conduct, such as disclosing SEPs, committing to FRAND licensing, etc.

that TRIPS allows for a more access-oriented approach to IP protection? May it even lead the way toward a transnational IP system that balances access and protection in a new way? Could it thereby spare developing countries the “overprotection phase” that developed countries are currently struggling to overcome?

## 2 Standards, Standard-Essential Patents and the Case for Access Rights

### 2.1 *Benefits and Inherent Dangers of Standards and SEPs*

Technology standards are created in two major ways: “De facto” standards result from the success of a company’s technical solution in the market. Often as a result of prolonged and costly “standards wars”, the products of the most successful competitor, together with the technological standard that they are based on, put the rival products out of the market.<sup>7</sup> Collective standards,<sup>8</sup> in contrast, are set in a consensual process by “standard setting organizations” (SSOs).<sup>9</sup> Beside independent experts, the competing participants of the respective market are the key members of these organizations.<sup>10</sup> At first sight one might wonder why competitors would engage in such close cooperation. The reason is that standard setting yields substantial positive effects which incentivize market participants to cooperate. One of these advantages is the avoidance of the aforementioned standards wars. Another is the possibility to standardize solutions which are technologically superior but which would not have stood a chance in an unstandardized market because they are not supported by a powerful market player. Furthermore, companies that base their production on the standard know that their goods will be compatible with complementary products, such as accessories. Finally, products with a shared technological base are attractive to consumers because they are easy to compare and combine. These and some other<sup>11</sup> positive effects of de jure standard setting also explain why courts and competition authorities tolerate and even appreciate standard setting<sup>12</sup>

---

<sup>7</sup> Famous examples for such standards wars are the VHS-Betamax battle or the fight HD-DVD vs. Blu-Ray; cf. P. Grindley (1995), *Standards, Strategy and Policy*, pp. 74 et seq.

<sup>8</sup> This type of standard is oftentimes referred to as “de jure-standard”. Importantly, however, such standards are sometimes, but not necessarily declared binding by an act of law. Even absent codification, collective standards can and do often dominate the markets for which they are set because of their wide acceptance by market participants.

<sup>9</sup> American Bar Association Section of Antitrust Law (2004), *Handbook on the Antitrust Aspects of Standards Setting*, pp. 4 et seq.

<sup>10</sup> Ibid.

<sup>11</sup> For an overview, see P. Picht (2014), *Strategisches Verhalten bei der Nutzung von Patenten in Standardisierungsverfahren aus der Sicht des europäischen Kartellrechts*, pp. 179 et seq.

<sup>12</sup> Cf. e.g. U. S. Department of Justice & Federal Trade Commission (2007), *Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition*, pp. 33 et seq.

although it could be seen as a cartel-like agreement of competitors to exclude alternative technical solutions from the market.<sup>13</sup>

For a number of markets, standard setting has become a powerful determinant. In the consumer electronics sector, for example, the rapid succession of product generations and high interoperability requirements necessitate a common technological base. In spite of this success, standard setting is not unreservedly “good”, for it involves substantial risks to innovation-driven competition. One<sup>14</sup> of the major issues arises from the interaction between standards and patents on standardized technologies. Once a standard is implemented, market participants are (to a greater or lesser extent) “locked in” to it, i.e. they cannot easily switch to another technical solution without incurring costs and other disadvantages.<sup>15</sup> Due to this effect, a patent on (parts of) the standardized technologies—a so-called standard-essential patent (SEP)—vests its holder with far-reaching power: Enjoying exclusivity rights with regard to the patented technology she can, in principle, refuse access to the technology altogether or choose the conditions under which it is granted.<sup>16</sup> As access to the patented standard-essential technology equals access to the standard, SEP holders might control entire standard-based markets. In the course of the last two decades, a number of cases have driven home this point and demonstrated the need for legal intervention. The following section will give a short overview on three prominent subsets, namely patent ambushes, the enforcement of acquired SEPs by non-producing entities (NPEs), and OEM-patent wars in the telecommunications industry. This is, however, not to mean that those are the only questionable forms of conduct. Exclusive cross-licensing of SEPs, for instance, might harm competition as well.

## 2.2 *Questionable Conduct Related to SEPs*

### 2.2.1 Patent Ambushes

Patent ambush cases, such as *Rambus*, were most prominent in the early days of SEP-related competition law enforcement. During a standard-setting procedure by the standard setting organization (SSO) JEDEC, the software developer and

<sup>13</sup> Agreements obliging the parties to use particular technologies can in fact violate Article 101 TFEU; cf. ECJ, IAZ v. Commission, joined cases C 96-110/82, EU:C:1983:310.

<sup>14</sup> Another important aspect is the risk that the standard-setting process is used, by the participating competitors, to cover cartel agreements violating Article 101 TFEU. Cf. on these and further aspects P. Picht (2014), *Strategisches Verhalten bei der Nutzung von Patenten in Standardisierungsverfahren aus der Sicht des europäischen Kartellrechts*, pp. 183 et seq.

<sup>15</sup> On lock-in, see e.g. J.S. Miller (2007), *Standard Setting, Patents, and Access Lock-in: RAND Licensing and the Theory of the Firm*, 40 *Ind. L. Rev.* 2007, 351.

<sup>16</sup> P. Chappatte (2009), *FRAND Commitments – The Case for Antitrust Intervention*, 5 *Euro. Comp. J.* 2009, 319, 325 et seq.

licensor Rambus concealed its SEPs.<sup>17</sup> Once the standard was implemented, Rambus disclosed its patents and demanded royalties that were higher than its pre-standardization rates. Fierce litigation between Rambus and various standard users ensued, as well as competition proceedings in both the US and the EU. In the EU, a Commitments Decision by the European Commission obliged Rambus to grant fair, reasonable, and non-discriminatory terms (FRAND)<sup>18</sup> or even royalty free-licenses.<sup>19</sup> In the US, however, an FTC<sup>20</sup> order to the same effect was quashed by the DC Circuit for failure to demonstrate the anticompetitive effect of high royalty rates.<sup>21</sup>

### 2.2.2 Enforcement of Acquired SEP by NPE

So far, patent ambush cases have not become as rampant as sometimes expected. This is even truer for competition law intervention<sup>22</sup> against the exploitation of SEPs by non-practicing entities, often and less politely referred to as “patent trolls”. In a widely noticed case, the EU Commission intervened against the non-practicing entity (NPE) IPCOM that, after acquiring SEPs from Robert Bosch GmbH, refused to honor the FRAND commitment made by Bosch and demanded high royalties from standard users instead. As a result, IPCOM renewed the commitment and formal competition proceedings never got going.<sup>23</sup> Nonetheless, to conclude from litigation counts that SEP trolling is negligible would be at least premature. Many NPE attacks on standard users are probably settled out of court<sup>24</sup> and never get the attention of competition authorities.

