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SEPs licensing across the supply chain: an antitrust perspective

Abstract. The rise of the Internet of Things (IoT) and the development of 5G are set to add a new layer of complexity to the current practice of standard essential patents (SEPs) licensing. While, until recently, the debate has centred on the nature of fair, reasonable and non-discriminatory (FRAND) commitments and the mechanisms to avoid hold-up and reverse hold-up problems between licensors and licensees, a new hotly-debated issue has now emerged. At its core is the question of whether SEP holders should be required to grant a FRAND licence to any implementer seeking a licence, including component makers (so-called ‘licence-to-all’ approach), or if they should be allowed freely to target the supply chain level at which the licence is to be granted (so-called ‘access-for-all’ approach). After providing an up-to-date overview of the current legal and economic debate, the paper focuses on the most recent antitrust case law dealing with the matter on both sides of the Atlantic and argues that no sound economic and legal bases which favour licence-to-all solutions can be identified.

Keywords: Standard Essential Patents; Licensing levels; FRAND; Supply chain; Automotive industry; Antitrust.

JEL codes: K21, L15, L24, L41, L62, L96, O30.

1 Introduction. Cars, IoT connectivity technologies and 5G: the new landscape of FRAND patent wars.

The seemingly endless issue of the legal treatment of standard essential patents (SEPs) is clearly one of the most complex matters currently at the heart of intellectual property and competition law. At present, the standards are set to reinforce even further their role as building blocks of the modern global economy, playing a key role in ensuring

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interoperability and technical compatibility across a broad range of industries. Standards can facilitate the creation and integration of markets, foster positive feedback loops, reduce uncertainty in the marketplace, and lower costs and prices for downstream products.¹ By ensuring interoperability, they make networks more valuable.

As the holder of a patent included within a standard benefits from a significant increase in value of its legal title, if the standard is successfully adopted, firms may be incentivised to act opportunistically to influence the design of a standard and to maximise their resulting *ex post* benefits. Indeed, whereas at an early stage of standard definition alternative technologies compete for inclusion in the standard, once the selection has been carried out implementers are locked into the standard. Further, in some industries implementers invest into their products before the standard is chosen or before it is known whether a technology will violate an existing patent. This makes in turn switching prohibitively costly or impractical. High switching costs may create market power for the owners of patents that cover the standard. As a result, they can leverage their position demanding a royalty that reflects not only the value of the technology compared to alternatives, but also the value associated with investments made by producer to implement the standard. This issue is commonly known as hold-up problem and refers to the difference between patent holders' pricing incentives *ex ante* (i.e. before the standard is set) and their pricing incentives *ex post*.

At the same time, licensees may also engage in strategic practices refusing to agree on patent holders' offers and exacerbating litigation in order to escape the payment of royalties or depress prices (reverse hold-up or hold-out).

¹ OECD, 'Licensing of IP Rights and Competition Law' (2019) <<http://www.oecd.org/daf/competition/licensing-of-ip-rights-and-competition-law.htm>> accessed 5 December 2020.

Until recently, the debate has centred on the nature of fair, reasonable and non-discriminatory (FRAND) commitments and the mechanisms to avoid hold-up and reverse hold-up problems between licensors and licensees. In order to prevent, or at least credibly reduce, the risks of patent hold-up and to increase the willingness of firms to participate in the development of a standard, Standard Setting Organisations (SSOs) typically adopt disclosure and licensing rules. Notably, with regard to the latter, SSOs require SEP holders to accept FRAND commitments. In general, by requiring a licence to be provided on fair and reasonable terms, the goal is to make SEPs available at a price equivalent to what the patents would have been worth on the market prior to being declared essential. Hence, the FRAND commitment aims to avoid or to reduce the extent of monopoly pricing by SEP holders. Similarly, the non-discrimination requirement is intended to prevent SEP holders from extracting monopoly premiums through selective licensing or “migrating their monopoly power from the FRAND-regulated market to unregulated standard-implementing product markets by licensing to only one or a few implementers or licensing to selected implementers on discriminatorily favorable terms.”²

However, it is debatable whether FRAND commitments can effectively prevent SEP holders from imposing excessive royalty obligations upon licensees, largely due to the unclear economic meaning of the FRAND acronym.³ In fact, there are no generally accepted tests to determine whether or not a particular licence satisfies a FRAND

² A Douglas Melamed and Carl Shapiro, ‘How Antitrust Law Can Make FRAND Commitments More Effective’ (2018) 127 *The Yale Law Journal* 2110, 2113-2115.

³ As pointed out in Mark A Lemley and Timothy Simcoe, ‘How Essential Are Standard-Essential Patents?’ (2019) 104 *Cornell Law Review* 607, 612-614, it is still unclear “whether a FRAND commitment prevents a patentee from getting an injunction, whether the fact that a patent is standard-essential should bar an injunction even if there is no FRAND commitment, whether a patentee that makes a FRAND commitment must offer it to everyone or only willing licensees, who is a willing licensee, whether the FRAND commitment is an enforceable contract, who decides what royalty is FRAND, what a FRAND royalty rate actually is, and what the consequences are of reneging on a FRAND commitment.”

commitment. Furthermore, no consensus exists over its legal effects, notably in relation to whether or not FRAND commitments should imply a waiver of general legal remedies (more specifically, injunctions and other extraordinary remedies). Hence, while the implications of FRAND commitments are undoubtedly significant, their meaning is inherently ambiguous from both an economic and a legal perspective. It comes as no surprise that such broad uncertainty has led to a vast wave of litigation proceedings worldwide in recent years.

Against this background, the rise of the Internet of Things (IoT) and the development of 5G are set to add an additional layer of complexity to the current practice of SEP licensing. Indeed, as new technologies are facilitating widespread interconnection between all sorts of devices, the smooth implementation of the 5G standard is crucial to the economic potential of the IoT. For instance, many of the impending disruptive technologies, such as AI-driven robots, personalised healthcare, autonomous driving, and augmented reality, would not be possible without the interconnection between physical and virtual objects enabled by the 5G standard. Therefore, in a break from the past, new standard implementers - which do not belong consistently to the ecosystem of mobile communications - will find themselves having to deal with the intellectual property complexities of these industries.⁴

For instance, the automotive industry is taking centre stage as the ecosystem in which the issue of FRAND licensing levels is raised to the highest degree. The market viability of new generation vehicles is closely dependent on their embedded connectivity with

⁴ Damien Geradin, 'SEP Licensing after Two Decades of Legal Wrangling: Some Issues Solved, Many Still to Address' (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3547891> accessed 5 December 2020.

third parties and application platforms (such as Android and iOS).⁵ Therefore, as the industry's evolution hinges on advanced mobile telecommunication standards, automakers have been pledging to install connectivity solutions in all their new vehicles in the coming years. Notably, 5G-compliant mobile technologies are expected significantly to enhance the safety and functionality of vehicles, including vehicle-to-everything communication, allowing data to be transmitted from a car to another entity, including nearby vehicles.

However, as noted by the European Commission in its recent intellectual property action plan, “[a]lthough currently the biggest disputes seem to occur in the automotive sector, they may extend further as SEPs licensing is relevant also in the health, energy, smart manufacturing, digital and electronics ecosystems.”⁶ As the digital integration of objects, devices and sensors with different applications requires interoperable solutions based on mobile network standards, SEPs play a crucial role in the development of 5G and the IoT. The growing importance of SEPs is confirmed by the upward trend in the amount of SEPs and the number of SEP holders.⁷ As 5G includes patented technologies

⁵ See Bowman Heiden, ‘The Value of Connectivity in the Automotive Sector – A First Look’ (2019) <<https://ssrn.com/abstract=3521488>> accessed 6 December 2020, pointing out that, based on a subset of existing applications, in 2018 the revenue from connectivity to automakers is estimated at \$593 (Worldwide) and \$670 (US) per connected vehicle; and Sunil Arya, ‘The Value of Standardized Technology to Connected Cars’ (2020) 69 GRUR International 365, focusing on the price that customers pay for enjoying standardised technology included in automobiles (in terms of mobility, safety, entertainment, vehicle management and the like, which consumers can acquire when buying a vehicle) and the related cost for manufacturers vis-à-vis patent holders.

⁶ European Commission, ‘Making the most of the EU’s innovative potential An intellectual property action plan to support the EU’s recovery and resilience’, COM(2020) 760 final, 13.

