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Citation: McDonagh, L. & Bonadio, E. (2019). Standard Essential Patents and the Internet of Things. Brussels, Belgium: European Parliament.

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Standard Essential Patents and the Internet of Things

Legal Affairs



Standard Essential Patents and the Internet of Things

IN-DEPTH ANALYSIS

Abstract

This in-depth analysis, commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the JURI Committee, assesses the European Commission of (EC) Communication of 29 November 2017 on the EU approach to Standard Essential Patents. The report examines the principles identified in the Communication with respect to the Commission's proposals on (i) increasing transparency on SEPs; (ii) determining valuation of SEPs(*Standard Essential Patents*) and FRAND (*Fair, Reasonable, and Non-Discriminatory*) terms; and (iii) enforcement.

The report evaluates the efficient resolution of licensing disputes over FRAND, including via litigation, arbitration and mediation, licensing pools and collective licensing. The current document also puts forward some policy recommendations to, inter alia, enhance the general environment of FRAND licencing in the context of SEPs.

ABOUT THE PUBLICATION

This research paper was requested by the European Parliament's Committee on Legal Affairs and commissioned, overseen and published by the Policy Department for Citizens' Rights and Constitutional Affairs.

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LINGUISTIC VERSION

Original: EN

Manuscript completed in January 2019
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This document is available on the internet at:
<http://www.europarl.europa.eu/supporting-analyses>

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LIST OF ABBREVIATIONS

CJEU	Court of Justice of the EU
CoR	Committee of the Regions
EC	European Commission
EP	European Parliament
EPO	European Patent Office
FRAND	Fair, reasonable and non-discriminatory
GDP	Gross Domestic Product
ICT	Information and communication technology
IoT	Internet of Things
SEP	Standard-essential Patent
SSO	Standard Setting Organisation
PAE	Patent Assertion Entity

EXECUTIVE SUMMARY

Background

This report provides legal analysis of the European Commission (EC) Communication of 29 November 2017 (“the Communication”) which emphasises the need to balance standardisation of technology with the rights of patent-holders.

The key advantage of standardisation is that it can secure efficiency gains, and benefit consumers, by allowing manufacturers to increase the overall size of markets and thus achieve economies of scale as well as increased product substitutability. Standardisation is particularly crucial in the information and communication technology (ICT) and Internet of Things fields (IoT) (consumer electronics, automotive industry, and electricity grid industry). Furthermore, this is not merely a consumer issue – standardisation is also key to the use of ICT and IoT in the development of ‘smart cities’ capable of dealing with a range of issues, such as traffic regulation, resource management and public health, in a more efficient manner.

Patents are a type of property. As with any kind of property, owners must be able to enforce their rights against competitors who are trespassing, or infringing, upon their patents. Without the ability to enforce, there would be no way to recoup the investment in resources required to create a new patentable invention in the first place. Patents cover new inventions, including important technology standards. Patents on standards are commonly known as Standard-Essential Patents (SEPs) and are frequently litigated.

The existence of SEPs – and associated litigation - has potentially disruptive consequences for the manufacture, marketing and distribution of complex products that include many patented standards, eg ICT products such as smart-phones incorporating a camera, a video, a web browser, wireless, text messages, etc, as well as an increasing array of IoT ‘networked’ products such as wearable devices and appliances for ‘smart homes’. By enforcing their patents – their time-limited monopoly right - owners of SEPs could, if they wished, use the patent enforcement system to ‘hold up’ or prevent competitors from launching rival products that use the same standards. This raises serious concerns over competition in the marketplace and the need to maintain interoperability to ensure the IoT industry can develop. Therefore, acute tension exists between SEPs (which offer their owners R&D incentives/rewards in the form of monopolistic rights) and standards (which allow for widespread and collective use). This is particularly the case in the ICT and IoT fields, which have recently witnessed an increase in the number of granted patents.

How can an appropriate balance be reached? How can the optimum scenario of incentivising the development of new inventive technologies, including standards, while also allowing fair competition be achieved? The answer is clear: fair licensing practices. In order to balance the need for standardisation, required for public use, with the private rights of SEP-holders, standard-setting organisations (SSOs) typically require SEP-owners to give an irrevocable undertaking that they are prepared to grant competitors licences on FRAND terms (fair, reasonable, and non-discriminatory).

Difficulties arise however, when a consensus cannot be reached between the parties as to what is FRAND in a particular scenario. If SEP-owners and prospective licensees disagree over eg the value of the royalties that should be considered fair and reasonable, or if one party considers that the licence terms are discriminatory, or if the parties disagree over the territorial scope of the licence, this could lead to inconvenient hold-up of technology diffusion and marketing of products and service. This could

have significance beyond the individual dispute - McKinsey reported in 2015 that without interoperability the IoT industry could lose out on as much as 40% of its potential value.

Due to the fact that a variety of different companies require access to SEP-protected technologies (eg, WiFi, technology standards such as 4G and 5G) a transparent SEP licensing regime is viewed as essential for the development of the IoT. In the past it was mainly ICT companies (particularly the manufacturers of phones, laptops, etc.) that engaged in SEP licensing. However, with the IoT a new range of companies are having to consider SEPs – the manufacturers of household appliances, automobiles, etc. This makes the achievement of a balanced SEP licensing system a vital aim of the European Union.

The EU courts have emphasised this need for balance. In the seminal case *Huawei v ZTE* (Case C-170/13 *Huawei Technologies*, EU:C:2015:477) the Court of Justice of the European Union (CJEU) upheld the approach that seeking an injunction against a willing licensee of a SEP can be an abuse of a dominant position; but that SEP-owners, who commit to grant third parties a FRAND-license, do not abuse their dominant position in seeking an injunction or the recall of products provided that they comply with certain strict obligations.

In the aftermath of the *Huawei v ZTE* case, the European Commission (EC) Communication of 29 November 2017 considered three important aspects of SEPs: (i) the need to have a more transparent environment for negotiations between SEP-owners and licensees; (ii) the requirement to have common principles governing the valuation of SEPs technologies and FRAND terms; and (iii) proposals for a more balanced enforcement system.

Aim and findings of the study

This study aims, inter alia, at verifying the effectiveness of the approach proposed in the Communication. It is aimed at assessing whether the approach adopted by the CJEU in *Huawei v ZTE* (an approach that has been endorsed in the Communication and by national judges) satisfies in an effective manner the interests of all stakeholders, ie SEP-owners, standard implementers, especially SMEs, and consumers. This report concludes that these are indeed sensible approaches.