---

<sup>17</sup> On the facts of the Rambus case, see Federal Trade Commission, *In the Matter of Rambus Inc.*, Administrative Complaint of 18 June 2002, Docket No. 9302.

<sup>18</sup> Fair, reasonable and non-discriminatory.

<sup>19</sup> European Commission, *Rambus*, Decision of 9 December 2009, Case COMP/38.636.

<sup>20</sup> Federal Trade Commission.

<sup>21</sup> *Rambus Inc. v. FTC*, 522 F. 3d 456 (D.C. Cir. 2008).

<sup>22</sup> Private patent enforcement litigation by NPEs does, however, flourish; cf. F. Mueller (18 June 2013), Patent Firm IPCOM settles with T-Mobile, will be more active in U.S. with ex-Hitachi Patents, FOSS Patents Blog Entry of 18 June 2013.

<sup>23</sup> European Commission (2012), Antitrust: Commission welcomes IPCOM’s public FRAND Declaration, press release of 10 December 2012, MEMO/09/549.

<sup>24</sup> For instance, the \$3 billion in licensing earnings reported by the NPE “Intellectual Ventures” do most likely result in large part from out of court-settlements; cf. A. Robertson (2014), The Ultimate Patent Troll is going to Trial against Google and Motorola, *The Verge* of 4 February 2014. As a further example for troll activity, see K. Finley (2014), World’s Most Innovative Patent Troll sues the Government, *WIRED* of 15 January 2014.

### 2.2.3 SEP Wars in the Telecommunications Industry

Lack of volume or judicial preoccupation is certainly no characteristic feature of our third subset of cases: Telecommunications industry giants like Apple, Samsung, Motorola/Google or the Chinese newcomers Huawei and ZTE have started fierce legal battles based on their respective SEPs.<sup>25</sup> The attacking party's core argument in these struggles is usually that the opponent's products violate the SEP. The aim of the attack varies, however. Sometimes the SEP holder tries to enforce high royalty payments;<sup>26</sup> sometimes he tries to prevent the opponent from using the patented technology altogether.<sup>27</sup> Underlying these immediate goals, many of the cases seem to have an additional "strategic level".<sup>28</sup> It is hard to believe that flourishing high-tech companies fiercely fight over an alleged SEP violation only because royalty money may be made or lost and not because they have long-term market positions in mind.

As in the patent ambush cases, European competition authorities are quite critical towards SEP holders' claims,<sup>29</sup> and this time they are joined not only by US antitrust agencies but also by US courts.<sup>30</sup> It may be that the massive use of SEPs as a means for economic warfare made US judges realize that unfettered latitude for patent holders can, in the standardization context, harm innovation and the spirit of patent protection.

### 2.3 SEP Issues as a Case for Access Rights

Protection through exclusivity rights has been the patent system's long-established core tool. Rewarding and empowering the innovator was considered the appropriate incentive for fostering innovation. Standards-based markets and SEPs show that this concept has to be revised—at least for certain areas. In an archetypical patent-product-producer structure, a patent holder can realize, as it were, much of the

---

<sup>25</sup> See e.g. *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872 (W.D. Wash. 2013); *Apple Inc. v. Samsung Electronics Co., Ltd.*, 735 F.3d 1352 (Fed. Cir. 2013); ECJ, *Huawei Technologies, C-170/13*, ECLI:EU:C:2015:477.

<sup>26</sup> E.g. *Microsoft Corp. v. Motorola, Inc.*, 696 F.3d 872 (W.D. Wash. 2013).

<sup>27</sup> E.g. *Apple Inc. v. Samsung Electronics Co., Ltd.*, 735 F.3d 1352 (Fed. Cir. 2013).

<sup>28</sup> Cf. on the background of the *Huawei v. ZTE* lawsuit fought between two (at least in part) government-controlled Chinese companies J. Drexl (2014), *Zugang zu standardessenziellen Patenten als moderne Regulierungsaufgabe: Wie reagiert das EU-Kartellrecht auf Patentkriege zwischen chinesischen Unternehmen.*

<sup>29</sup> Cf., for instance, European Commission (2012), *Antitrust: Commission sends Statement of Objections to Samsung on Potential Misuse of Mobile Phone Standard-Essential Patents*, press release of 21 December 2012.

<sup>30</sup> As an impressive example, see Judge Posner's ruling dismissing Motorola's SEP infringement action against Apple: *Apple, Inc. v. Motorola, Inc.*, 869 F.Supp.2d 901 (N.D. Illinois, Eastern Division 2012).

patent's innovative potential single-handedly by producing and marketing goods which are based on the protected technology. Technologies that are integrated in generic standards, though, form part of a shared base whose innovative potential is subsequently tapped by a multitude of technologies and goods. A SEP holder would usually be unable to generate the same degree of innovation alone. Her blocking the use of the standard therefore tends to eliminate more innovative energy than she can deploy herself. Even if the patent holder generates large profits by producing exclusively on the basis of the standard or by demanding high SEP royalties, the innovation-incentivizing effect tends to be limited. This is because the chance of repeating a one patent-one product success is much higher than the chance of controlling an implemented standard via an SEP.<sup>31</sup> The success of standards-based products, in contrast, is likely to fuel standards-based innovation and thereby standards-based competition. In a way, patent law's traditional exclusivity incentive needs to be limited on the lower, namely the standard level, in order to be safeguarded on the higher, standards-based level. Stating the issue from a different angle: Patent protection blocks competition by way of imitation in order to generate competition by way of substitution.<sup>32</sup> Since SEP-protected technology can hardly be substituted once lock-in has occurred, standard-based competition—and, for that matter, competition during the standard setting phase—need to be protected all the more.<sup>33</sup>

The need to secure fair<sup>34</sup> access to standards becomes ever more pressing as the likelihood for SEP situations rises. In a globalizing economy shaped by rapid technological change, standards are of growing importance because they keep products interoperable and thereby globally marketable. At the same time, global patent density increases as patent protection expands rapidly in developing countries,<sup>35</sup> and companies patent even small innovative steps.<sup>36</sup> As a result, complex

---

<sup>31</sup> An exception may apply with regard to subsequent generations of standards that are quite similar. A SEP on one of the standard generations is not then unlikely to catch subsequent generations as well.

<sup>32</sup> J. Drexl (2011), *Intellectual Property in Competition: How to Promote Dynamic Competition as a Goal*, in J. Drexl et al. (Eds.), *Common Ground for International Competition Law*, pp. 210, 220.