⁷ See IPlytics, ‘Fact finding study on patents declared to the 5G standard’ (2020) <https://www.iplytics.com/wp-content/uploads/2020/02/5G-patent-study_TU-Berlin_IPlytics-2020.pdf> accessed 6 December 2020, finding that the 5G standard is highly patented (there are over 95,000 unique patents and patent applications supporting 5G); and Rudi Bekkers, Emilio Raiteri, Arianna Martinelli, and Elena M Tur, ‘Landscape Study of Potentially Essential Patents Disclosed to ETSI’ (2020) Joint Research Centre study <<https://publications.jrc.ec.europa.eu/repository/handle/JRC121411>> accessed 6 December 2020, reporting that, for mobile connectivity standards, more than 25,000 patent families have been declared to the European Telecommunications Standards Institute (ETSI) by an increasingly large group of SEP holders and that, out of all these patent families, 37% have been added in the last two years.

that many patent holders have declared to be essential, SEP holders are expected to grant licences in favour of implementers on FRAND terms.

In light of these dynamics, the new and hotly-debated question is whether SEP holders should be required to grant a FRAND licence to any implementer seeking a licence (including component makers) or if they should be allowed freely to target the supply chain level at which the licence is to be granted. In the first solution (so-called “licence-to-all”), the SEP holder is obliged to grant a licence on fair and reasonable terms to any manufacturer that makes such a request. In turn, the patent holder’s rights are exhausted at the licensing point and any other downstream firm does not have to pay additional royalties to use the patented technologies. By contrast, in the second solution (so-called “access-for-all”), the SEP holder allows component manufacturers freely to use its patented technologies and charges all royalties at the level it deems most appropriate. As a result, all parties in the supply chain have access to the relevant patents, while component manufacturers are prevented from demanding their own individual licences.

The report recently released by the Expert Group appointed by the European Commission has confirmed the uncertainty about this disputed issue coming to the conclusion that “there may be no single answer to the question at which level of the value chain FRAND licences should be offered/taken.”⁸ Therefore, instead of supporting a specific approach, the European Group of Experts has decided to devise some principles aimed at reducing transaction costs, as well as making it neutral from

⁸ The Group of Experts on Licensing and Valuation of Standard Essential Patents, ‘Contribution to the Debate on SEPs’ (2021) 77 <<https://ec.europa.eu/docsroom/documents/44733>> accessed 14 February 2021.

an economic standpoint whether licensing takes place at the end-product level or at the component-level, which in turn should reduce litigation.⁹

Depending on whether or not SEP holders are subjected to licence-to-all obligations, the bargaining game between implementers and patent holders will change significantly, together with the incentives for further R&D investments. Given the potential profits at stake, a new wave of patent wars looms large. Several major product makers (including Apple, Cisco, Daimler, BMW, Ford, Sky, Lenovo, and Dell) have urged the European Commission to intervene on alleged abusive conduct by SEP holders which threatens to undermine the development of self-driven cars and other connected devices.¹⁰ Given the importance of the legal issues at stake, in the *Nokia v. Daimler* litigation, the Regional Court of Düsseldorf decided to refer a series of questions to the European Court of Justice (CJEU) over the licensing of SEPs for connected-car technology.¹¹

The paper is structured as follows. The second section contextualises the current scientific debate by providing an overview of the arguments emerging in favour of licence-to-all and access-for-all solutions. By carrying out a thorough analysis of the most recent decisions delivered in the US and in Europe, the third section examines the current debate on the antitrust treatment of level discrimination against the broader legal and economic background of FRAND-encumbered patents. The article concludes by

⁹ Ibid. 84-85. Notably, first, from an economic perspective, it will be more efficient if all relevant SEPs are licensed at a single level in the value chain, rather than at multiple levels; second, pursuant to a principle of neutrality, the value of a SEP licence should not depend on the level in the value chain where the licence is taken; third, the FRAND royalty is a cost element in the price of a component and should be passed on downstream. However, see Damien Geradin, 'The European Commission's expert group Report on SEP licensing and valuation: What did we achieve? What did we miss?' (2021) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3783710> accessed 14 February 2021, worrying that these principles may be hard to implement in practice, since they would have to be agreed both by the SEP holders and the members of the value chain.

¹⁰ Financial Times, 'Apple, Cisco, Daimler and BMW complain to Brussels over patents' (2019) 17 December <<https://www.ft.com/content/46e0e4c0-20ea-11ea-92da-f0c92e957a96>> accessed 7 December 2020.

¹¹ Landgericht Düsseldorf, 26 November 2020, Case 4c O 17/19, *Nokia Technologies v. Daimler AG*.

arguing that it is not possible to identify sound economic and legal bases under both EU and US competition law in favour of a licence-to-all solution.

2 Contextualising the licence-to-all versus access-to-all debate: economic incentives, patent exhaustion, and SSO IPR policies.

At its core, the debate between licence-to-all and access-for-all solutions is a matter of price fairness. Indeed, the importance attached to the choice by SEP holders of the level at which patents are to be licensed hinges on profitability concerns.¹² Both systems rely on their alleged ability to best capture the value of using the patented technologies and to avoid distortions in compensation. However, using the end product rather than the component as the royalty base is likely to result in higher royalties for SEP holders, while implementers, by advocating for a licence-to-all system, which grants the right to receive a licence at component level (thus reducing the royalty base), can expect to pay less.

The option chosen naturally affects the economic incentives of the parties involved. In this regard, proponents of the access-for-all approach argue that royalties determined on a base that does not reflect the value of the technology to end consumers are likely to under-compensate the SEP holder.¹³ In turn, this weakens incentives to invest and innovate¹⁴, discouraging inventors from committing to FRAND promises and from

¹² Bowman Heiden, Jorge Padilla, and Ruud Peters, 'The Value of Standard Essential Patents and the Level of Licensing' (2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3717570> accessed 7 December 2020.

¹³ See Anne Layne-Farrar and Richard J Stark, 'License to All or Access to All? A Law and Economics Assessment of Standard Development Organizations' Licensing Rules' (forthcoming) *George Washington Law Review*, arguing that a licence-to-all rule could affect the expected return on investment for SEPs.

¹⁴ Axel Gautier and Nicolas Petit, 'Smallest Salable Patent Practicing Unit and Component Licensing: Why 1\$ is not 1\$' (2019) 15 *Journal of Competition Law & Economics* 690.

participating in standard-setting activities.¹⁵ Finally, access-for-all is easy to implement and efficient, minimising uncertainty and reducing transaction and monitoring costs.¹⁶ The shift to a licence-to-all solution can therefore be considered counterproductive, negatively impacting the standardisation process.¹⁷ On the other hand, arguments advanced by supporters of the licence-to-all solution rely on the assumption that most SEPs are implemented in components, claiming that the latter thus best reflect the value of a standardised technology.¹⁸ Indeed, unlike current practice in the mobile communications industry, in other sectors - such as the automotive industry - suppliers are expected to obtain a licence for any intellectual property right (IPR) required to produce a particular component.¹⁹ From this perspective, basing royalties on end devices would over-compensate SEP holders for the value of multiple inventions and components unrelated to the patented technology.

The discussion with regard to SEPs licensing levels also involves different layers of complexity from a legal standpoint, spanning from patent exhaustion to SSO IPR policies and the antitrust assessment of the scope of FRAND commitments.

Patent exhaustion, also known as first sale doctrine, implies that the first authorised sale of a patented good extinguishes all patent rights related to that item; accordingly, once a licence has been lawfully granted, the patent holder loses control over any further use of

¹⁵ Juan Martinez, 'FRAND as Access to All versus License to All' (2019) 14 *Journal of Intellectual Property Law & Practice* 642.

¹⁶ Jeas-Sébastien Borghetti, Igor Nolic, and Nicolas Petit, 'FRAND Licensing Levels under EU Law' (forthcoming) *European Competition Journal*; Heiden, Padilla, and Peters (n 12) 26; Jorge Padilla and Koren W Wong-Ervin, 'Portfolio Licensing at the End-User Device Level: Analyzing Refusals to License FRAND-Assured Standard-Essential Patents at the Component Level' (2017) 62 *The Antitrust Bulletin* 494, 501.

¹⁷ Martinez (n 15) 651.

¹⁸ Geradin (n 4) 17.

¹⁹ US Department of Justice, 'Business Review Letter to Avanci' (2020) 21 <<https://www.justice.gov/opa/pr/justice-department-issues-business-review-letter-avanci-proposed-licensing-platform-advance>> accessed 8 December 2020.

the item implementing its invention. Consequently, a patent holder can license only once for any specific item throughout the supply chain, namely at the level of the component or the end device maker.