(I) Transparency

The Communication is correct that transparency is crucial. Moreover, encouraging greater cooperation between the SSOs and the Patent offices is a laudable aim. The next requirement is a detailed plan for achieving this, including deepening the links between the EU institutions, the EPO and SSOs. We note that the recently announced EU Commission Expert Group on SEPs could play a role in this regard. This is in line with the need for all stakeholders, especially SSOs and the owners of SEPs, to raise greater awareness of FRAND licensing processes and their implications, especially for SMEs. In particular, the links between EU institutions, the EPO, the national patent offices in all EU Member States and SSO could be strengthened by the use of publicly accessible databases that can make available precious information on: (i) the current owner of a patent and (ii) the status of the patent (thus potentially clarifying the overall breadth of the SEP, and thus the implementer's potential exposure). In this regard, formal, written agreements between SSOs and patent offices in Europe, facilitated by the institutions of the EU such as the Commission and European Parliament, should be secured to guarantee that the links to such important information are smoothly and efficiently managed.

(II) Valuation of SEP technologies and FRAND terms

The principles identified in the Communication with a view to guiding the valuation of SEPs and FRAND terms are sound and viable in general terms. Nonetheless, the principles lack detail with regard to the

precise terms of FRAND licensing and the exact meaning of good faith. Some academic commentators and practitioners have criticised the Communication for a lack of clarity in the guidance regarding the determination of the balance between patent rights and the principles of fair competition. However, as the Commission concluded in the Communication, there is no 'one-size fits all' solution, particularly in light of the diversity of licensing practices across different sectors and geographical areas. As such, the Communication strikes the appropriate balance by providing as much guidance as possible while leaving it to national courts to decide what is FRAND in each case.

Additionally, in line with the Communication, schemes should be explored with a view to striking a more harmonious balance between the interests of all stakeholders, including:

- encouraging SEPs holders to disclose - before the adoption of the standard - the most restrictive licensing terms, such as the maximum royalty rate;
- requiring undisclosed SEPs to be licensed on a royalty-free basis;
- encouraging SSOs to organise and manage auctions with a view to choosing the most convenient technology;
- inserting most-favoured licensee clauses in licensing agreements;
- adopting collective licensing and/or patent pools schemes;
- using open source platforms to enhance transparency and the provision of information

(III) Proposals for a more balanced enforcement system

The policy recommendations in the Communication on enforcement are generally appropriate. The reliance of the EC Communication on the CJEU's decision in *Huawei v ZTE* is opportune. Indeed, the CJEU guidelines aim to satisfy the interests of all stakeholders, ie SEP-owners, standard implementers, particularly SMEs, and consumers. The Communication's recommendation of a balanced, 'case-by-case' approach, with an important role for national courts, appears well-reasoned.

While the above recommendations are appropriate, alternatives to litigation can often be more swift and more cost-effective ways of resolving disputes between SEP-holders and implementers, especially SMEs. Mediation and arbitration offer considerable cost benefits when compared with litigation, including (i) quicker and less expensive proceedings, (ii) a more informal and flexible dispute environment, (iii) confidentiality, (iv) more control over the proceedings, (v) enhanced and improved communication between the parties. Arbitration proceedings may be particularly important to determine SEP related cases. Indeed, as a general remark, arbitration worldwide is growing in importance as a means of resolving IP licensing disputes. Alternative dispute resolutions may also be embraced by the Unified Patent Court, if and when it becomes operational. The UPC will feature highly specialised judges and likely offer a dedicated arbitration and mediation centre. It would therefore be recommendable to provide UPC arbitrators and mediators with (even more enhanced) training in the specific field of standard essential patents.

GENERAL INFORMATION

KEY FINDINGS

- The conclusions reached by the EC Communication of 29 November 2017 are to a great extent reasonable and appropriate.
- The CJEU guidelines in *Huawei v ZTE* (an approach that has been endorsed in the Communication) attempt to satisfy the interests of all stakeholders, ie SEP-owners, standard implementers, especially SMEs, and consumers. The Communication's recommendation of a balanced, 'case-by-case' approach, with an important role for national courts, appears well-reasoned.
- The principles identified in the Communication with a view to encouraging transparency, guiding the valuation of SEPs and FRAND terms, and managing enforcement are sound and viable, including the promotion of alternative dispute resolutions, which may offer cheaper and quicker ways to manage SEPs disputes, especially before the Unified Patent Court (if and when it is fully operational).
- In line with the Communication, schemes could be explored with a view to striking a more harmonious balance between the interests of all stakeholders, including:
 - (i) encouraging SEP-owners to disclose - before the adoption of the standard - the most restrictive licensing terms, such as the maximum royalty rate;
 - (ii) requiring undisclosed SEPs to be licensed on a royalty-free basis;
 - (iii) encouraging SSOs to organise and manage auctions with a view to choosing the most convenient technology;
 - (iv) inserting most-favoured licensee clauses in licensing agreements;
 - (v) adopting collective licensing and/or patent pools schemes;
 - (vi) using open source platforms to enhance transparency and the provision of information.

1. INTRODUCTION

Standardisation is key to innovative developments in a range of industrial sectors. It can secure efficiency gains and benefit consumers by allowing manufacturers to increase the overall size of markets, and thus achieve economies of scale as well as the increasing of product substitutability. Standardisation is particularly important in the rapidly developing information and communication technology (ICT) and 'Internet of Things' fields (IoT) (consumer electronics, automotive industry, and electricity grid industry). Since the ICT and IoT fields are some of the most important business sectors in Europe, and are projected to grow rapidly in upcoming years, ensuring that standardisation works to the benefit of companies that operate in the European Union is a priority for the EU's institutions.

Importantly, standardisation goes beyond the expected consumer issues – it is also key to recent discussions about the use of ICT and IoT to create 'smart cities' capable of dealing with issues such as traffic regulation, resource management, and public health in a more efficient manner (Manyika, Chui, Bisson, Woetzel, Dobbs, Bughin & Aharon, 2015). Harmonious interaction between the private and public sectors is crucial in this regard, underlining the importance of standardisation for EU member states.

Patents are a type of property, granting a monopoly over new inventions, eg a protected technology, that lasts for a 20 year period. In Europe, patents are typically granted at the European Patent Office (EPO) or at the national patent offices. As with any kind of property, owners must be able to enforce their rights against competitors who are trespassing, or infringing, upon their patents. Without the ability to enforce, there would be no way to recoup the investment in resources required to create a new patentable invention in the first place – including patents on important new technology standards relevant to ICT and IoT.

Patents on standards are commonly known as Standard-Essential Patents (SEPs). SEPs are frequently litigated as a result of their centrality to the ICT and IoT fields, which contributes to their overall value (Contreras, Gaessler, Helmers & Love, 2018). Crucially, the existence of SEPs – and associated litigation between patent holders and implementers of technology standards – has potentially disruptive consequences for the manufacture, marketing and distribution of complex products. This is particularly apparent with respect to ICT products such as smart-phones incorporating a camera, a video, a web browser, wireless, text messages, etc, as well as the increasing array of IoT 'networked' products such as wearable devices and appliances for 'smart homes' (Tsilikas & Tapia, 2017). Indeed, while in the past it was mainly ICT companies (particularly the manufacturers of phones, laptops, etc.) that had to engage in SEP licensing, with the rise of the IoT sector a new range of companies are having to consider SEPs – eg, the manufacturers of household appliances, automobiles, etc.