<sup>33</sup> J. Drexl et al. (2006), *Comments of the Max Planck Institute for Intellectual Property, Competition and Tax Law on the Directorate-General Competition Discussion Paper of December 2005 on the Application of Article 82 of the Treaty to Exclusionary Practices*, IIC 2006, 558, 567 et seq.

<sup>34</sup> It is important to notice that “access” does not mean access regardless of its conditions but access on fair terms. Neither can standard users compete vigorously in the market if they have to pay suffocating royalties for standard-essential technologies. Nor do unrewarding licensing obligations foster the long-term readiness of SEP holders to invent and to make their inventions available for standardization.

<sup>35</sup> For instance, the annual rate of patents granted in China increased by a factor of 15 between 2001 and 2012; SIPO Annual Reports, *Evolution of Granted Patents*, available at [http://documents.epo.org/projects/babylon/eponet.nsf/0/116E0662A216E8A4C125761000482C99/\\$File/evolution\\_of\\_granted\\_patents\\_cn.gif](http://documents.epo.org/projects/babylon/eponet.nsf/0/116E0662A216E8A4C125761000482C99/$File/evolution_of_granted_patents_cn.gif).

<sup>36</sup> From an empirical point of view T.P. Stoll (2014), *Are You Still in? – The Impact of Licensing Requirements on the Composition of Standard Setting Organizations*, *Essays on the Economics of Patents, Standards, and Innovation*.

high-tech products—such as smartphones—make use of a multitude of standards and each of those standards can be covered by hundreds or even thousands of patents.<sup>37</sup> SEP stacking vests many players with the option to block or prey upon a standard and consequently such conduct is more likely to happen. The assumption that (alleged) SEPs are often weak<sup>38</sup> is of precious little help since market participants do usually not know whether a particular patent will hold in court. The resulting uncertainty may, together with the high risks and costs involved by an attack on the patent, cause market participants to accept supra-competitive royalties or to refrain from using the standard altogether.<sup>39</sup>

By this time, it should be clear that the need for access to standards does not square with a developed/developing countries dichotomy.<sup>40</sup> Standards are often implemented in large regions or even globally. Participants of the respective markets all need access, regardless from which country they operate. Certainly, standards-based production is particularly important for developing countries, which are large scale-producers of consumer goods. Yet, SEP holders may also be—and increasingly are<sup>41</sup>—based in developing countries, not least because these countries are often home to thriving high-tech sectors. It is therefore anything but an extravagant idea that European, US or Japanese standard users will more and more frequently have to come to terms with the, say, Indian holder of an SEP. Traditional, “one-way” transfer of technology concepts blur into transnational markets populated by SEP holders and standard users, operating both from developing and developed countries.

---

<sup>37</sup> By way of example: 72 firms claim to hold in total 1,227 unique essential patents in ETSI’s UMTS/3G standard; T.P. Stoll (2014), *Are You Still in? – The Impact of Licensing Requirements on the Composition of Standard Setting Organizations*, *Essays on the Economics of Patents, Standards, and Innovation*, pp. 42 et seq.

<sup>38</sup> Cf. also the unsettling estimates on the overall percentage of unjustly granted patents: J.R. Allison & M.A. Lemley (1998), *Empirical Evidence on the Validity of Litigated Patents*, *AIPLA Qu. J.* 1998, 185, 205 et seq.; T. Bausch (2007), *Nichtigkeitsrechtsprechung in Patentsachen*, p. IX; D. Harhoff et al. (2013), *Patent Litigation in Europe*, ZEW - Centre for European Economic Research Discussion Paper No. 13-072, find a wide range of revocation percentages (approx. 15 %-70 % for litigated revocation claims) in various European countries for the period of 2000–2008.

<sup>39</sup> On the reduction of patent challenges in patent thickets, see D. Harhoff, G. von Graevenitz & S. Wagner (2013), *Conflict Resolution, Public Goods and Patent Thickets*, CEPR Discussion Paper Series No. 9468.

<sup>40</sup> It therefore comes as no surprise that antitrust agencies of developing countries start to focus on SEP issues. An example is provided by the investigation of Ericsson’s assertion of its SEP launched by the Competition Commission of India; Competition Commission of India Order under Sec. 26(1) of The Competition Act 2002 of 16 January 2014, Case No. 76/2013 – In Re Intex Technologies, Ltd., and Telefonaktiebolaget LM Ericsson (Publ), available at: <http://www.cci.gov.in/May2011/OrderOfCommission/261/762013.pdf>.

<sup>41</sup> ECJ, Huawei Technologies, C-170/13, ECLI:EU:C:2015:477.



### 3 Can TRIPS Cope with the SEP-Related Need for Access?

#### 3.1 Fundamental Level

TRIPS contains no specific rules on standard setting and SEPs. By way of implication, Articles 7, 8 and 40 TRIPS are core provisions for the fundamental level of our analysis. At first sight, Article 7 TRIPS seems to bode ill for an access-oriented approach since it proclaims “[t]he protection and enforcement of intellectual property rights” to be TRIPS’ objectives. However, the article goes on to sketch the qualifications of this protection. IP protection, it says, “should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations”. Hence, TRIPS does not guarantee an IP protection which is unlimited and exists for its own sake. It protects in order to achieve the goals stated in Article 7 TRIPS. IP protection must be questioned if it appears to harm rather than to further these goals.<sup>42</sup>

Article 8(2) TRIPS drives home this point by stating: “Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology”. States can, we are thus told, actively limit IP protection if this protection is perverted into a means to harm TRIPS’ goals.

Article 40 TRIPS deals with the anticompetitive use of IP licenses.<sup>43</sup> Although this scope is much narrower than that of Articles 7 or 8 TRIPS, the provision does likewise contain a general principle and not a directly applicable rule.<sup>44</sup> Specifying the program set out in Articles 7, 8 TRIPS for the licensing context,<sup>45</sup> Article 40(1) TRIPS states that “licensing practices or conditions pertaining to intellectual property rights which restrain competition may have adverse effects on trade and may impede the transfer and dissemination of technology”. No other international agreement before<sup>46</sup> has spelled out as clearly that the use of intellectual property (licenses) can have a negative impact on the affected markets which ought not to be tolerated simply because protection had initially been granted. Instead and according to Article 40(2) TRIPS,

<sup>42</sup> Cf., with a similar general view and a similar interpretation of Article 7, 8 TRIPS, Declaration on Patent Protection: Regulatory Sovereignty under TRIPS (Version 1.0 of 15 April 2014), published in 45 IIC 2014, 679.