Due to patent exhaustion, right holders are therefore particularly sensitive to the supply chain level at which the licence is granted. Establishing the royalty rates on their patents as a percentage of the end-product sales price would indeed allow SEP holders to obtain the maximum value for their technologies and ensure they are adequately rewarded for their investments.²⁰ If they licensed their SEPs further upstream in the manufacturing process to competing suppliers, then those patent rights would be exhausted as soon as the latter sold their products to end device makers. Being downstream recipients of the already exhausted patents embodied in supplied products, end device manufacturers would not have to pay the SEP holders as they would not need any licence to use the technologies covered by such patents. For these reasons, as acknowledged by the US Ninth Circuit in *Qualcomm*²¹, as well as by some German courts²², licensing patents at end device level, and more generally leaving SEP holders free to select the preferred level of licensing, is an established industry practice in mobile communications. From this perspective, the access-for-all solution meets the need to address the problem of patent exhaustion by ensuring fair compensation to licensors for their innovation.²³

Moreover, advocates of the access-for-all system highlight that the availability of standard essential technologies to component suppliers would be ensured by so-called

²⁰ *FTC v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020).

²¹ *Ibid.*. See also Padilla and Wong-Ervin (n 16) 500-501; Jonathan D Putnam and Tim A Williams, 'The Smallest Salable Patent-Practicing Unit (SSPPU): Theory and Evidence', (2016) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2835617> accessed 8 December 2020.

²² Landgericht Düsseldorf, 11 July 2018, Case No. 4c O 77/17, *Intellectual Ventures v. Vodafone*; Landgericht Düsseldorf, 31 March 2016, Case No. 4a O 73/14, *Saint Lawrence v. Vodafone*.

²³ US Department of Justice (n 19) 20. See also Borghetti, Nicolic, and Petit (n 16); Martinez (n 15) 648.

“have made” rights, allowing them to use the patented technologies without fear of risking any infringement.²⁴ As recently pointed out by the US Department of Justice (DoJ) assessing Avanci’s joint patent-licensing pool, have made rights allow a vehicle manufacturer to have third party component suppliers make components for their 5G connected vehicles, hence creating new access to the licensed patents for component suppliers.²⁵ However, the utility of this contractual provision is controversial. Notably, it is considered inherently restrictive as it allows the third party supplier to produce components for the sole use of the licensed end-product manufacturer.²⁶ This means that the manufacturer could not produce components intended for the open market or for unlicensed end-product manufacturers. Furthermore, there are concerns that such a system may not immunise from infringement the whole vertical supply chain of a specific end-product manufacturer, but only the first tier of third party suppliers.

Useful guidance is provided by the texts of SSO IPR policies which help to clarify whether or not SEP holders have a contractual duty to license at every level of the supply chain. Indeed, by requiring SEP holders to comply with FRAND commitments, these policies may support a licence-to-all, rather than an access-for-all, approach. However, they vary significantly and their texts are somewhat ambiguous, leading to conflicting interpretations.

For instance, according to the former Director-General of the European Telecommunications Standards Institute (ETSI) Karl Heinz Rosenbrock, Section 6 of

²⁴ Borghetti, Nicolici, and Petit (n 16); Layne-Farrar and Stark (n 13); Martinez (n 15).

²⁵ US Department of Justice (n 19) 19.

²⁶ Geradin (n 4). The Group of Experts on Licensing and Valuation of Standard Essential Patents (n 8) 89-91, makes a distinction between have-made rights with conditions, according to which the licensee is entitled to have a third-party manufacturer make components based on the licensee’s own design and solely for supply to the licensee (hence, may not satisfy component suppliers in multi-level supply chains), and have-made rights without conditions, which would grant the licensee with unconditional rights to have components made by a third-party manufacturer.

the ETSI IPR policy requires a FRAND commitment to enable every company that requests a licence to obtain one, regardless of where the prospective licensee is in the chain of production and regardless of whether the prospective licensee is active upstream or downstream.²⁷ However, other scholars and commentators, including a former member of the ETSI IPR Committee, have argued that the ETSI policy does not impose a duty to license at all levels of the value chain, but merely requires SEP holders to grant licences on FRAND terms.²⁸ Rather, under French contract law, the provision in question should be interpreted as acknowledging a right to be granted a licence on FRAND terms only to manufacturers of end-user devices.²⁹

Conversely, the wording of the Institute of Electrical and Electronics Engineers (IEEE) IPR Policy appears crystal clear.³⁰ Following the revision made in 2015, Section 6 of the IEEE's policy covers, within the scope of the licence rights to be granted, any "compliant implementation", which is defined as any product (including sub-assemblies, components, and end-products) or service that conforms to any mandatory

²⁷ Karl H Rosenbrock, 'Why the ETSI IPR Policy Requires Licensing to All' (2017) <https://www.fair-standards.org/wp-content/uploads/2017/08/Why-the-ETSI-IPR-Policy-Requires-Licensing-to-All_Karl-Heinz-Rosenbrock_2017.pdf> accessed 8 December 2020. See ETSI, 'Directives' (2020) Section 6 of the IPR Policy <<https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf>> accessed 8 December 2020, stating that "[w]hen an ESSENTIAL IPR relating to a particular STANDARD or TECHNICAL SPECIFICATION is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner 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 customised components and sub-systems to the licensee's own design for use in MANUFACTURE; - sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED; - repair, use, or operate EQUIPMENT; and
- use METHODS."

²⁸ See Bertram Huber, 'Why the ETSI IPR Policy Does Not and Has Never Required Compulsory 'License to All': A Rebuttal to Karl Heinz Rosenbrock' (2017) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3038447> accessed 8 December 2020; Layne-Farrar and Stark (n 13); Padilla and Wong-Ervin (n 16).

²⁹ Borghetti, Nicolici, and Petit (n 16).

³⁰ IEEE, 'Standards Board Bylaws' (2019) <<https://standards.ieee.org/about/policies/bylaws/index.html>> accessed 8 December 2020.

or optional portion of a normative clause of the standard.³¹ Therefore, SEP holders required to comply with the FRAND commitment under the IEEE's framework cannot refuse to license their patent rights to component manufacturers upon request.

Given that SSO policies are apparently not decisive in providing a legal basis for the licence-to-all approach, it remains open to evaluation whether a patent holder's refusal to license a FRAND-committed SEP at any point in the supply chain constitutes an antitrust violation.

3 A transatlantic competition law perspective.

A discussion on SEP licensing across the value chain would be inherently incomplete without providing a competition law background. The exponential growth of the IoT across the market has turned the legitimacy of level discrimination from a theoretical endeavour into an urgent legal issue of the utmost economic importance. Therefore, it is inevitable that antitrust enforcers and courts on both sides of the Atlantic have started to address the matter closely. After shedding light on the most relevant cases, in this section, we critically examine whether antitrust should interfere with prevailing business practices or, rather, stay true to its core goals.

³¹ For a critique of the IEEE Policy, see, for example, Nicolas Petit, 'The IEEE-SA Revised Patent Policy and Its Definition of 'Reasonable' Rates: A Transatlantic Antitrust Divide?' (2017) 27 *Fordham Intellectual Property Media & Entertainment Law Journal* 211; J Gregory Sidak, 'The Antitrust Division's Devaluation of Standard-Essential Patents' (2015) 104 *Georgetown Law Journal Online* 48; Nicolo Zingales and Olia Kanevskaia, 'The IEEE-SA patent policy update under the lens of EU competition law' (2016) 12 *European Competition Journal* 195. It is worth noting that the US Department of Justice has recently reversed its previous business review letter (US Department of Justice, 'Business Review Letter to IEEE', (2015) <<https://www.justice.gov/atr/business-review-letters-and-request-letters>> accessed 22 December 2020) complaining that it "has been cited, frequently and incorrectly, as an endorsement of the IEEE Policy" (US Department of Justice, 'Update to the 2015 Business Review Letter', (2020) 1 <<https://www.justice.gov/atr/business-review-letters-and-request-letters>> accessed 22 December 2020).