There is no doubt that acute tension exists between SEPs (which offer their owners R&D incentives/rewards in the form of monopolistic rights) and standards (which allow for widespread and collective use). This is related to the classic debate between the need to protect the patent monopoly and the principles of fair competition. Owners of SEPs could, if they wished, use the patent enforcement system to 'hold up' or prevent competitors from launching rival products that use the same standards (Lemley & Shapiro, 2008; Bonadio, 2013). There is also a risk that the exercise of monopoly power by SEP-owners could lead to the need for implementers to obtain multiple licences – this is known as the problem of 'royalty-stacking' (Lemley, 2007; Armstrong, Mueller & Syrett, 2014; Jones, 2014). The potential role of Patent Assertion Entities (PAEs) in creating nuisance litigation over SEPs in the ICT/IoT fields is a related concern (Helmers, Love & McDonagh, 2014; Contreras, Gaessler, Helmers & Love, 2018). These concerns are further highlighted by the fact that in the ICT and IoT fields

have recently witnessed an increase in the number of granted patents, which indicates that rates of litigation in this area is likely to continue to rise.

At the same time, there are differing views among legal analysts and economists about how profound the risks of 'hold up' and 'royalty-stacking' are in the context of SEPs, with some scholars arguing that the risks of overall economic harm can sometimes be over-stated (Spulber, 2018; Galetovic, Haber & Zaretzki, 2018). Nonetheless, as explored below in 2.1, recent cases at the CJEU and national levels demonstrate that SEPs are a genuine cause for concern with respect to ensuring fair competition in the marketplace and maintaining interoperability to facilitate the development of the IoT industry (Lemley, 2007; Bonadio, 2013; Contreras, Gaessler, Helmers & Love, 2018).

Indeed, in order to balance the need for standardisation with the private rights of SEP-owners, standard-setting organisations (SSOs) typically require SEP-owners to give an irrevocable undertaking that they are prepared to grant competitors licences on FRAND terms (fair, reasonable, and non-discriminatory).

Difficulties arise however, when a consensus cannot be reached between the parties as to what is FRAND in a particular scenario. If SEP-owners and prospective licensees disagree over the value of the royalties that should be considered fair and reasonable, or if one party considers that the licence terms are discriminatory, or if the parties disagree over the territorial scope of the licence, this could lead to inconvenient hold-up of technology diffusion and marketing of products and service (Ünver, 2018). Moreover, this could have significance beyond the individual dispute: McKinsey reported in 2015 that without interoperability the IoT industry may lose out on as much as 40% of its potential value (Manyika, Chui, Bisson, Woetzel, Dobbs, Bughin & Aharon, 2015).

Due to the fact that a variety of different companies require access to SEP-protected technologies (eg, WiFi, technology standards such as 4G and 5G) a transparent SEP licensing regime is essential for the development of the IoT sector. This makes the achievement of a balanced SEP licensing system a vital aim and pressing need of the European Union. The EU courts have already considered this need for balance - in the seminal case of *Huawei v ZTE* the Court of Justice of the European Union (CJEU) upheld the approach that seeking an injunction against a willing licensee of a SEP can be an abuse of a dominant position; and that SEP-owners, who commit to grant third parties a FRAND-license, do not abuse their dominant position in seeking an injunction or the recall of products, only provided that they comply with certain strict obligations (Case C-170/13 *Huawei Technologies*, EU:C:2015:477).

In the aftermath of the case of *Huawei v ZTE*, the European Commission (EC) Communication of 29 November 2017 ("the Communication") considered three important aspects of SEPs (Swanson & Baumol, 2005; Farrell, Hayes, Shapiro & Sullivan, 2007):

- (i) the need to have a more transparent environment for negotiations between SEP-owners and licensees;
- (ii) the need of common principles governing SEPs technologies; and
- (iii) proposals for a more balanced enforcement system. This study seeks to verify the effectiveness of the approach proposed in the EC Communication.

In s.2.1 this report aims to:

- assess whether the approach adopted by the CJEU in case C-170/13 *Huawei v ZTE* (an approach that has been endorsed in the Communication and by national judges) satisfies in an effective manner the interests of all stakeholders, ie SEP-owners, standard implementers, especially SMEs, and consumers;¹

¹ *Unwired Planet v Huawei* [2017] EWHC 711 (Pat) (holding, amongst other issues, that the non-discrimination element of FRAND indicates that SEPs holders cannot discriminate between implementers that are "similarly situated").

Summary assessment: This is indeed a sensible approach. The complexities involved in SEP litigation and FRAND licensing make it difficult to prescribe a strict ‘one-size fits all’ approach. The national courts, making reference to the CJEU where necessary, are in the best position to decide on a case-by-case basis whether the FRAND negotiations have been conducted on a reasonable basis, in good faith, and whether an injunction is warranted in the case of infringement. Yet the absence of the Unified Patent Court (UPC) for the EU – which has been delayed by Brexit, German and Hungarian court challenges (and also features the non-participation of Spain, Poland and Croatia) - leaves the possibility that fragmentation of SEP legal outcomes can occur within Europe. Nonetheless,, national courts have, thus far, taken a sensible approach. The 2017 English High Court decision in *Unwired Planet International Ltd v Huawei* [2017] EWHC 711, uses guidance from the CJEU decision in *Huawei v ZTE*, and emphasises the significance of global licensing. This acknowledgement is a positive development, as standardisation of IoT (for example, 5G) is a global issue. Overall, therefore, this report finds that the Commission is right on this point - the legal complexity involved in FRAND negotiations and SEP litigation means that there is little than can be done from the EU level. SEP cases are self-evidently ‘hard cases’ that are best resolved at the national level

In s.2.2 this report aims to:

- examine the proposal (mentioned in the Communication) to increase transparency on SEP exposure, which seems to be particularly crucial in the context of IoT where new players with little experience of SEP licensing often enter the market for connectivity

Summary assessment: The EC is correct in the Communication that transparency is crucial. Moreover, encouraging greater cooperation between the SSOs and the Patent offices is a laudable aim. The next requirement is a detailed plan for achieving this, including deepening the links between the EU institutions, the EPO, national patent offices, and SSOs. This report notes that the recently announced EU Commission Expert Group on SEPs (‘Group of experts on licensing and valuation of standard essential patents (E03600)’) could play a role in this regard. This is in line with the need for all stakeholders, especially SSOs and SEP-owners, to increase awareness of FRAND licensing processes and their implications, especially for SMEs (as also mentioned in the Communication).