<sup>43</sup> In more detail on the interrelation between the paragraphs of Article 40 TRIPS cf., Bakhom and Conde Gallego (2015).

<sup>44</sup> O.F. von Gamm (1997), TRIPS und das nationale Wettbewerbs- und Kartellrecht, in E. Niederleithinger (Ed.), Festschrift Lieberknecht, pp. 197, 203.

<sup>45</sup> On the various proposals regarding the precise dogmatic relation between Articles 40 and 8 TRIPS, see O. Brand (2013), in J. Busche, P. Stoll & A. Wiebe (Eds.), TRIPS, Article 40, para. 12, with further references.

<sup>46</sup> Ibid., para. 7.

“nothing in [the] Agreement shall prevent Members from specifying in their legislation licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market”. “A Member may adopt, consistently with the other provisions of this Agreement, appropriate measures to prevent or control such practices”. Although this wording gives the Members much leeway for shaping their reaction to IP license abuse,<sup>47</sup> it is read by many<sup>48</sup> as an obligation to act in some way.

Denial of access to SEPs can violate the boundaries set by Articles 7, 8 and 40 TRIPS.<sup>49</sup> Trade restraints may be more of an indirect effect since access restrictions do not aim at the sale of patent-based goods but at their production in the first place. The “promotion of technical innovation”, however, is directly and materially affected if standard setting can, due to the patent holder’s conduct, not perform its function as a catalyst for standard-based technological progress. At the same time, such interference perturbs technology transfer both with regard to the protected technology itself and with regard to follow-up innovations. In consequence, Articles 7 and 8 TRIPS allow for measures that limit IP protection in order to secure access to standard-essential technologies. This result is confirmed and reinforced by Article 40 TRIPS. The provision is applicable because the SEP holder’s licensing policy is a key tool for making strategic use of her patent. Refusing to license a SEP, discriminating between license seekers, or demanding supra-FRAND royalties can be anticompetitive and restrain technology-transferring trade—i.e. fulfill the two intervention requirements set out in Article 40(1) TRIPS.<sup>50</sup> On the process level Article 40 TRIPS makes another important contribution: As said, standards do not halt at national boundaries, and SEP abuse can have a global impact. The consultation mechanism set out in Article 40(3) and (4) TRIPS may provide a framework for coordinating the Members’ national measures and transforming them into a supra-national SEP-strategy.

These SEP-specific results arguably indicate a broader principle: Today’s markets generate new needs for access to protected technologies and TRIPS is, due to its built-in access friendliness, ready to accommodate them.<sup>51</sup> The following two parts will explore—with regard to SEP—how this principle detected on the fundamental level translates onto the level of directly applicable TRIPS provisions.

---

<sup>47</sup> *Ibid.*, para. 23.

<sup>48</sup> H. Ullrich (2004), Expansionist Intellectual Property Protection and Reductionist Competition Rules: A TRIPs-Perspective, *J. Int’l Econ. L.* 2004, 401, 407; opposing that concept i.a. A. Heinemann (1995), *Das Kartellrecht des geistigen Eigentums im TRIPS-Übereinkommen der Welthandelsorganisation*, *GRUR Int.* 1995, 535, 538.

<sup>49</sup> In the same vein M. Bakhoum & B. Conde Gallego (2015), *TRIPS and Competition Rules: From Transfer of Technology to Innovation Policy*.

<sup>50</sup> O. Brand (2013), in J. Busche & P. Stoll (Eds.), *TRIPS, Article 40*, paras. 27 et seq.

<sup>51</sup> Arriving, in a broader perspective, at the same conclusion M. Bakhoum & B. Conde Gallego (2015), *TRIPS and Competition Rules: From Transfer of Technology to Innovation Policy*.

## 3.2 *EU Competition Law and TRIPS*

### 3.2.1 *The Competition Law Approach in a Nutshell*

Under EU competition law, on which this contribution focuses, a SEP holder can violate Article 102 Treaty on the Function of the European Union (TFEU) by denying access to its patent.<sup>52</sup> His granting access only on non-FRAND terms may constitute a violation as well, for instance if the patent holder has entered into a FRAND licensing commitment during the standard-setting process.<sup>53</sup> Where the (non-)licensing conduct of the SEP holder is abusive the same is true for patent infringement litigation that aims at enforcing his strategy.<sup>54</sup> The core remedy is an competition-law-based compulsory license which obliges the patent holder to grant access on a FRAND or royalty basis.<sup>55</sup>

### 3.2.2 *The TRIPS Perspective*

Article 31 is the main TRIPS provision on competition-law-based compulsory licenses.<sup>56</sup> By specifying the requirements for such licenses Article 31(k) TRIPS implies that they may permit the use of protected technology “to remedy a practice determined [. . .] to be anti-competitive”. Furthermore the provision acknowledges the “need to correct anti-competitive practices”. Article 31(c) TRIPS confirms this position with regard to patents on semi-conductor technology. Although Article 31 (c) and (k) TRIPS do, in principle, favor compulsory licenses when they are

---

<sup>52</sup> P. Picht (2013), Von eDate zu Wintersteiger – Die Ausformung des Art. 5 Nr. 3 EuGVVO für Internetdelikte durch die Rechtsprechung des EuGH, GRUR Int. 2013, 22; T. Körber (2013), Standardessentielle Patente, FRAND-Verpflichtungen und Kartellrecht, pp. 59 et seq. Cf. also ECJ, Microsoft v. Commission, T-201/04, EU:T:2007:289, paras. 649 et seq.

<sup>53</sup> On this and further types of abusive conduct P. Picht (2013), Von eDate zu Wintersteiger – Die Ausformung des Article 5 Nr. 3 EuGVVO für Internetdelikte durch die Rechtsprechung des EuGH, GRUR Int. 2013, 15 et seq.

<sup>54</sup> T. Körber (2013), Standardessentielle Patente, FRAND-Verpflichtungen und Kartellrecht, pp. 72 et seq. Cf. also European Commission (2012), Antitrust: Commission sends Statement of Objections to Samsung on Potential Misuse of Mobile Phone Standard-Essential Patents, press release of 12 December 2012, IP/12/1448; European Commission (2013), Antitrust: Commission sends Statement of Objections to Motorola Mobility on Potential Misuse of Mobile Phone Standard-Essential Patents, press release of 6 May 2013, IP/13/406.

<sup>55</sup> P. Picht (2013), Von eDate zu Wintersteiger – Die Ausformung des Article 5 Nr. 3 EuGVVO für Internetdelikte durch die Rechtsprechung des EuGH, GRUR Int. 2013, 24 et seq.