3.1 The US scenario.

In the US, questions regarding the antitrust legitimacy of level discrimination saw the two antitrust enforcers, i.e. the Federal Trade Commission (FTC) and the DoJ, provide conflicting interpretations. Indeed, in *Qualcomm*, while the former openly took a stance in favour of licence-to-all schemes, which was ultimately rejected by the Ninth Circuit, the latter pushed for a more agnostic approach.³²

Notably, in 2017, the FTC filed a complaint charging Qualcomm with using its dominant position as a supplier of certain baseband processors (semiconductor devices, or chips, that allow cellphones to communicate with the cellular networks) to impose onerous and anticompetitive supply and licensing terms on cell phone manufacturers and to weaken its competitors.³³ The FTC alleged that, despite its FRAND commitment, Qualcomm had consistently refused to license its SEPs to competing suppliers of baseband processors and it had maintained a “no licence, no chips” policy in accordance with which it only supplied its baseband processors on the condition that cell phone manufacturers agreed to Qualcomm’s preferred licence terms. According to the complaint, this policy allows Qualcomm to obtain elevated royalties and consists of a tax on manufacturers’ use of baseband processors manufactured by its competitors.

The Northern District of California agreed, stating that Qualcomm’s refusal to license rival chipmakers violated both its FRAND commitments and its antitrust duty to deal under Section 2 of the Sherman Act.³⁴ In particular, Judge Koh rejected as specious Qualcomm’s argument that, as only end devices implement the standards, SSOs policies

³² *Qualcomm* (n 20).

³³ *FTC v. Qualcomm Inc.*, FTC’s Complaint for Equitable Relief, (2017) Case 5:17-cv-00220 <<https://www.ftc.gov/enforcement/cases-proceedings/141-0199/qualcomm-inc>> accessed 25 December 2020.

³⁴ *FTC v. Qualcomm Inc.*, 411 F. Supp. 3d 658 (N.D. Cal. 2019).

(in this case, the Telecommunications Industry Association and the Alliance for Telecommunications Industry Solutions) require end users to be licensed. Accordingly, Qualcomm stopped licensing at chip-level merely because it considered it far more lucrative to target exclusively original equipment manufacturers (OEMs). By referring to the Ninth Circuit's decisions in *Microsoft v. Motorola*, Judge Koh warned that standards not only promote interoperability, but also threaten to endow SEP holders with disproportionate market power.³⁵ As a result, SSOs require members who are SEP holders to license those patents to all comers on FRAND terms. Therefore, these SSOs policies do not allow any restrictions as to which applicants or how many of them can receive a licence.

Further, Judge Koh concluded that Qualcomm's refusal to license rival chip makers is an anticompetitive refusal to deal under the Supreme Court's decision in *Aspen Skiing*, thus considering Qualcomm's conduct as a unilateral termination of a voluntary and profitable course of dealing motivated by anticompetitive malice.³⁶ In particular, the District Court noted that Qualcomm previously licensed its rivals but voluntarily terminated that practice even though it was profitable, giving short-term licensing revenue. In the Court's view, Qualcomm's willingness to sacrifice profitable licenses from modem chip rivals aimed at obtaining higher profits in the long run from the exclusion of competition.

³⁵ *Microsoft Corp. v. Motorola Inc.*, 696 F.3d 872 (9th Cir. 2012); *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024 (9th Cir. 2015).

³⁶ *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985). In *Aspen Skiing* the Court held that a company engages in an anticompetitive conduct when it unilaterally terminates a voluntary and profitable course of dealing, which suggests a willingness to forsake short-term profits to achieve an anticompetitive end (i.e. to obtain higher profits in the long run from the exclusion of rivals), and the refusal to deal involves products that the company already sells in the existing market to other similarly situated customers. However, as the Supreme Court later observed in *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398, 409 (2004), by introducing a "limited exception" to the general rule that there is no antitrust duty to deal, *Aspen* lies "at or near the outer boundary" of antitrust liability.

For these reasons, the District Court ordered a permanent, worldwide injunction prohibiting Qualcomm’s core business practices.

However, a few days before Judge Koh issued his decision, the DoJ filed a Statement of Interest, making the Court aware that, if it found Qualcomm liable, there should be a separate briefing and an evidentiary hearing on remedy.³⁷ This move was not appreciated by the FTC, which labelled it “untimely.”³⁸ The DoJ’s Statement reflects the “New Madison Approach” promoted by its (former) Chief of the Antitrust Division, Makan Delrahim, who was concerned that enforcers had strayed too far in the direction of accommodating the interests of technology implementers which form part of the standard setting bodies.³⁹ The DoJ’s new approach led to a significant policy shift by withdrawing the joint policy statement with the Patent and Trademark Office (PTO) on FRAND-encumbered SEPs issued in 2013.⁴⁰ According to the Statement, “[t]he effects of an antitrust remedy ... are not always intended; if overly broad, a remedy ultimately may cause harm to competition and consumers.”⁴¹ The DoJ explicitly referred to Apple’ internal documents describing its plan to put Qualcomm’s licensing model at risk, including by filing lawsuits raising claims similar to those in the case at stake. In this

³⁷ US Department of Justice, ‘Statement of Interest in FTC v. Qualcomm Inc.’, (2019) <https://www.essentialpatentblog.com/wp-content/uploads/sites/64/2019/05/2019-05-02-DOJ-Statement-dckt-1487_0.pdf> accessed 25 December 2020.

³⁸ US Federal Trade Commission, ‘Response to Statement of Interest filed by US Department of Justice Antitrust Division’, (2019) <<https://www.essentialpatentblog.com/wp-content/uploads/sites/64/2019/05/2019-05-09-FTC-Response-to-DOJ-Statement.pdf>> accessed 25 December 2020.

³⁹ Makan Delrahim, ‘The “New Madison” Approach to Antitrust and Intellectual Property’, (2018) Remarks at the University of Pennsylvania Law School, <<https://www.justice.gov/opa/speech/file/1044316/download>> accessed 25 December 2020.

⁴⁰ US Department of Justice and US Patent and Trademark Office, ‘Policy Statement on Remedies for Standard-Essential Patents Subject to Voluntary F/RAND Commitments’, (2013) <<https://www.justice.gov/atr/page/file/1118381/download>> accessed 25 December 2020. See also US Department of Justice, US Patent and Trademark Office, and National Institute of Standards and Technology, ‘Policy Statement on Remedies for Standards-Essential Patents Subject to Voluntary F/RAND Commitments’, (2019) <<https://www.justice.gov/atr/page/file/1228016/download>> accessed 25 December 2020.

⁴¹ US Department of Justice (n 37) 4.

circumstance, “there is a plausible prospect that an overly broad remedy in this case could reduce competition and innovation in markets for 5G technology and downstream applications that rely on that technology.”⁴²

Moreover, the DoJ intervened on appeal, asking the Ninth Circuit to stay the injunction against Qualcomm, claiming that “[t]he district court’s ruling threatens competition, innovation, and national security. Its liability determination misapplied Supreme Court precedent, and its remedy is unprecedented. Immediate implementation of the remedy could put our nation’s security at risk, potentially undermining U.S. leadership in 5G technology and standard-setting, which is vital to military readiness and other critical national interests.”⁴³ From this perspective, Judge Koh erroneously relied on his interpretation of Qualcomm’s FRAND obligations to SSOs as contractually compelling Qualcomm to license rival chip makers: “That obligation, however, is very different from the true voluntariness present in *Aspen Skiing*, where there was no enforceable obligation, and much closer to the situation in *Trinko*,⁴⁴ where the defendant was under an enforced regulatory obligation to deal and the Court rejected an additional, antitrust duty to deal.”⁴⁵ Further, in establishing the remedy, the District Court unlawfully required Qualcomm to license on FRAND terms, as it mistakenly converted a potential contractual breach into an antitrust violation: “Converting contractual commitments into compulsory licenses, policed by treble-damages lawsuits, risks undermining important

⁴² Ibid. 5

⁴³ US Department of Justice, ‘Statement of Interest Concerning Qualcomm’s Motion for Partial Stay of Injunction Pending Appeal’, (2019) 1 <<https://www.justice.gov/atr/case-document/file/1183936/download>> accessed 25 December 2020.

⁴⁴ *Trinko* (n 36).