In s.2.2 this report further aims to:

- verify whether the principles identified in the Communication with a view to guiding the valuation of SEPs and FRAND terms, are sound and viable;

Summary assessment: The principles are sound and viable in general terms. Nonetheless, the principles could be said to be lacking in detail with regard to the precise terms of FRAND licensing and the exact meaning of good faith negotiations - as we explore over the course of this report, some academic commentators and practitioners have criticised the Communication for a lack of clarity in the guidance regarding the determination of the balance between patent rights and the principles of fair competition. However, as the Commission concluded, there is no ‘one-size fits all’ solution, particularly in light of the diversity of licensing practices across different sectors and geographical areas. As such, the Communication strikes the appropriate balance by providing as much guidance as possible while leaving it to national courts to decide what is FRAND in each case.

As noted below in 2.2, a number of policy statements may be considered by EU institutions with regard to enforcement:

- are the principles relating to enforcement sound? This includes the preference to avoid, as far as possible, disputes related to FRAND commitments, eg by encouraging SEP-owners to disclose - before the adoption of the standard - the most restrictive licensing terms, such as the maximum royalty rate (royalty-capping approach); eg by requiring undisclosed SEPs to be licensed on a royalty-free basis; both proposals aim at minimising the impact on final consumers, on whom costs deriving from high royalty are usually passed.
- an alternative proposal would be to give SSOs the task to manage auctions between different technologies - patent owners that want their technology to be included as or in the standard could submit offers to SSOs to license their patent specifying a royalty. The implementer would then proceed to choose the most convenient offer (Swanson & Baumol, 2005; Farrell, Hayes, Shapiro & Sullivan, 2007). Such a system may offer a benchmark for calculating the FRAND royalty rate.
- there is a need to eliminate any discrimination amongst implementers, eg by relying on most-favoured licensee clauses (MFL) in licensing agreements, taking into account competition-related concerns. This clause requires SEP-owners to promptly notify a licensee of any licence, granted by them to a third party for the same patent under analogous circumstances (Brooks & Geradin, 2011; Van Bael & Bells, 2005). Such a clause aims thus at promising that no other licensee will obtain better terms and conditions (Lichtman, 2006).
- this report concurs with the Communication that alternative dispute resolution mechanisms (including mediation and arbitration) should be promoted as swift and cost-effective ways to resolve disputes between SEP-owners and implementers, especially SMEs (Betancourt, 2016). Alternative dispute resolutions may also be embraced by the Unified Patent Court, when it will be fully operational, as also noted by the Communication.² Indeed, the UPC will feature highly specialised judges and likely offer a dedicated arbitration and mediation centre. It would therefore be recommendable to provide UPC arbitrators and mediators with (even more enhanced) training in the specific field of standard essential patents (McDonagh, 2016; McDonagh and Mimler, 2017).

As detailed in 2.3 the European Union institutions could explore the following options:

- enhancing the viability of collective licensing schemes, which would entail that participants to a SSO should be allowed to collectively negotiate royalty rates on behalf of standard implementers, so as to counterbalance the strong bargaining power held by SEP-owners.
- exploring the viability of licensing pools and other licensing platforms, including platforms that make use of advanced machine-learning (artificial intelligence), which may be particularly suitable for IoT industries, especially SMEs.
- investigating the viability of 'open source' approaches in standardisation processes, noting that ought to be pursued where possible; but also acknowledging that open-source success stories,

² See p. 12 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712.
<https://ec.europa.eu/docsroom/documents/26583>

such as software, have succeeded via copyright law, rather than patent law, and in the absence of a generally accepted system of open patenting, it may be insufficient as a solution.³

³ See p. 12 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712. <https://ec.europa.eu/docsroom/documents/26583>

2. ANALYSING THE EUROPEAN COMMISSION COMMUNICATION OF 29 NOVEMBER 2017

The Communication highlights three relevant areas in the field of SEPs where further action is required to optimise the relationship between SEPs and SSOs. The Communication puts forward:

- (i) proposals to create a more transparent environment for negotiations to take place between SEP owners and potential licensees;
- (ii) common valuation principles for SEP technologies; and
- (iii) recommendations for a balanced and predictable enforcement regime.

The key principles affirmed in the Communication are aimed at developing and maintaining a balanced, smooth and predictable environment for SEPs, which would particularly benefit the IoT field. Ultimately, by outlining these principles, the Communication attempts to fulfil two key goals: (a) to encourage the creation and incorporation of the best technologies in standards by ensuring developers get a fair return on their investments; and (b) to guarantee the highest levels of dissemination and access to standardised technologies as possible.

At first glance, these may seem to be easily reconcilable objectives - patent protection in the context of SEPs, while helping to guarantee a return on investment in R&D, nonetheless has the potential to restrict access to, and dissemination, of, standardised technologies. Taking a 'middle way' approach the Commission identifies solutions based on smooth licensing practices, transparent procedures and 'controlled' enforcement actions that represent positive steps towards achieving that balance.

As such, the Communication represents a laudable attempt by the Commission to put forward solutions for the current challenges of SEPs in the context of the IoT, taking into account the perspectives of key stakeholders - not only patent owners, but also European start-ups and EU citizens that often need access to products and services based on the best performing standardised technology.

Before examining the Communication's guiding principles in detail, it is necessary to outline the key CJEU and national case law that prompted the Commission's publication of the Communication.

2.1. Outlining the key case law at the EU level and in national jurisdictions

Under the Treaty on the Functioning of the European Union (TFEU) the EU has exclusive competence over competition and the internal market. For this reason IP and FRAND licensing comes within the remit of the European Commission.⁴ The Commission has used its investigative powers on a number of occasions, and has put forward the Horizontal Guidelines on the applicability of Article 101 TFEU to horizontal cooperation agreements (2010 version). As noted below, the EU Commission has made three significant interventions in the arena of SEPs and competition. In addition, the CJEU decision in *Huawei v ZTE* (Case C-170/13 Huawei Technologies, EU:C:2015:477)

⁴ See also Directive 2004/48/EC of 29.4.2004 on the enforcement of intellectual property rights, pub. OJ L 195 of 2.6.2004, recital 3

provided the key EU judicial statement on SEPs, FRAND and competition. These cases were examined in detail in a 2017 EC report (Pentheroudakis and Baron, 2017), so rather than duplicate this analysis, we highlight the key points below.

2.1.1. The European Commission and the CJEU

European Commission, Decision of 9.12.2009 relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union and Article 54 of the EEA Agreement, Case COMP/38.636, Rambus.

The 2007 Rambus case concerned Art 102 TFEU (Art 82 EC). The Commission stated that Rambus was abusing its dominant position in the DRAMS market by engaging in ‘patent ambush’ tactics, whereby it would initially conceal that it had patents relevant to the JEDEC standard, but then subsequently claim royalties for use of those patents. In response to the Commission’s concerns, Rambus agreed to put a five-year worldwide cap on its royalty rates for products that complied with JEDEC standards and reduced other royalty rates.

European Commission, DG Competition, Commitment Decision of 29 April 2014, C(2014) 2891 final, Samsung Electronics Co., Ltd., et. al.