<sup>56</sup> The wording of Article 30 TRIPS (“exceptions to the exclusive right conferred by a patent”) might cover compulsory licenses as well. However, the dichotomy of Article 31 TRIPS (dealing with licenses) and Article 30 TRIPS (dealing with other “exceptions”) suggests that compulsory license remedies to SEP abuse should be based on Article 31 TRIPS. Cf. further S. Reyes-Knoche (2013), in J. Busche, P. Stoll & A. Wiebe (Eds.), TRIPS, Article 30, paras. 7 et seq.; Panel Report, Canada – Patent Protection of Pharmaceutical Products, WT/DS114/R, adopted 7 April 2000, DSR 2000:V, p. 2289; D. Gervais (2012), The TRIPS Agreement: Drafting History and Analysis, No. 2.342.

competition-law-based, they address three potential limitations to the general permission of competition-law-based licenses, namely determination of the competition violation, previous efforts to obtain a license, and remuneration.

### Determination of Competition Violation

Article 31(k) TRIPS states that, if an competition violation by the patent holder is properly determined, Members are not obliged to require efforts to obtain a license previously to the grant of a compulsory license (Article 31(b) TRIPS). Nor must they limit the license predominantly to the domestic market (Article 31(f) TRIPS). For compulsory licenses on semi-conductor technology—unless they grant public non-commercial use—Article 31(c) TRIPS does even make proper determination of anticompetitive conduct a strict requirement.

Imputed thus with great importance, the “determination” must be the result of a “judicial or administrative process” (Article 31(c) and (k) TRIPS). Competition law enforcement generates three typical situations in this regard: If EU or national courts have ruled in a competition procedure that the conduct of an SEP holder is anticompetitive, the determination requirement is clearly met. Since TRIPS explicitly allows for “administrative processes”, the same must be true for an EU Commission decision finding a competition violation. Less evident are situations where, in a patent infringement action brought by the SEP holder, a national court grants a competition-law-based compulsory license to the alleged patent infringer. According to general procedural principles in (at least) many Member States,<sup>57</sup> court rulings bind only the parties to the particular procedure. Could, from the TRIPS perspective, a jurisdiction grant compulsory licenses to other standard users based on a ruling with such limited binding power, especially since it results from patent and not from competition litigation? And could such licenses even be granted where the ruling was handed down in a state other than the license-granting state? At least in practice, the problem might be resolved because the SEP holder will grant licenses to all interested standard users in order to avoid subsequent defeats in court.

### Previous Efforts to Obtain a License

Article 31(b) TRIPS states that a compulsory license may, in principle and except for cases of emergency, “only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful

---

<sup>57</sup> As a sample, see for Spain Article 222 Ley de Enjuiciamiento Civil; for Germany § 325 Zivilprozessordnung; for Poland Article 366 Kodeks Post powania Cywilnego; for France Article 480 Nouveau Code de procédure civile.

within a reasonable period of time”. Anticompetitive behavior being “determined” however, TRIPS Members are “not obliged” to require previous licensing attempts (Article 31(k) TRIPS).

In the EU, and in Germany in particular, licensing effort requirements for the grant of competition-law-based compulsory licenses are presently under intense discussion. In its *Orange Book* decision,<sup>58</sup> the German Federal Supreme Court (Bundesgerichtshof—BGH) has established a mechanism which is quite onerous to the license-seeking party.<sup>59</sup> Refusal to grant a FRAND license on the SEP constitutes, according to the BGH, a competition violation only if the potential licensee has previously submitted a binding offer to conclude a license agreement. The terms of the offer must be such as to render its refusal by the SEP holder anticompetitive. Furthermore, the license offer must be unconditional. *Inter alia* and at least in the interpretation of *Orange Book* by lower courts, this prevents a condition subsequently which terminates the licensee’s contractual duties if the SEP is found to be invalid or not infringed. In stark contrast to this approach, the EU Commission has issued press statements which appear to sketch a much more licensee-friendly test.<sup>60</sup> Under this test, refusal to license violates Article 102 TFEU if the SEP holder has made a FRAND licensing commitment to the respective SSO and the license seeker is willing to negotiate license terms. What exactly constitutes sufficient “willingness” remains, as yet, open. Facing the evident contrast between the approaches of the BGH and the EU Commission, the Düsseldorf District Court (LG Düsseldorf) has stayed proceedings between the telecommunications hardware manufacturers Huawei and ZTE and has referred the issue of previous licensing efforts to the ECJ.<sup>61</sup>

The “not obliged” wording of Article 31(k) TRIPS is a cornerstone of TRIPS’ view on the previous effort issue. Member jurisdictions do not have to, but they can

<sup>58</sup> BGH (2009), GRUR 2009, 694, in particular 695-697.

<sup>59</sup> For a more detailed critique, see H. Ullrich (2010), Comment on the German Federal Supreme Court Decision *Orange Book Standard*, IIC 2010, 337; D. Hötte (2009), *Urteilsanmerkung zu BGH Orange-Book-Standard*, MMR 2009, 686; G.-K. De Bronett (2009), *Gemeinschaftsrechtliche Anmerkungen zum “Orange-Book-Standard”-Urteil des BGH*, WuW 2009, 899; S. Barthelmeß & N. Gauß (2010), *Die Lizenzierung standardessentieller Patente im Kontext branchenweit vereinbarter Standards unter dem Aspekt des Artikel 101 AEUV*, WuW 2010, 626.

<sup>60</sup> European Commission (2012), *Antitrust: Commission sends Statement of Objections to Samsung on Potential Misuse of Mobile Phone Standard-Essential Patents*, press release of 12 December 2012, IP/12/1448; European Commission (2013), *Antitrust: Commission sends Statement of Objections to Motorola Mobility on Potential Misuse of Mobile Phone Standard-Essential Patents*, press release of 6 May 2013, IP/13/406. On the interpretation of the press releases’ wording LG Düsseldorf (2013), GRUR Int. 2013, 547, 549; A. Verhauwen (2013), “Goldener Orange-Book-Standard” am Ende? – Besprechung zu LG Düsseldorf, Beschl. v. 21. 3. 2013 – 4 b O 104/12, GRUR 2013, 558, 559. On the parallel US approach P. Picht (2013), *Von eDate zu Wintersteiger – Die Ausformung des Article 5 Nr. 3 EuGVVO für Internetdelikte durch die Rechtsprechung des EuGH*, GRUR Int. 2013, 29.