⁴⁵ US Department of Justice (n 43) 5-6.

incentives for innovation by reducing the expected rewards below those that FRAND licensing permits.”⁴⁶

In 2020, the Ninth Circuit overturned the District Court’s decision, upholding that Qualcomm’s OEM-level licensing policy was not an anticompetitive violation.⁴⁷ Firstly, this practice is not unique to Qualcomm since, as the District Court itself found, following Qualcomm’s lead, other SEP licensors, such as Nokia and Ericsson, have concluded that licensing only OEMs is more lucrative, and have structured their practices accordingly. Quoting the Federal Circuit’s ruling in *Exmark*,⁴⁸ the panel observed that “[s]ophisticated parties routinely enter into license agreements that base the value of the patented inventions as a percentage of the commercial products’ sales price”, hence “[t]here is nothing inherently wrong with using the market value of the entire product.”⁴⁹ Moreover, OEM-level licensing allows SEP holders to obtain the maximum value for their patented technologies while avoiding the problem of patent exhaustion. Finally, the District Court’s conclusion that Qualcomm’s refusal to provide exhaustive SEP licences to rival chip suppliers meets the *Aspen Skiing* exception ignores critical differences between Qualcomm’s business practices and the conduct at issue in *Aspen Skiing*, and it ignores the Supreme Court’s subsequent warning in *Trinko* that the *Aspen Skiing* exception should be applied only in rare circumstances. As emphasised by the panel, according to *Trinko* “the Sherman Act does not restrict the

⁴⁶ *Ibid.* 9.

⁴⁷ *Qualcomm* (n 20). A critical perspective is provided by Herbert Hovenkamp, ‘FRAND and Antitrust’ (2020) 105 *Cornell Law Review* 1683, arguing that the Ninth Circuit made no attempt to understand how antitrust law could be used to protect the FRAND process from anticompetitive restraints and disapproving the intervention of the DoJ in the proceeding, which it seemed “more intent on protecting Qualcomm than the competitive integrity of the FRAND process.” See also Carl Shapiro and Mark A Lemley, ‘The Role of Antitrust in Preventing Patent Holdup’ (2020) 168 *University of Pennsylvania Law Review* 2019.

⁴⁸ *Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1349 (Fed. Cir. 2018).

⁴⁹ *Qualcomm* (n 20) 998.

long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.”⁵⁰

A few weeks later, the Northern District of Texas reached the same conclusion in *Continental v. Avanci* stating that “[a]n SEP holder may choose to contractually limit its right to license the SEP through a FRAND obligation, but a violation of this contractual obligation is not an antitrust violation.”⁵¹ The District Court accepted the DoJ’s view that breaches of FRAND commitments are “quintessential contract law problems” and that antitrust law does “not compel patent owners who have made FRAND commitments to license at potential licensees’ preferred rates.”⁵²

In line with this view, the DoJ more recently cleared Avanci’s new Platform for licensing 5G telecommunications technology in the automotive industry, acknowledging that the final product (i.e. the vehicle) is an appropriate royalty base as it may generate numerous licensing efficiencies, such as simplifying scope, pricing, and royalty collection.⁵³ Therefore, the Department found that, although the pool did not license to automotive suppliers, the pool’s licence to vehicle manufacturers could potentially make licensing easier and much more efficient for automakers willing to license the technology necessary to make these vehicles.⁵⁴ Similarly, in the past, the DoJ has ascertained that limiting a pool licence’s field of use to final products is not

⁵⁰ Ibid. 999.

⁵¹ *Continental Automotive System Inc. v. Avanci LLC et al.*, No. 3:19-cv-02933-M, 2020 WL 5627224 (N.D. Tex. 2020).

⁵² US Department of Justice, ‘Statement of Interest in Continental Automotive System Inc. v. Avanci LLC et al.’, (2020) 1 and 13 <<https://www.justice.gov/atr/case-document/file/1253361/download>> accessed 25 December 2020.

⁵³ US Department of Justice (n 19).

⁵⁴ Alexander Okuliar, ‘Promoting Predictability and Transparency in Antitrust Enforcement and Standards Essential Patents’, (2020) Remarks to the Telecommunications Industry Association <<https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-alexander-p-okuliar-delivers-remarks-united-states>> accessed 25 December 2020.

anti-competitive. This was the case in relation to the 3G Platform Partnership, which grouped essential patents into product categories, such as infrastructure, terminals, test equipment, and that of Avanci's Platform, whose royalty collection point was "the last manufacturer in the manufacturing chain."⁵⁵

Finally, the DoJ took "the extraordinary step" of supplementing its previous IEEE Business Review Letter, reiterating that SSOs policies must not only balance the interests of SEP holders and implementers but also acknowledge that FRAND disputes are better addressed under contract or patent law, rather than antitrust.⁵⁶ In particular, according to the DoJ, the previous Letter proved to be incorrect in anticipating that hold-up would be a competitive problem, without paying attention to the flip side, namely the potential anticompetitive behaviours by implementers seeking to undermine the bargaining position of patent holders in the standards development process (hold-out problem). Moreover, by seemingly endorsing the IEEE Policy recommendation to use the smallest saleable patent practicing unit (SSPPU) as the appropriate royalty base for SEPs, the 2015 Letter was interpreted incorrectly. Indeed, referring to the *Exmark* and *Qualcomm* rulings, the DoJ noted that case law on FRAND has evolved to include various means of determining royalties. Since both SSPPU and end-product based calculations are viable options, a firm should be free to choose the preferred method without incurring antitrust liability⁵⁷. As highlighted by the Department, "one key risk in relying solely on the smallest saleable unit method, to the exclusion of others, is that real-world licenses often set royalties based on end-product revenue. Parties should not be discouraged from relying on these licenses - particularly since this sort of market-

⁵⁵ US Department of Justice, 'Business Review Letter to G Patent Platform Partnership' (2002) <<https://www.justice.gov/sites/default/files/atr/legacy/2006/04/27/200455.pdf>> accessed 25 December 2020.

⁵⁶ US Department of Justice (n 31).

⁵⁷ *Ibid.* 7.

based evidence is often “the most effective method of estimating [an] asserted patent’s value.”⁵⁸

Ultimately, the DoJ opted not to interfere with market players’ freedom to bargain and autonomously develop licensing practices most suited to fast-changing industries. Indeed, “there is no single correct way to calculate a reasonable royalty in the FRAND context” and “parties should be given flexibility to fashion licenses that reward and encourage innovation.”⁵⁹

3.2 The EU scenario.

In the EU, the debate over the legitimacy of level discrimination in SEP licensing reached its zenith, and probably its turning point, in the German *Nokia v. Daimler* case in which the Düsseldorf Regional Court recently decided to refer this pressing issue to the CJEU.⁶⁰ The questions posed by the German judges focus on whether SEP holders who have committed to FRAND terms are obliged to license upstream component suppliers, as well as the legal consequences for any refusal to do so. Furthermore, the questions also attempt to shed some light on the safe harbour requirements for requesting injunctions as envisaged by the *Huawei* landmark judgment.⁶¹

In the litigation in question, Nokia is seeking an injunction against Daimler for infringing the German part of its European patent essential for a Long-Term Evolution (LTE) based standard. This standard is implemented within many car components to enable mobile radio-based services. As this patent was considered essential for the LTE

⁵⁸ Ibid. 7.

⁵⁹ Ibid. 8.

⁶⁰ Landgericht Düsseldorf (n 11).

⁶¹ CJEU, 16 July 2015, Case C-170/13, *Huawei Technologies Ltd. v. ZTE Corp.*

standard, Nokia's predecessor in title pledged to license it on FRAND terms. So far, Daimler and its suppliers have implemented the standard without paying royalties to Nokia. They argue that, according to the FRAND commitment, Nokia is compelled to offer any licence seeker, regardless of its position within the supply chain, an individual unlimited licence for all its SEPs. Conversely, Nokia claims to be completely free to select across the supply chain the level at which licensing shall take place.

In the referral decision, the Düsseldorf Regional Court queries if Nokia's injunction against Daimler amounts to an abuse of its dominant position in the licensing market.

Notably, the national court questions whether a company, active downstream, can raise the objection of abuse of a dominant position against an injunction action due to infringement of a FRAND-encumbered patent if the standard is already implemented in an intermediate product purchased by the defendant whose suppliers wish to obtain an unlimited licence for all types of use, while the patent holder refuses to meet their demand.⁶²

Furthermore, in the second question, the CJEU is asked to clarify whether the prohibition on abuse of a dominant position requires the supplier to be granted its own unlimited licence for all types of use on FRAND terms for products implementing the standard. This would mean that the final seller (and possibly the upstream buyers) no longer requires a separate licence from the SEP holder in order to avoid infringing the patent through the intended use of the relevant supplied items.

⁶² In light of the high-level complexity of the automotive supply chain and its "just-in-time" processes, it is common practice for end-product manufacturers to buy components free of third party rights in order to avoid any risk of disruption arising from injunctions. Accordingly, Daimler refused to take a license from Nokia as it expects that its suppliers should obtain it.