Samsung committed to licensing its SEPs on mobile telecommunication standards on FRAND terms. During 2011 Samsung sought an injunction against Apple regarding its ETSI 3G UMTS standard. The Commission stated that Apple was acting as a willing licensee and that Samsung’s behaviour potentially constituted abuse of a dominant position under Art 102 TFEU. In response Samsung made an offer in line with Art 9 Regulation (EC) No 1/2003 to not seek injunctive relief from any court/tribunal in the EEA for infringement of its ‘Mobile SEPs’ against any potential licensee that complies with the ‘Licensing Framework’ for determining FRAND terms (the licensing framework envisaged either a licensing agreement or a cross-licensing agreement). This was accepted by the Commission. The Opinion considered what might amount to ‘unwilling’ behaviour from a potential licensor and provided guidance regarding settling FRAND disputes in line with EU competition rules.

European Commission, DG Competition, Decision of 29 April 2014, C(2014) 2892 final, Motorola Mobility Inc.

Here the Commission found that Motorola had engaged in abusive conduct in Germany by seeking to enforce an injunction against Apple on the basis of an SEP for which it had committed to FRAND licensing where Apple had agreed to take a licence framed around FRAND royalties determined by the German court. The Commission stated that ‘the acceptance of binding third party determination for the terms of a FRAND license in the event that bilateral negotiations do not come to a fruitful conclusion is a clear indication that a potential licensee is willing to enter into a FRAND license’. Moreover, Motorola’s insistence that Apple give up its right to challenge the validity of the Motorola SEPs was an anti-competitive action. Yet, the Commission accepted that injunctions must be an available remedy in a case where a licensee is unwilling to take a licence on FRAND terms. Whether a company is a ‘willing licensee’ should be determined on a case-by-case basis. The Commission noted that national courts and arbitrators are generally in a better position to determine FRAND terms. Notably, the Commission indicated that a Germany-only licence could be FRAND (an issue of relevance to subsequent case law examined below).

Case C-170/13 Huawei Technologies, EU:C:2015:477.

The Düsseldorf District Court requested a preliminary ruling from the CJEU regarding the availability of remedies, particularly injunctions, to SEP-owners who had made FRAND commitments, upon succeeding in patent infringement actions. In a landmark ruling, the CJEU held that Article 102 TFEU must be interpreted as meaning that the proprietor of a patent essential to a standard established by a standardisation body, which has given an irrevocable undertaking to that body to grant a licence to third parties on fair, reasonable and non-discriminatory ('FRAND') terms, does not abuse its dominant position, within the meaning of that article, by bringing an action for infringement seeking an injunction prohibiting the infringement of its patent or seeking the recall of products for the manufacture of which that patent has been used (Bharadwaj & Verma, 2018), as long as:

- (1) prior to bringing that action, the proprietor has, first, alerted the alleged infringer of the violation complained about by designating that patent and specifying the way in which it has been encroached upon, and, secondly, after the alleged infringer has expressed its willingness to conclude a licensing agreement on FRAND terms, presented to that infringer a specific, written offer for a licence on such terms, specifying, in particular, the royalty and the way in which it is to be calculated, and
- (2) where the alleged infringer continues to use the patent in question, the latter has not diligently responded to that offer, in accordance with recognised commercial practices in the field and in good faith, this being a matter which must be established on the basis of objective factors and which implies, in particular, that there are no delaying tactics.

A key point is found in paragraph 53 of the ruling: an 'undertaking to grant licences on FRAND terms creates legitimate expectations on the part of third parties that the proprietor of the SEP will in fact grant licences on such terms' (Case C-170/13 *Huawei Technologies*, EU:C:2015:477, paragraph 53).

2.1.2. National Jurisdictions

To allow competition, SEP-owners are obliged to licence on FRAND terms. This obligation is underpinned by EU competition law (as explained in *Huawei v ZTE*). In terms of national case law in European jurisdictions, as with the EC and CJEU rulings, a thorough assessment of SEPs national case law has recently been published by the EC (Pentheroudakis & Baron, 2017). For this reason this report does not attempt to duplicate this in-depth analysis, but rather it summarises the most important case outcomes in the most noteworthy cases in the key jurisdictions of Germany, The Netherlands, France and the UK, and indicate the influence of the CJEU decision in *Huawei v ZTE*. This report further takes account of judgments that occurred subsequent to the 2017 EC report. As we shall see, several European court rulings have allowed injunctions in the context of SEPs/FRAND - e.g. *St. Lawrence v Deutsche Telekom and HTC* (Germany, District court, 2015), *NTT DoCoMo v HTC* (Germany, District court, 2016), *St. Lawrence v Vodafone and HTC* (Germany, District court, 2016), *Unwired Planet v Huawei* (UK, English High Court, 2017), etc. This analysis of national case law sets the scene for our consideration of the Communication's recommendations in s2.2.

Germany

Mannheim District Court, 17 December 2013, 2 O 41/13 – *Vringo v ZTE*; Karlsruhe Court of Appeal, 19 February 2014, 6 U 162/13 – *ZTE v Vringo*: here the district court made an infringement finding regarding an SEP (cellular standard), with the appeal court rejecting a stay of proceedings pending the CJEU *Huawei* decision.

Mannheim District Court, 10 March 2015, 2 O 103/14 – *St Lawrence Communication v Deutsche*

Telekom; Karlsruhe Court of Appeal, 23 April 2015, 6 U 44/15 - *St Lawrence Communication v Deutsche Telekom*; Mannheim District Court, 27 November 2015, 2 O 106/14, 2 O 107/14, 2 O 108/14, *St Lawrence Communication v Deutsche Telekom*: here an injunction was granted against Deutsche Telekom due to infringement of an SEP (wideband speech-encoding standard) owned by St. Lawrence. It was held that the FRAND defence was unavailable to Deutsche Telekom as they were unwilling to conclude a global licence agreement. On appeal, the enforcement of the injunction was suspended; however, post-*Huawei v ZTE* (CJEU ruling) the Mannheim district court granted the injunction, following the CJEU guidance. Key to the case was the fact that the German court considered that a global licence would be FRAND.

Düsseldorf District Court, 3 November 2015, 4a O 144/14 und 4a O 93/14 - *Sisvel v Haier*; Düsseldorf Court of Appeal, 13 January 2016, 15 U 65/15 and 15 U 66/15 – *Sisvel v Haier*: here, in related cases, the Düsseldorf district court granted an injunction to Sisvel against Haier concerning a group of SEPs related to smartphones/tablets (GSM, GPRS, UMTS, LTE standards). The parties had failed to reach an agreement on a FRAND licence, with the defendants claiming that the licence fees were unreasonable and excessive, and that they had only been given a worldwide licence offer, rather than a Germany-specific one (yet the defendants failed to provide a counter-proposal).

Mannheim District Court, 8 January 2016, 7 O 96/14 - *Pioneer v Acer*; Karlsruhe Court of Appeal, 31 May 2016, 6 U 55/16: here the patent holder claimed that only a global licence would be FRAND – the court granted an injunction, holding that the defendant could not raise the FRAND defence in the light of the negotiations. On appeal, the Karlsruhe Court of Appeal upheld the injunction.