<sup>61</sup> LG Düsseldorf (2013), GRUR Int. 2013, 547; with background details A. Verhauwen (2013). “Goldener Orange-Book-Standard” am Ende? – Besprechung zu LG Düsseldorf, Beschl. v. 21. 3. 2013 – 4 b O 104/12, GRUR 2013, 558.

make licensing efforts a prerequisite for granting a compulsory license. In this respect, the approaches of both the BGH and the Commission are clearly in line with TRIPS. Does “not obliged” also mean that member jurisdictions are entirely free in the shaping of their previous effort requirements? Articles 7 and 8 TRIPS champion access-friendliness in SEP-based lock-in situations. The same is true for Article 31(k) TRIPS since it lifts the strict previous effort-prerequisite in case of—properly determined—anticompetitive behavior. Moreover, Article 40(2) TRIPS highlights as problematic licensing conditions “preventing challenges to validity” of the licensed IP right. Hence it is, from a TRIPS viewpoint, surprising (to say the least) that German courts in the aftermath of *Orange Book* require license seekers to renounce from challenging an SEP’s validity.<sup>62</sup> All in all, excessive burdens on the seeker of an SEP license may not be in outright violation of TRIPS but they would run afoul of TRIPS’ access-friendly approach. This consideration should guide Member jurisdictions in shaping their licensing effort requirements.

### Remuneration

Article 31(h) TRIPS secures the patent holder adequate remuneration, depending mainly on “the economic value of the authorization” for the licensee. Article 31 (k) TRIPS integrates the “need to correct anti-competitive practices” into the gamut of aspects relevant for the determination of an adequate remuneration. Members are thus allowed to sanction SEP holders by granting compulsory license terms that compensate them below what would be FRAND, absent the competition violation. Without this very important modification to Article 31(h) TRIPS, anticompetitive licensing conduct might be essentially riskless, since the SEP holder could expect FRAND license terms even if sanctioned for competition violation.<sup>63</sup>

### 3.3 *Reconciling Patent Law Remedies and TRIPS*

The previous discussion has revealed that, in sum, competition law remedies to SEP abuse are in line with, and even encouraged by TRIPS. Can the same be said for remedies based on patent law?

---

<sup>62</sup> Article 40 TRIPS applies to court-ordered compulsory licenses as well; O. Brand (2013), in J. Busche, P. Stoll & A. Wiebe (Eds.), TRIPS, Article 40, para. 16.

<sup>63</sup> In detail on the appropriate shaping of compulsory SEP licenses P. Picht (2014), *Strategisches Verhalten bei der Nutzung von Patenten in Standardisierungsverfahren aus der Sicht des europäischen Kartellrechts*, pp. 519 et seq.

### 3.3.1 Patent Law Remedies

The lack of consensus on appropriate patent law tools for dealing with SEPs makes it hard to answer this question. First of all, it must be emphasized that remedies to excessive access refusal are, as yet and at least in Europe, heavily based on competition law. The US has a stronger tendency to remedy IP abuse by genuine IP law tools, such as misuse doctrines.<sup>64</sup> Even there, however, competition law looms large in SEP matters. This situation is not altogether satisfactory since the scope of patent protection is a genuine patent law issue. Competition law rules and the case-by-case intervention of competition authorities may fight the symptoms but they are not apt to get down to their roots. It is patent law that must eventually tackle patent overprotection. Various existing or new patent law instruments have been proposed to fulfill this task. But none of these proposals has, as yet, gained broad acceptance.

Suffice it to name two prominent proposals: Hanns Ullrich's<sup>65</sup> protection-limiting FRAND declaration, and Robert Merges and Jeffery Kuhn's<sup>66</sup> standards estoppel both start from the SEP holder's course of action during the standard setting process. If the SEP holder has, in this process, declared to be willing to license on FRAND terms once the standard is implemented, he cannot afterwards deviate from this commitment. Merges and Kuhn (for the US jurisdiction) base this result on a modified version of general estoppel rules, thereby focusing more on the patent *holder* and her inconsistent conduct. Ullrich (for Europe, and Germany in particular) on the contrary, focuses more on the standard-essential *patent*. In his view, the FRAND commitment has modified the patent by limiting its exclusionary power. The patent holder can no longer interdict use of the standard, which includes use of his patent, on the basis of a FRAND license.<sup>67</sup>

### 3.3.2 The TRIPS-Perspective

If these proposals were to become the accepted approach in their respective jurisdictions, would they be in line with TRIPS as well? To begin with, neither Merges and Kuhn nor Ullrich contend that the FRAND commitment establishes an ordinary licensing contract between the SEP holder and each standard user. Indeed,

---

<sup>64</sup> With a focus on copyright, see A. Katz & P.-E. Veel (2013), Beyond Refusal to Deal: A Cross-Atlantic View of Copyright, Competition, and Innovation Policies, 79 *Antitrust L.J.* 2013, 139.

<sup>65</sup> H. Ullrich (2010), Patente und technische Normen: Konflikt und Komplementarität in patent- und wettbewerbsrechtlicher Sicht, in M. Leistner (Ed.), *Europäische Perspektiven des Geistigen Eigentums*, pp. 14, 85 et seq.

<sup>66</sup> R. Merges & J. Kuhn (2009), An Estoppel Doctrine for Patented Standards, *Cal. L. Rev.* 2009, 21 et seq.

<sup>67</sup> H. Ullrich (2010), Patente und technische Normen: Konflikt und Komplementarität in patent- und wettbewerbsrechtlicher Sicht, in M. Leistner (Ed.), *Europäische Perspektiven des Geistigen Eigentums*, pp. 14, 85 et seq.

even the concept of an imputed licensing contract seems hard to defend with regard to standard users outside the SSO, standard users that is with whom the SEP holder may never have come into direct contact. Absent a licensing contract limiting, as permitted by Article 28(2) TRIPS,<sup>68</sup> the initial exclusionary power of the patent on a secondary, contractual level, the proposals affect the fundamental guarantee of this exclusionary power by Article 28(1) TRIPS.<sup>69</sup>

Article 30 TRIPS may permit a restriction since it states that member jurisdictions can “provide limited exceptions to the exclusive rights conferred by a patent”. A look at widely accepted “exceptions” under Article 30 TRIPS shows, however, that a far-reaching right to use SEPs would establish a new category of exception. In particular, such right to use is not covered by the “*Bolar* exception”,<sup>70</sup> permitting a generics manufacturer to undertake R&D activity regarding a substance that is still patent protected. Nor does it constitute prior use or non-profit use for research or educational purposes.<sup>71</sup> On the contrary, the use of SEPs by market participants is bound to generate substantial revenues, thereby exploiting the economic potential of the SEP which, in principle, belongs to the patent holders. It is this economic impact which distinguishes the proposed patent law remedies from time-honored “exceptions” and which may militate against their being based on Article 30 TRIPS unless the scope of this article is widened.<sup>72</sup>