Interestingly, a few months earlier, in another litigation between the same parties, a different German Regional Court (Mannheim) dismissed the Bundeskartellamt's request to refer the dispute to the CJEU and instead ordered a Germany-wide sales ban against Daimler.⁶³ According to the judges, as a patent holder is free to choose the sales levels at which it prefers to enforce its rights, Daimler had failed to comply with SEPs licensing rules on FRAND conditions.

However, in June 2021, Nokia and Daimler announced that they have signed a patent licensing agreement and have agreed to settle all pending litigation over connected cars technology, including the case pending before the CJEU. While, in the future, the CJEU is likely to be again called to clear up the matter, the question regarding who in the supply chain is entitled to a FRAND license will continue to be a matter of contention. Therefore, for the time being, it is worth evaluating if the current legal framework supports a licence-to-all solution under EU antitrust law.

As is known, the CJEU decision in *Huawei* represents the most significant attempt to provide a framework for good faith SEP licensing negotiations. In order to strike a fair balance between the interests involved, the CJEU identified the steps that patent holders and implementers must follow in negotiating a FRAND royalty. In this regard, the Court has shown a preference for FRAND determination in the context of negotiations between the parties, using the threat of antitrust liability and patent enforcement as levers to steer both parties towards a mutually agreeable FRAND royalty level. Indeed, compliance with this code of conduct will shield SEP holders from the gaze of competition law and, at the same time, protect implementers from the threat of an injunction and the consequent disruptive effect on sales and production.

⁶³ Landgericht Mannheim, 18 August 2020, Case 2 O 34/19, *Nokia Oyj v. Daimler AG*.

Although the CJEU did not tackle the issue of selective licensing, it did state that the SEP holder should not be deprived, even if it has made a FRAND commitment, of having recourse to legal proceedings to ensure effective enforcement of its exclusive rights and that “the user of those rights, if he is not the proprietor, is required to obtain a licence prior to any use.”⁶⁴ Moreover, the CJEU held that an injunction or a product recall against the implementer could amount to an abusive refusal to license on FRAND terms, provided that the implementer has diligently replied with a FRAND compliant counteroffer in line with commercial practice.⁶⁵ On these grounds, it was suggested that the right to request a FRAND licence is “a fundamental and unconditional one”⁶⁶ and the SEP holder is under an obligation to grant a FRAND licence in favour of “all users who need a licence in order to use the SEP lawfully, a definition which clearly includes component manufacturers”.⁶⁷

By contrast, it has been noted that *Huawei* does not provide a legal basis for the aforementioned interpretation as it merely defines the requirements according to which an SEP holder can legitimately enforce its rights against unlicensed implementers.⁶⁸ Therefore, the purpose of the ruling far from overhauls the existing refusal to license doctrine.

Notably, compulsory licensing under EU competition law hinges on the “exceptional circumstances” according to the essential facility doctrine (EFD) context.⁶⁹ For

⁶⁴ *Huawei* (n 61) para 58.

⁶⁵ *Ibid.* paras 54 and 71.

⁶⁶ Thomas Kühnen, ‘FRAND licensing and implementation chains’, (2019) 14 *Journal of Intellectual Property Law & Practice* 964.

⁶⁷ Renato Nazzini, ‘Level Discrimination and FRAND Commitments Under EU Competition Law’ (2017) 40 *World Competition* 213, 229.

⁶⁸ Borghetti, Nicolici, and Petit (n 16).

⁶⁹ CJEU, 6 April 1995, *Joined Cases C-241/91 P and 242/91 P, RTE and ITP v. Commission*; CJEU, 26 November 1998, *Case C-7/97, Oscar Bronner GmbH & Co. KG v. Mediaprint Zeitungs- und Zeitschriftenverlag GmbH & Co. KG, Mediaprint Zeitungsvertriebsgesellschaft mbH & Co. KG and*

standards, the exceptional circumstances rely on the fact that the patents at issue are essential to standards established by SSOs and that those patents obtained essentiality status only in return for the holder's irrevocable commitment to license on FRAND terms.⁷⁰ In those circumstances, also with regard to the legitimate expectation of third parties that the SEP holder will agree to FRAND terms in order to prevent an injunction action from being considered abusive, the SEP holder must comply with conditions that seek to ensure a fair balance between the interests concerned.⁷¹

On these premises, a “willing licensee” test has emerged. While the alleged infringer cannot simply manifest a mere willingness to negotiate, the SEP holder is burdened with making the first move and respecting the corresponding behavioural requirements. It is up to the SEP holder to alert the infringer of the alleged violation by naming the patent and specifying the way in which it has been transgressed. Secondly, it is up to the SEP holder to present a specific and written licence offer on FRAND terms, specifying the amount of the royalty and the way in which it is to be calculated. By contrast, it is up to the alleged infringer to respond diligently to that offer, in accordance with well-established commercial practices and in good faith, implying no delaying tactics.

By and large, this licensing framework does not impose a duty to license to a specific licensee and the SEP holder apparently enjoys freedom to select the party across the supply chain that it deems most appropriate for negotiating a FRAND licence.

An alternative basis for mandating SEP holders to license across all levels can be found in the Guidelines accompanying the European Block Exemption Regulation for

Mediaprint Anzeigengesellschaft mbH & Co. KG; CJEU, 29 April 2004, Case C-418/01, *IMS Health v. NDC Health*; General Court, 17 September 2007, Case T-201/04, *Microsoft v. Commission*.

⁷⁰ *Huawei* (n 61) paras 49 and 51.

⁷¹ *Ibid.* paras 53-55.

horizontal co-operation agreements.⁷² In particular, this argument builds on the wording of paragraph 285, which states that SSO participants wishing to have their patent rights included in a standard should provide an irrevocable commitment to offer to license their SEPs to “all third parties” on FRAND terms. The suggested interpretation is that the reference to “all third parties” means “any third party”; therefore, no level discrimination would be allowed.⁷³

However, this interpretation seems, along with the previous one, to be inconsistent with the comprehensive approach defined in the Horizontal Guidelines and it overlooks their main goal. Indeed, as clarified on several occasions (such as paragraphs 264, 268, 283, 284, 287 and 294), the Guidelines aim to guarantee effective “access” to the standard, i.e. to the results of the standard-setting process, and their target is the SSO, rather than each patent holder.⁷⁴ Furthermore, by definition, the Horizontal Guidelines address transactions between rivals; therefore, they are not intended to deal with vertical licensing negotiations between SEP holders and non-competing implementers.⁷⁵ Moreover, as highlighted in paragraph 279, “[t]he non-fulfilment of any or all of the principles set out in this section will not lead to any presumption of a restriction of competition. [...] Therefore, standard-setting organisations remain entirely free to put in place rules and procedures that do not violate competition rules whilst being different to those described in paragraphs 280 to 286.” In a nutshell, the Guidelines merely pursue the goal of providing a safe harbour, without creating any presumption of antitrust liability or requiring SEP holders to license across all levels of the supply chain.

⁷² European Commission, ‘Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements’ (2011) OJ C 11/1.

⁷³ Nazzini (n 67) 225.

⁷⁴ Borghetti, Nicolici, and Petit (n 16); Martinez (n 15).

⁷⁵ Borghetti, Nicolici, and Petit (n 16).

Finally, in its SEPs Communication, the European Commission maintained that the non-discrimination element of FRAND indicates that right holders cannot discriminate between implementers that are “similarly situated.”⁷⁶ In this respect, by referring to “all third parties”, the Guidelines could be interpreted as referring to all “similarly situated” third parties, thus situated at the same licensing level defined in the standard. Against this background, as component manufacturer and end-user product providers are not similarly situated, the provision is not binding when it comes to licensing levels.

It is unclear whether the Commission plans to intervene in the patent dispute between tech companies and automakers. Its SEPs Communication did not address level discrimination.⁷⁷ Moreover, in its recent Communication on the intellectual property action plan, the Commission apparently downgraded the issues of the automotive industry, arguing that disputes may extend further as SEPs licensing is also relevant in the health, energy, smart manufacturing, digital and electronics ecosystems.⁷⁸ Furthermore, after acknowledging that, despite the guidance provided in the SEPs Communication, some businesses continue to find it difficult to agree on SEP licensing, the Commission merely declared its willingness to “facilitate industry-led initiatives to reduce frictions and litigations among players in specific sectors” and “consider reforms to further clarify and improve the framework governing the declaration, licensing and enforcement of SEPs.”⁷⁹ For instance, this may involve the creation of an independent system of third-party essentiality checks with a view to improving legal certainty and reducing litigation costs.