Düsseldorf District Court, 19 January 2016, 4b O 120/14, 4b O 122/14 and 4b O 123/14 – *Unwired Planet v Samsung*: here the German district court held that Samsung and Huawei's LTE and GSM-compliant handsets infringed Unwired Planet's SEPs (cellular technology).

Mannheim District Court, 29 January 2016, 7 O 66/15 - *NTT DoCoMo v HTC NTT DoCoMo*: here NTT asserted its SEPs (UMTS standard) against HTC Germany. NTT had offered HTC a 3-year regional licence with a specified royalty, but this was rejected by HTC, who made a counter-offer after legal action had begun. The counter-offer was rejected by NTT. The Mannheim Court found that NTT DoCoMo did not abuse its dominant position and granted the injunction.

Düsseldorf District Court, 31 March 2016, 4a O 73/14 - *St. Lawrence Communication v Vodafone*; Düsseldorf Court of Appeal, 9 May 2016, I-15 U35/16, 15 U35/16 – *St Lawrence Communication v Vodafone*: here the dispute concerned an SEP (AMR-WB standard on broadband speech transmission), with the district court granting a preliminary injunction against Vodafone for patent infringement, noting that Vodafone had neither made a counter offer, nor furnished security. This was upheld on appeal at the Düsseldorf Court of appeal.

Higher Regional Court of Düsseldorf, 29 September 2017, I-15 U 41/17 – *Mobiles Kommunikationssystem*: here the court referred to the CJEU's finding in *Huawei* and confirmed that FRAND negotiations should be concluded without success before the SEP owner can successfully object to an abuse of dominant position claim.

Mannheim District Court, October 2018, 7 O 165/16 - *IP Bridge v HTC* - the court decided not to award an injunction to IP Bridge, holding that whomever acquires an SEP also assumes the FRAND obligations and must follow the CJEU rules for SEP disputes.

From the above, this report observes that the German cases are broadly in line with the reasoning of the CJEU in *Huawei v ZTE*, showing a clear willingness to grant injunctive relief to SEP-owners even in the FRAND context, if it is considered a fair outcome in the circumstances (licensing negotiation). The cases of *St Lawrence* and *Pioneer* show a preference for global licences as FRAND. In making this assessment, infringement courts will review the claimant's FRAND licence offer, including evidence such as licence contracts. Depending on the evidence provided, the court will consider whether a defendant can rely on a FRAND-defence.

The Netherlands

The Hague District Court, 7 March 2010, Doc. no. 316533/HA ZA 082522 and 316535/HA ZA 08-2524 (joint cases) - *Philips v SK Kasetten*: here the Hague district court held that SK Kasetten had infringed several of Philips' SEPs (CD/DVD technology) and that Philips could enforce its SEPs even in the context of the FRAND commitments made by Philips.

The Hague District Court, 10 March 2011, Case n° 389067 / KG ZA 11-269 - *Sony Supply Chain Solutions (Europe) B.V. and LG Electronics, Inc.*: SEPs (Blu-ray) held by LG were allegedly infringed by Sony. FRAND negotiations had broken down. Having reviewed the circumstances, the Hague District Court lifted the interim injunction granted by the Breda District Court.

The Hague District Court, 14 March 2012 and 20 June 2012, Cases No. 400367/HA ZA 11-2212 - *Samsung Electronics v Apple Inc. et al*: Samsung claimed that Apple had infringed upon its SEPs (3G). The court refused an interlocutory injunction due to the circumstances of the FRAND negotiations, holding that it could not be said that Apple was not negotiating in good faith.

The Hague District Court, 24 October 2014, C/09/470109 / KG ZA 14870 - *ZTE v Vringo*: in this case ZTE and Vringo were engaged in several back-and-forth disputes over SEPs owned by Vringo (UMTS). Vringo made a final licensing offer to ZTE but ZTE did not respond, and instead launched preliminary action at The Hague district court, claiming that Vringo was attempting to force it to accept the licence terms. This argument was rejected by the court.

The Hague District Court, 10 February 2017, 2017:1025 – *Archos S.A. v Koninklijke N.V.*: the judge here did not accept the claim by smartphone manufacturer Archos arguing that Philips had abused its dominant position during FRAND negotiations. It was held in particular that Philips had not failed to engage in effective negotiations and that it was instead Archos that prevented a final agreement from being stricken. The court also took into account that (i) Archos had informed Philips that the latter would need to sue the former if it expected higher royalties, thus showing unwillingness to start serious negotiations; and (ii) the fact that Archos made low profits did not necessarily entail that the Philip's offer was not FRAND-compliant.

From the above it is clear that in The Netherlands the courts weigh up the circumstances of the FRAND negotiations over SEPs when determining whether to grant relief to an SEP holder. This is in accordance with the CJEU's guidance in *Huawei v ZTE*.

France

Paris District Court, 8 December 2011, no. RG 11/58301, *Samsung Electronics Co Ltd, et al. v Apple France Sarl*: here, Apple argued that Samsung's claim for an injunction would constitute an abuse of a dominant position. The court dismissed Samsung's claim on other grounds and did not address the issue of dominance as it was unnecessary.

Paris District Court, 29 November 2013, no 12/14922, *Telefonaktiebolaget LM Ericsson v TCT Mobile Europe SAS and TCT Mobile International Ltd*: here the case concerned Ericsson's SEPs (3G standards - UMTS). Ericsson sought a preliminary injunction against TCT Mobile. The district court held that a preliminary injunction could be granted for SEPs in circumstances when the negotiations for a license were ongoing (here the parties were in agreement regarding the geographical extent and technological scope of the licence, but had failed to agree a royalty rate).

Paris District Court, 17 April 2015, n° 14/14124, *Core Wireless v LG Electronics*: here the case concerned Core Wireless' portfolio of SEPs (2G, 3G, 4G ETSI standards). Core Wireless did not seek an injunction - rather, Core Wireless requested that the court set a FRAND rate for licensing its SEPs to LG. However, the court stated that Core Wireless had not proved that the standards were essential, and thus rejected its claims.

Commercial Court of Marseille, 20 September 2016, RG 2016F01637, *Wiko v Sisvel*: this is the first reported case in France after the CJEU decision in Huawei. It was not about patent infringement, focusing instead on alleged acts of unfair competition as a consequence of letters being sent by a SEP enforcing non-exclusive licensee to customers of a smartphone retailers. It was held that sending such letters, warning retailers against possible patent infringement, may constitute a FRAND offer and does not amount to unfair competition.

As with Germany and the Netherlands, the courts in France appear willing to grant injunctions, though the comparative lack of case law does not give clear guidance. Nonetheless, the decisions do not go against the criteria of the CJEU in *Huawei v ZTE*, and are broadly in line with the principles of that case.