Assuming—at least for the sake of further analysis—inapplicability of Article 30 TRIPS, the patent-law-based obligation of the SEP holder to permit FRAND use could be interpreted as a compulsory license. Hence, Article 31 TRIPS comes into play. A remedy that is based on genuine patent law must work independently from the judicial or administrative determination of a competition violation. Absent such determination, however, Article 31(c) and (k) TRIPS do no longer reduce the TRIPS requirements for the grant of compulsory licenses. The then applicable provisions in Article 31(b) and (f) TRIPS might not prove to be insurmountable obstacles—patent law will usually grant compulsory licenses only for its own jurisdiction (Article 31(b) TRIPS) and Members usually require a certain degree of previous licensing efforts even for competition law remedies although they are “not obliged” to do so under Article 31(k) TRIPS. Article 31(c) TRIPS, though, traps the compulsory license approach: For lack of a “determined” competition

<sup>68</sup> Article 28(2) TRIPS reads: “Patent owners shall also have the right to [...] conclude licensing contracts”.

<sup>69</sup> Article 28(1) TRIPS reads: “A patent shall confer on its owner the following exclusive rights: (a) where the subject matter of a patent is a product, to prevent third parties not having the owner’s consent from the acts of: making, using, offering for sale, selling, or importing for these purposes that product”.

<sup>70</sup> D. Gervais (2012), *The TRIPS-Agreement: Drafting History and Analysis*, No. 2.342.

<sup>71</sup> On those and further “exceptions” under Article 30 TRIPS, see S. Reyes-Knoche (2013), in J. Busche, P. Stoll & A. Wiebe (Eds.), *TRIPS, Article 30*, paras. 27 et seq.

<sup>72</sup> With proposals for a more generic application of Article 30 TRIPS, see *Declaration on Patent Protection: Regulatory Sovereignty under TRIPS* (Version 1.0 of 15 April 2014), esp. paras. 22 et seq.



violation, patent law alone could not grant the right to commercially use semiconductor technologies. This is unacceptable since semiconductor standards have proven vulnerable to doubtful SEP-holder conduct. From a more general perspective the result demonstrates that Article 31(c) TRIPS does not adequately balance patent exclusivity and the need for access in today's semi-conductor markets.

Our *tour d'horizon* has revealed difficulties to reconcile patent-law-based remedies to SEP misconduct with the structure of TRIPS. Since a revision of TRIPS is unlikely to happen in the near future, they will have to be resolved by an adequate construction of both TRIPS and the patent law remedies themselves. Future court practice and academic discussion will have to work out the details. With Article 31 TRIPS being partly ineffective and Article 30 TRIPS possibly overstretched as a basis for widespread rights to commercial use of SEPs, Article 28(1) TRIPS may provide a solution. True, a patent shall confer an exclusive right and Article 28(1) makes no explicit exception for SEPs. At least if the patent holder has made a FRAND-commitment, however, she could be said to have "consented" in the sense of Article 28(1)(a) TRIPS.

#### **4 Summary: What SEPs Tell Us About TRIPS and Innovation Through Access**

Standardization and SEPs constitute just one context in which a new demand for access to proprietary technology arises. They are, however, a very important instance, both in themselves and as an indicator for a broader phenomenon. When TRIPS is put to their litmus test the result is double-edged. On the level of its fundamental provisions TRIPS cannot only accommodate the need for access. With its goal to balance the interests of technology owners and those who urge for a right to use the agreement is even in the position to foster fair access. The level of specific provisions on access requirements, though, has proven short of perfection. A TRIPS revision might react by explicitly addressing at least a standardization-related need for access. Since TRIPS revision is hardly a near-term scenario the existing set of provisions must be made effective. An appropriate reading of Article 28(1) TRIPS can be a first step in this direction.

#### **References**

- Allison, J.R. & Lemley, M.A. (1998), Empirical Evidence on the Validity of Litigated Patents, AIPLA Qu. J. 1998, 185, Arlington: American Intellectual Property Law Association
- American Bar Association Section of Antitrust Law (2004), Handbook on the Antitrust Aspects of Standards Setting, Chicago: ABA Publishing
- Barthelmeß, S. & Gauß, N. (2010), Die Lizenzierung standardessentieller Patente im Kontext branchenweit vereinbarter Standards unter dem Aspekt des Artikel 101 AEUV, WuW 2010, 626, Düsseldorf: Handelsblatt Fachmedien GmbH