⁷⁶ European Commission, ‘Setting Out the EU Approach to Standard Essential Patents’, COM(2017) 712 Final, 7.

⁷⁷ Ibid.

⁷⁸ European Commission (n 6) 13. Axel Gautier and Nicolas Petit, ‘Smallest Salable Patent Practicing Unit and Component Licensing: Why 1\$ is not 1\$’ (2019) 15 *Journal of Competition Law & Economics* 690.

⁷⁹ European Commission (n 6) 13.

3.3 Towards transatlantic convergence?

The ongoing transatlantic discussion on level discrimination should be assessed against the broader framework involving the antitrust treatment of SEPs licensing. Indeed, the dispute over the licensing level represents the final episode of the debate on the economic rationale of FRAND commitments which has deeply evolved over the last decade.

In the early days, many scholars argued that SSOs licensing rules should operate to avoid any risk of patent hold-up, preventing SEP holders from demanding excessively high royalties when implementers are already locked into a standard.⁸⁰ Indeed, once a standard is adopted, implementers invest significant resources to ensure their production processes comply with the standard. Due to this investment, switching to alternative technologies can be prohibitively expensive. This situation creates an opportunity for SEP holders to obtain substantial leverage and to demand royalties far beyond the fair value of their contribution to the standard. From this perspective, FRAND policies become necessary, as negotiations between SEP holders and implementers generally take place only after implementers have used and infringed the technologies covered by SEPs.⁸¹

⁸⁰ See, for example, Joseph Farrell, John Hayes, Carl Shapiro, and Theresa Sullivan, 'Standard Setting, Patents, and Hold-Up' (2007) 74 *Antitrust Law Journal* 603; Mark A Lemley and Carl Shapiro, 'Patent Holdup and Royalty Stacking' (2007) 85 *Texas Law Review* 1991; Carl Shapiro, 'Injunctions, Hold-Up, and Patent Royalties' (2010) 12 *American Law and Economics Review* 280; Carl Shapiro, 'Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting' (2001) in *Innovation Policy and Economy* (Adam B. Jaffe, Josh Lerner, and Scott Stern, eds.), vol. 1, 119, MIT Press, Cambridge.

⁸¹ A Douglas Melamed and Carl Shapiro, 'How Antitrust Law Can Make FRAND Commitments More Effective' (2018) 127 *The Yale Law Journal* 2110, 2113-2115.

In turn, courts⁸² and competition authorities⁸³ have paid close attention to the potential anticompetitive consequences created by patent hold-up, technology lock-in, and royalty stacking. As a consequence, the idea that a FRAND commitment implies a waiver of the right to seek injunctions against infringers has taken centre stage. Such a no-injunction policy hinges on the belief that in the SEPs scenario the bargaining process is imbalanced and inevitably results in unfair royalties, to the detriment of implementers.

Nevertheless, a different strand of literature has progressively questioned this narrative, denouncing the economic fallacy of anticompetitive theories involving standardisation practices and arguing that, contrary to popular belief, there is no empirical evidence of structural and systematic problems of hold-up and royalty stacking affecting SEPs licensing.⁸⁴

⁸² See, for example, *Microsoft Corp. v. Motorola, Inc.*, 795 F.3d 1024, 1031 (9th Cir. 2015); *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1209 (Fed. Cir. 2014); *In re Innovatio IP Ventures, LLC Patent Litigation*, 921 F. Supp. 2d 903 (N.D. Ill. 2013).

⁸³ See, for example, Canadian Competition Bureau, ‘Intellectual Property Enforcement Guidelines’ (2019), para. 199; Government of India, Ministry of Commerce & Industry, Department of Industrial Policy and Promotion, ‘Discussion Paper on Standard Essential Patents and Their Availability on FRAND Terms’ (2016) <https://dipp.gov.in/sites/default/files/standardEssentialPaper_01March2016_0.pdf> accessed 4 January 2021; US Department of Justice and Federal Trade Commission, ‘Antitrust Enforcement and Intellectual Property Rights: Promoting Innovation and Competition’ (2007) 37-38 <<https://www.justice.gov/atr/antitrust-enforcement-and-intellectual-property-rights-promoting-innovation-and-competition>> accessed 4 January 2021; US Federal Trade Commission, ‘The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition’ (2011) 22 <<https://www.ftc.gov/reports/evolving-ip-marketplace-aligning-patent-notice-remedies-competition>> accessed 4 January 2021.

⁸⁴ See, for example, Richard A Epstein and Kayvan B Noroozi, ‘Why Incentives for “Patent Holdout” Threaten to Dismantle FRAND, and Why It Matters’ (2017) 32 *Berkeley Technology Law Journal* 1381; Alexander Galetovic and Stephen Haber, ‘The Fallacies of Patent-Holdup Theory’ (2017) 13 *Journal of Competition Law & Economics* 1; Alexander Galetovic, Stephen Haber, and Ross Levine, ‘An Empirical Examination of Patent Holdup’ (2015) 11 *Journal of Competition Law & Economics* 549; Damien Geradin, ‘Moving Away from High-Level Theories: A Market-Driven Analysis of FRAND in the Context of Standardization’ (2014) 59 *The Antitrust Bulletin* 327; Anne Layne-Farrar, ‘Patent Holdup and Royalty Stacking Theory and Evidence: Where Do We Stand After 15 Years of History?’ (2014) background paper for the 122nd Meeting of the OECD Competition Committee, <<https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD%282014%2984&doclanguage=en>> accessed 4 January 2021; Gregor Langus, Vilen Lipatov, and Damien Neven, ‘Standard-Essential Patents: Who Is Really Holding Up (And When)?’ (2013) 9 *Journal of Competition*

In fact, while courts, antitrust authorities, and policy makers have been overly concerned with hold-up risks involving the strategic use of SEPs, reverse hold-up is equally worrisome. This occurs when potential licensees opportunistically rely on FRAND commitments in order to escape the payment of royalties or to strike a better deal. Such a goal may be achieved by artificially dragging out licence negotiations or by engaging in time-consuming and costly litigation with SEP holders. Given the inherent vagueness of the FRAND acronym, patent holders and licensees often disagree over what licensing rates are FRAND, and the latter may use FRAND commitments as leverage to demand sub-competitive royalty rates under threat of litigation.

Indeed, hold-up and hold-out are two sides of the same coin. They both arise in licensing relationships characterised by significant information asymmetries, agency costs and legal uncertainty associated with patent enforcement. Whereas hold-up theory points the finger at the opportunism of patent holders for rent-seeking, hold-out theory is more concerned with moral hazard implementers over relying on FRAND commitments. Consequently, whereas the hold-out story implies that patent rights should not be watered down, hold-up proponents argue that SEP holders are reaping over-competitive rents by abusing their market power.⁸⁵ Therefore, FRAND pledges build upon a twofold economic rationale as they are intended to address both of these economic issues at the same time.

Law & Economics 253; J Gregory Sidak, 'The Antitrust Division's Devaluation of Standard-Essential Patents' (2015) 104 *Georgetown Law Journal* 48; Daniel F. Spulber, 'Innovation Economics: The Interplay Among Technology Standards, Competitive Conduct, and Economic Performance' (2013) 9 *Journal of Competition Law & Economics* 777.

⁸⁵ Colleen V Chien, 'Holding Up and Holding Out' (2014) 21 *Michigan Telecommunications & Technology Law Review* 1, 5-6.

By taking stock of these concerns and considering hold-out as an even more serious impediment to dynamic innovation than hold-up⁸⁶, in the US, the DoJ recently promoted a significant policy shift. In 2019, the DoJ, along with the PTO and NIST, updated its position on remedies for FRAND-encumbered SEPs, rejecting the no-injunction rule.⁸⁷ Similarly, intervening in *Qualcomm* and in *Continental v. Avanci*, the Department argued that deriving antitrust liability from an alleged violation of FRAND commitments discourages the well-established principle of market-based pricing and distorts SEPs licensing negotiations, ultimately deterring pro-competitive or competitively neutral conduct.⁸⁸ The argument is that antitrust law should not be used as a tool for policing FRAND commitments made by patent holders to SSOs.⁸⁹ Moreover, updating its previous IEEE’s Business Review Letter, the DoJ has stated that “concerns over hold-up as a real-world competition problem have largely dissipated” and the 2015 Letter proved to be incorrect in focusing on the risk of hold-up without considering the possibility of hold-out by patent implementers or the effect on patent holders’ innovation incentives.⁹⁰

The new approach was ultimately embraced by the Court of Appeal for the Ninth Circuit in *Qualcomm*, which noted “the persuasive policy arguments of several academics and practitioners with significant experience in SSOs, FRAND, and antitrust enforcement, who have expressed caution about using antitrust laws to remedy what are essentially contractual disputes between private parties engaged in the pursuit of

⁸⁶ See Delrahim (n 39) 10, arguing that, as innovators make an investment before they know if it will ever pay off, they are constantly on the losing end vis-à-vis implementers.