United Kingdom

Nokia v Interdigital Technology, Chancery Division of the High Court of England and Wales, Patents Court, 21 December 2007, [2007] EWHC 3077 (Pat): here the English High Court granted a negative declaration regarding the essentiality of patents to an international standard (except one patent, which was accepted as essential, but only for method claims).

IPCom v Nokia, 18 May 2012, [2012] EWHC 1446 (Ch): here, the English High Court refused to grant IPCom an injunction against Nokia for an SEP for which it had made FRAND commitments. Key here was that Nokia was willing to take a licence on FRAND TERMS.

Vringo Infrastructure Inc. v ZTE (UK) Ltd. [2013] EWHC 1591 (Pat): this case concerned a large portfolio owned by Vringo, many of which were SEPs, for which Vringo had offered ZTE a worldwide licence. Vringo argued at the English High Court that the FRAND issues should take priority in proceedings over validity and infringement, whereas ZTE argued for the opposite. Birss J stated that the court should be prepared to set a FRAND rate, but only where both parties were willing to be bound by the court's determination, and that was not the case here. Birss J concluded that the court should not compel a defendant to be bound by a FRAND decision as this would cause the party to lose the right to challenge on validity and infringement. Thus, a FRAND trial should not be scheduled before invalidity/infringement issues have been dealt with.

IPCom GmbH & Co Kg v HTC Europe Co Ltd & Ors [2015] EWHC 1034 (Pat): here Floyd J at the High Court held the SEP (UMTS) valid as amended and infringed by certain Nokia products that are compliant to the UMTS standard. On appeal, the Court of Appeal upheld this decision. Yet, the EPO subsequently revoked the patent in opposition proceedings, leading to an appeal at the EPO Technical Board of Appeal. UK proceedings were suspended pending this appeal. Later, the High Court stated that it would not be appropriate to grant an injunction because IPCom was willing to grant a FRAND licence to Nokia (in line with its ETSI and European Commission commitments). Moreover, Nokia was willing to accept a licence on FRAND terms. Before the court could set FRAND terms, the parties came to a settlement.

Unwired Planet v Huawei [2017] EWHC 711 (subsequently followed by *Unwired Planet v Huawei* [2017] EWHC 1304): in a series of judgments Birss J in the English High Court held that taking into account the CJEU's guidance in *Huawei v ZTE*, it was possible to grant an injunction to the patent holder in an infringement case if FRAND terms were not accepted by the defendant. Unwired Planet had offered Huawei a world-wide licence on terms that Unwired Planet considered to be FRAND. Huawei rejected the world-wide licence, arguing that a lower-cost, UK-only licence would be FRAND. Birss J assessed whether the licensing offers were truly FRAND and considered a worldwide FRAND rate. Ultimately Birss J agreed with United Planet that the FRAND licence should be world-wide, not UK-specific, and evaluated a range of methods for determining the royalty rates of comparable world-wide licences to set what he considered to be FRAND rates in the circumstances of the case ([2017] EWHC 1304). He stated that 'a FRAND royalty rate can be determined by making appropriate adjustments to a "benchmark rate" primarily based upon the SEP holder's portfolio'. Then, in the judgment that followed ([2017] EWHC 1304)), after Huawei had refused the offer of the licence set at these terms, Unwired Planet sought a final injunction. Confirming that United Planet's offer of a world-wide licence was FRAND, Birss J stated:

"Since Unwired Planet have established that Huawei have infringed valid patents EP (UK) 2 229 744 and EP (UK) 1 230 818, and since Huawei have not been prepared to take a licence on the terms I have found to be FRAND, and since Unwired Planet are not in breach of competition law, a final injunction to restrain infringement of these two patents by Huawei should be granted."

Birss J. also explained that such a 'FRAND injunction' will be lifted once the defendant has agreed a FRAND licence. The operation of the FRAND injunction was suspended pending an ongoing appeal.

Therefore, it is clear that an important step forward for UK case law, and European law more generally, was provided by the HC decision in *Unwired Planet v Huawei* [2017] EWHC 711. The ruling clarifies the norm of global licensing in the context of FRAND, gave royalty setting guidance and showed a willingness to set a royalty rate, and confirmed the circumstances when granting an injunction is appropriate. This is a positive development, as standardisation of IoT (for example, 5G) is a global issue and this case represents the most comprehensive approach by a national court to intervene, positively, in ongoing negotiations that are at an impasse (Neven & Régibeau, 2017). Birss J's ruling was recently upheld at the Court of Appeal of England & Wales, where it was emphasised that the High Court ruling complied with the principles laid down by CJEU in *Huawei v ZTE* (*Unwired Planet v Huawei* [2018] EWCA Civ 2344).

Overall, the diversity of the circumstances in the above cases in Germany, The Netherlands, France and the UK gives weight to the Commission's claim that the legal complexity involved in SEP/FRAND cases means that these types of disputes are 'hard cases' unsuited to a strict, inflexible approach. Instead, these disputes must be resolved on a case-by-case basis at the national level.

2.2. Assessing the key issues and guiding principles highlighted by the EC communication of 29 November 2017

Here, this report analyses the key issues and assess the proposals highlighted by the Communication. The three key issues we identify are (i) transparency, (ii) valuation and (iii) enforcement.

2.2.1. Transparency

The first issue is the lack of transparency in the context of SEP licensing frameworks managed by SSOs. Accessing correct information on the scale of exposure to SEPs is extremely important to the users of standards, especially SMEs that have little experience of licensing practices and enter the relevant markets looking for connectivity – yet this information is not always easy to access. The Communication notes that '... currently the only information on SEPs accessible to users can be found in declaration databases maintained by SSOs which may lack transparency' – a scenario that leaves companies, particularly SMEs and start-ups, in a difficult situation with respect to licensing negotiations and risk management. Moreover, simply relying on declarations made on the basis of self-assessment carried out by SEP holders is not sufficient; indeed, such declarations may be flawed as they are not scrutinised by independent entities.

The recommendations proposed by the Communication to address the above issue are promising: the Commission (i) calls for greater cooperation between SSOs and patent offices; (ii) calls on SSOs to ensure that their databases comply with the main quality features described above; (iii) calls on SSOs to transform the current declaration system into a tool providing more up-to-date and precise information on SEPs; (iv) considers that declared SEPs should be subject to reliable scrutiny of their essentiality for a standard; and (v) will launch a pilot project for SEPs in selected technologies with a view to facilitating the introduction of an appropriate scrutiny mechanism. The Commission further provides its commitment to co-operate with SSOs to facilitate this.

Improving the quality and accessibility of SSOs databases for patent owners, users and third parties, for example by incorporating user-friendly interfaces, appears both laudable and achievable. Furthermore, providing links to patent office databases, including at the European Patent Office (EPO) and the national patent offices in all EU Member States, is crucial to highlight the visibility and exposure of SEPs

in various IoT sectors. Such patent databases are, in any event, publicly accessible, and can give precious information on: (i) the current owner of a patent (for example, as a consequence of a transfer of rights); (ii) the status of the patent, including claims that have been amended/reduced as a consequence of an opposition before the office (thus potentially clarifying the overall breadth of the SEP, and thus the implementer's potential exposure). In this regard, formal, written agreements between SSOs and patent offices in Europe, facilitated by the institutions of the EU such as the Commission and European Parliament, should be secured to guarantee that the links to such important information are smoothly and efficiently managed.