- Bausch, T. (2007), *Nichtigkeitsrechtsprechung in Patentsachen*, Munich: C.H. Beck
- Becker, G. (2013), *On Reforming the Patent System*, available at: <http://www.becker-posner-blog.com/2013/07/on-reforming-the-patent-system-becker.html> (accessed 22 July 2015)
- Brand, O. (2013), in Busche, J., Stoll, P. & Wiebe, A. (Eds.), *TRIPS, Internationales und europäisches Recht des geistigen Eigentums Kommentar*, Cologne: Carl Heymanns Verlag
- Chappatte, P. (2009), *FRAND Commitments – The Case for Antitrust Intervention*, 5 Euro. Comp. J. 2009, 319, Oxford: Hart Publishing
- Bakhoun, M. & Conde Gallego, B. (2015), *TRIPS and Competition Rules: From Transfer of Technology to Innovation Policy*.
- De Bronett, G.-K. (2009), *Gemeinschaftsrechtliche Anmerkungen zum “Orange-Book-Standard”-Urteil des BGH, WUW 2009, 899*, Düsseldorf: Handelsblatt Fachmedien GmbH
- Declaration on Patent Protection: Regulatory Sovereignty under TRIPS (Version 1.0 of 15 April 2014), published in 45 IIC 2014, 679, available at: [http://www.ip.mpg.de/en/news/declaration\\_on\\_patent\\_protection.html](http://www.ip.mpg.de/en/news/declaration_on_patent_protection.html) (accessed 20 May 2015)
- Drexl, J. (2014), *Zugang zu standardessenziellen Patenten als moderne Regulierungsaufgabe: Wie reagiert das EU-Kartellrecht auf Patentkriege zwischen chinesischen Unternehmen* (forthcoming)
- Drexl, J. (2011), *Intellectual Property in Competition: How to Promote Dynamic Competition as a Goal*, in J. Drexl et al. (Eds.), *Common Ground for International Competition Law*, Cheltenham: Elgar
- Drexl, J. et al. (2006), *Comments of the Max Planck Institute for Intellectual Property, Competition and Tax Law on the Directorate-General Competition Discussion Paper of December 2005 on the Application of Article 82 of the Treaty to Exclusionary Practices*, IIC 2006, 558, Munich: Max Planck Institute for Intellectual Property and Competition Law
- European Commission (2012), *Antitrust: Commission welcomes ICom’s Public FRAND Declaration*, press release of 10 December 2012, MEMO/09/549, available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/09/549&format=HTML&aged=1&language=DE&guiLanguage=en> (accessed 22 July 2015)
- European Commission (2012), *Antitrust: Commission sends Statement of Objections to Samsung on Potential Misuse of Mobile Phone Standard-Essential Patents*, press release of 21 December 2012, IP/12/1448, available at: [http://europa.eu/rapid/press-release\\_IP-12-1448\\_en.htm](http://europa.eu/rapid/press-release_IP-12-1448_en.htm) (accessed 22 July 2015)
- European Commission (2013), *Antitrust: Commission sends Statement of Objections to Motorola Mobility on Potential Misuse of Mobile Phone Standard-Essential Patents*, press release of 6 May 2013, IP/13/406, available at: [http://europa.eu/rapid/press-release\\_IP-13-406\\_en.htm](http://europa.eu/rapid/press-release_IP-13-406_en.htm) (accessed 22 July 2015)
- Evans, G.E. (1994), *Intellectual Property as a Trade Issue – The Making of the Agreement on Trade-Related Aspects of Intellectual Property Rights*, 18 World Comp. L. Rev. 1994, 137, - London: Kluwer Law International
- Finley, K. (2014), *World’s Most Innovative Patent Troll sues the Government*, WIRED of 15 January 2014, available at: <http://www.wired.com/business/2014/01/mpjh-ftc-patent/> (accessed 22 July 2015)
- von Gamm, O.F. (1997), *TRIPS und das nationale Wettbewerbs- und Kartellrecht*, in E. Niederleithinger (Ed.), *Festschrift Lieberknecht*, Munich: C.H. Beck
- Gervais, D. (2012), *The TRIPS-Agreement: Drafting History and Analysis*, London: Sweet & Maxwell
- Grindley, P. (1995), *Standards, Strategy and Policy*, Oxford: Oxford University Press
- Harhoff, D. et al. (2013), *Patent Litigation in Europe*, ZEW - Centre for European Economic Research Discussion Paper No. 13-072, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2333617](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2333617) (accessed 22 July 2015)
- Harhoff, D., von Graevenitz, G. & Wagner, S. (2013), *Conflict Resolution, Public Goods and Patent Thickets*, CEPR Discussion Paper Series No. 9468, available at: [www.cepr.org/pubs/dps/DP9468.asp](http://www.cepr.org/pubs/dps/DP9468.asp) (accessed 22 July 2015)

- Heinemann, A. (1995), Das Kartellrecht des geistigen Eigentums im TRIPS-Übereinkommen der Welthandelsorganisation, GRUR Int. 1995, 535, Munich: C.H. Beck
- Hötte, D. (2009), Urteilsanmerkung zu BGH Orange-Book-Standard, MMR 2009, 686, Munich: C.H. Beck
- Katz, A. & Veel, P.-E. (2013), Beyond Refusal to Deal: A Cross-Atlantic View of Copyright, Competition, and Innovation Policies, 79 Antitrust L.J. 2013, 139, Chicago: ABA Publishing
- Körber, T. (2013), Standardessentielle Patente, FRAND-Verpflichtungen und Kartellrecht, Baden-Baden: Nomos
- Merges, R. & Kuhn, J. (2009), An Estoppel Doctrine for Patented Standards, Cal. L. Rev. 2009, 1, Berkeley: UC Berkeley School of Law
- Miller, J.S. (2007), Standard Setting, Patents, and Access Lock-in: RAND Licensing and the Theory of the Firm, 40 Ind. L. Rev. 2007, 351, Bloomington: Indiana University Maurer School of Law
- Mueller, F. (2013), Patent Firm IPCom settles with T-Mobile, will be more active in U.S. with ex-Hitachi Patents, FOSS Patents Blog Entry of 18 June 2013, available at: <http://www.fosspatents.com/2013/06/patent-firm-ipcom-settles-with-t-mobile.html> (accessed 22 July 2015)
- Picht, P. (2014), Strategisches Verhalten bei der Nutzung von Patenten in Standardisierungsverfahren aus der Sicht des europäischen Kartellrechts, Berlin/Heidelberg: Springer Verlag
- Picht, P. (2013), Von eDate zu Wintersteiger – Die Ausformung des Art. 5 Nr. 3 EuGVVO für Internetdelikte durch die Rechtsprechung des EuGH, GRUR Int. 2013, 22, Munich: C.H. Beck
- Posner, R. (2013), Patent Trolls, available at: <http://www.becker-posner-blog.com/2013/07/patent-trollsposner.html> (accessed 22 July 2015)
- Robertson, A. (2014), The Ultimate Patent Troll is going to Trial against Google and Motorola, The Verge of 4 February 2015, available at: <http://www.theverge.com/2014/2/4/5375304/intellectual-ventures-goes-to-trial-against-google-and-motorola> (accessed 22 July 2015)
- Stoll, T.P. (2014), Are You Still in? – The Impact of Licensing Requirements on the Composition of Standard Setting Organizations, Essays on the Economics of Patents, Standards, and Innovation, available at: <http://ssrn.com/abstract=2535735> (accessed 22 July 2015)
- Ullrich, H. (2010), Patente und technische Normen: Konflikt und Komplementarität in patent- und wettbewerbsrechtlicher Sicht, in M. Leistner (Ed.), Europäische Perspektiven des Geistigen Eigentums, Tübingen: Mohr Siebeck
- Ullrich, H. (2010), Comment on the German Federal Supreme Court Decision Orange Book Standard, IIC 2010, 337, Munich: Max Planck Institute for Intellectual Property and Competition Law
- Ullrich, H. (2004), Expansionist Intellectual Property Protection and Reductionist Competition Rules: A TRIPs-Perspective, J. Int'l Econ. L. 2004, 401, Oxford: Oxford University Press
- U. S. Department of Justice & Federal Trade Commission (2007), Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition, available at: <http://www.ftc.gov/reports/innovation/P040101PromotingInnovationandCompetitionrpt0704.pdf> (accessed 22 July 2015)
- Verhauwen, A. (2013), "Goldener Orange-Book-Standard" am Ende? – Besprechung zu LG Düsseldorf, Beschl. v. 21. 3. 2013 – 4 b O 104/12, GRUR 2013, 558, Munich: C.H. Beck