⁸⁷ US Department of Justice, US Patent and Trademark Office, and National Institute of Standards and Technology (n 40).

⁸⁸ US Department of Justice (n 38); US Department of Justice (n 52).

⁸⁹ Delrahim (n 39) 5.

⁹⁰ US Department of Justice (n 31) 4 and 8.

technological innovation.”⁹¹ By the same token, in *Continental v. Avanci*, the Northern District of Texas argued that a violation of a FRAND contractual obligation is not in itself an antitrust violation.⁹²

Similarly, in Europe, the national courts have recently recognised the limited role of antitrust in these kinds of disputes and the importance of ensuring SEP rights enforcement against infringers by endorsing an “unwilling licensee” standard for injunctive relief. Notably, in *Sisvel v. Haier*, the German Federal Supreme Court held that an implementer must participate in licence agreement negotiations in a target-oriented manner, making offers of its own and showing willing to accept a licence on any terms that are FRAND, rather than merely rejecting the patent holder’s offers.⁹³ In *Unwired Planet*, the UK Supreme Court stated that hold-out effectively forces the SEP holder to agree “on a lower royalty rate than is fair”; therefore, the possibility of granting an injunction is a necessary component of the balance that an SSO’s IPR Policy seeks to strike, “in that it is this which ensures that an implementer has a strong incentive to negotiate and accept FRAND terms for use of the owner’s SEP portfolio.”⁹⁴ Additionally, the Court reached the conclusion that the FRAND commitment is a “contractual derogation” from an SEP holder’s right to obtain an injunction to prevent any infringement of its patent.⁹⁵

By and large, a transatlantic convergence is apparently emerging on two topical issues: firstly, on the purpose of FRAND commitments, which are intended to address both

⁹¹ *Qualcomm* (n 20).

⁹² *Continental Automotive System v. Avanci* (n 51).

⁹³ Bundesgerichtshof, 5 May 2020, Case KZR 36/17, *Sisvel v. Haier*.

⁹⁴ *Unwired Planet v. Huawei*, [2020] UKSC 37, paras 10, 61 and 167. Vice versa, “if the patent holder were confined to a monetary remedy, implementers who were infringing the patents would have an incentive to continue infringing until, patent by patent, and country by country, they were compelled to pay royalties.”

⁹⁵ *Ibid.* para 14.

hold-up and hold-out risks in order to achieve a fair balance between the interests of implementers and owners of SEPs; and, secondly, on their contractual nature, which implies a limited role for antitrust law in SEPs disputes.⁹⁶

Against this background, the debate on level discrimination should be regarded as a corollary of the broader issues concerning the function of FRAND promises. As noted by one scholar, as the traditional goal of FRAND commitments is to reduce the risk of hold-up, the policy question is whether or not level discrimination is incompatible with this objective.⁹⁷ Based upon the same assumption, in *Qualcomm*, the FTC complained that Qualcomm forced OEMs to accept inflated royalties that did not reflect the value of the patents at stake and that operated as a tax on rivals.⁹⁸

However, given that the hold-up theory has been questioned and the primary purpose of FRAND commitments is no longer just to tackle patent hold-up, the economic rationale for supporting the licence-to-all approach is absent. Indeed, as a matter of fact, licence-to-all solutions assume that SEP holders' freedom should be restricted to prevent them from engaging in moral hazard and exploitative practices. Accordingly, patent owners should not only comply with a burdensome negotiation framework for establishing reasonable and non-discriminatory royalties, but they should also be forced to satisfy any licence seeker, regardless of its position in the value chain. However, it has been demonstrated that, under general conditions, the end consumer price as well as the overall royalty payment do not change following a refusal to license SEPs to component

⁹⁶ See, also, Haris Tsilikas, 'The New Landscape in FRAND Litigation' (2020) CPI Antitrust Chronicle (December) 1, 8, arguing that *Qualcomm*, *Sisvel* and *Unwired Planet* provide strong case law support to the US DoJ's policy pronouncements. Similarly, Michael Murray, 'Remarks to the Honorable Lee Yeakel IP Inn of Court' (2020) <<https://www.justice.gov/opa/speech/acting-principal-deputy-assistant-attorney-general-michael-murray-delivers-remarks>> accessed 4 January 2021.

⁹⁷ Nazzini (n 67) 219.

⁹⁸ FTC (n 33).

makers.⁹⁹ As the total welfare arising from the transaction does not stand to increase from moving the level of license, it is not Pareto efficient to force SEP holders to engage with any manufacturers along the supply chain. In any case, a finding that a patent holder's refusal to license a FRAND-committed SEP at any point in the supply chain constitutes an antitrust violation is at odds with the emerging consensus on the contractual nature of FRAND commitments.

4 Concluding remarks.

The discussion over SEPs licensing levels has garnered much attention. Along with the spread of the IoT, the increasing economic importance of interconnection technologies for industries other than ICT has placed renewed emphasis on the bargaining game between implementers and patent holders. On one side, manufacturers attempt to reduce the economic power of SEP holders arising from the growing centrality of new generation mobile networks. On the other side, SEP holders claim that their patent rights should not be watered down to the extent that they are effectively precluded from receiving fair compensation for their investments in technological breakthroughs.

As far as competition law is concerned, the key question is whether a patent owner's refusal to license a FRAND-committed SEP at any point in the supply chain constitutes an antitrust violation.

In the US, the Ninth Circuit in *Qualcomm*, the Northern District of Texas in *Continental v. Avanci*, and the DoJ in the Avanci Business Review Letter stated that an SEP holder is free to choose the party across the supply chain that it deems most appropriate for

⁹⁹ Anne Layne-Farrar, Gerard Llobet, and Jorge Padilla, 'Patent Licensing in Vertically Disaggregated Industries: The Royalty Allocation Neutrality Principle' (2014) 95 *Communications & Strategies* 61.

negotiating a FRAND licence. It follows that licensing at end-product level, instead of component level, cannot be considered an antitrust violation. More generally, these decisions reflect the DoJ's recent policy approach of evaluating FRAND commitments as mere contract law problems and emphasising the significance of hold-out risks.

It is hard to predict whether and in what extent the new US Administration will dissociate itself from the previous Administration on SEPs enforcement. While the FTC didn't seek a Supreme Court review of the *Qualcomm* case,¹⁰⁰ Richard Powers, the Acting Assistant Attorney General of the DoJ Antitrust Division, has removed the watermark placed on the 2015 IEEE Business Review Letter and moved the 2020 IEEE Letter to the competition advocacy portion of the DoJ website, hence apparently downgrading Delrahim's position and restoring the previous practice.¹⁰¹ Nonetheless, the Avanci Business Review Letter is still in place.

In Europe, the decisions of the German Federal Supreme Court in *Sisvel v. Haier* and of the UK Supreme Court in *Unwired* concurred with the US approach as to the contractual nature of FRAND commitments and their aim to address both hold-up and hold-out risks in order to achieve a fair balance between the interests of implementers and SEP holders. Moreover, neither the *Huawei* landmark judgement nor the Guidelines accompanying the European Block Exemption Regulation for horizontal co-operation agreements support the argument that SEP holders have an antitrust duty to license in favour of a specific licensee.

¹⁰⁰ Rebecca Kelly Slaughter, 'Statement on Agency's Decision not to Petition Supreme Court for Review of Qualcomm Case', (2021) <<https://www.ftc.gov/news-events/press-releases/2021/03/statement-acting-chairwoman-rebecca-kelly-slaughter-agencys>> accessed 16 April 2021.

¹⁰¹ The DOJ 2020 IEEE Letter (n 31) is now available on the page listing "Comments to States and other Organizations" (<<https://www.justice.gov/atr/comments-states-and-other-organizations>> accessed 16 April 2021).

Given that the debate on level discrimination is a corollary of the broader discourse concerning the function of FRAND promises, the emerging transatlantic convergence on the nature and purpose of FRAND commitments appears to provide no solid economic and legal bases in favour of licence-to-all solutions.