The Communication also suggests that patent owners and implementers should be encouraged to provide information on cases related to their SEPs (eg, docket number) and the outcome (eg infringement, damages, patent invalidity, reduction of claims, etc.). The fact that SEPs on key technologies are litigated more frequently than other patents means that information asymmetry between patent holders and implementers/users/competitors is a serious problem. The Communication proposes that SSOs should provide incentives for patent holders and technology users to report case references and final outcomes of litigation on declared SEPs (especially where rulings concern essentiality and patent validity). This is a reasonable approach. Furthermore, the Communication notes that this would not be a heavy burden on SEP-owners and technology users, as they already possess all information and documents related to these disputes (as party to the proceedings).

Finally, the need for a higher degree of scrutiny on essentiality claims, stressed by the Communication, is crucially important. SEP-owners' self-declarations that their technology is 'standard' is sub-optimal as an efficient mechanism. While the declaration process is important, to reassure the SSO and third parties that the SEP technology will be accessible and licensed under FRAND terms/conditions, the fact that the declarations are based on self-assessment by the patent owner, and are not scrutinised regarding essentiality, leaves open the possibility of mistake, and even deliberate over-broad claiming of a standard. As noted by the Communication, several studies on important technologies have revealed that, when strictly assessed, only between 10% and 50% of declared patent are really essential.⁵

This uncertainty leaves new entrants to the IoT market in a weak and uncertain position. In licensing negotiations, the de facto presumption of essentiality gives the patent-holder an advantage and places a significant burden on the licensee to check essentiality. The Commission therefore seeks a more reliable system involving more scrutiny of essentiality declarations. The Commission's proposal to subject the essentiality claims to a review by an independent entity with technical capabilities is sensible. The cost of such assessment should be equally split between the SEP-owner and the implementer, with a percentage of the overall cost being also borne by the relevant SSO.

⁵ See fn 21 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712. <https://ec.europa.eu/docsroom/documents/26583>

2.2.2. Valuation

Following the CJEU *Huawei v ZTE* case, the key issues concerning SEP licensing can be summarised as follows: (i) how should the royalty base be determined? Should it be determined by the smallest saleable practising unit or on an end-product basis? How could this effect SEP value?; (ii) how should the royalty rate be determined? Should it be a percentage of the end product or a flat rate (recalling that the English High Court decision of *Unwired Planet v Huawei* states that ‘a FRAND royalty rate can be determined by making appropriate adjustments to a “benchmark rate” primarily based upon the SEP holder’s portfolio’); and (iii) how to determine the level of licensing in the value chain? Should it be considered at end-company or at chipmaker level? How will this affect SEP value?

In the Communication the Commission puts forward a balanced approach that provides guiding principles, rather than giving clear and specific prescriptive answers to each and every one of these questions. Thus, the Communication identifies relevant principles that should be used by SEP owners and implementers when it comes to negotiating FRAND licences, including the following: (i) assessing the economic value of the patented technology; (ii) maintaining good faith in negotiating procedures; (iii) the refusal of a ‘one-size-fits all’ proposal in favour of a case-by-case approach; and (iv) the need to avoid royalty-stacking (Lemley, 2007; Armstrong, Mueller & Syrett, 2014; Jones, 2014).⁶

The first important valuation principle provided in the Communication is that the royalty to be paid by the implementer needs to bear a clear relationship to the economic value of the patented technology (that value focusing on the technology itself and not any aspect related to the decision to include the technology in the standard). From this statement we understand that the Commission considers that SEP royalties ought to be set on the basis of the value that the technology adds to the end product (rather than the on the ‘smallest saleable practising unit’ basis). The Commission does not outline specific royalty rates - to avoid a ‘one size fits all’ model - and instead leaves it to the parties to come to agreement in light of the above principle (and failing that, leaves it to be determined by national courts on a case-by-case basis). In addition, the Commission appears to approve of the approach of the English HC in *Unwired Planet*, stating that non-discrimination principle must be followed for ‘similarly situated’ implementers and licences can be global in scope.

The Communication’s valuation principle is essentially based on an ex-ante approach. In other words, a reasonable royalty is the royalty that SEPs owners can obtain before the adoption of the standard, when they face competition, and not after the relevant choice is made, ie when there is a monopoly which allows the extraction of high royalties (Shapiro & Varian, 1999; Ohana, Hansen & Shah, 2003; Layne-Farrar, Llobet & Padilla, 2008). As has been remarked by MacCarthy (2009):

“...the specificity and transparency of price information ex ante is pro-competitive. It allows the potential licensees in the SSO to understand the price they would pay for incorporating the technology into the standard and so allows competition on price as well as on technical merit in the standard setting deliberations. Moreover, it assures that the price is competitive as opposed to the supracompetitive price that potential licensees might face in the absence of clear price information ex ante.”

⁶ Royalty stacking scenarios occur where licensees need to pay royalties to multiple parties to be able to sell a product. This is the case of complex products that include many patent-protected standards, eg ICT products such as smart-phones incorporating a camera, a video, a web browser, wireless, text messages, etc. Thus, if even a few patent owners require standards implementers to pay royalties, such implementers, even the most efficient ones, may wish not to manufacture the product in question as it would be economically inconvenient to pay such high aggregate royalty amount.

The level of royalty should be 'crystallized' *ex ante* and no increase could be made after a standard has been chosen. This is also in line with the Guidelines on the applicability of Article 101 TFEU to horizontal co-operation agreements,⁷ which provides criteria for determining whether a fee charged for access to an intellectual property right is unfair or unreasonable (para 289). Para 289 of the Guidelines recommends to compare the licensing fees charged by the IPR holder in a competitive scenario before the industry has been locked into the standard (*ex ante*) with those charged after the adoption of the standard (*ex post*).

The second major principle identified on valuation relates to good faith negotiations over FRAND. At present, licensing is hampered by a lack of harmony in the interpretation of FRAND - and the subsequent litigation over FRAND licence terms risks delaying the uptake of new technologies, standardisation processes and the roll-out of IoT in Europe. Moreover, the CJEU's view is that an 'undertaking to grant licences on FRAND terms creates legitimate expectations on the part of third parties that the proprietor of the SEP will in fact grant licences on such terms' (Case C-170/13 *Huawei Technologies*, EU:C:2015:477, paragraph 53). On this, the Communication states:

"Parties to a SEP licensing agreement, negotiating in good faith, are in the best position to determine the FRAND terms most appropriate to their specific situation. Efficiency considerations, reasonable licence fee expectations on both sides, the facilitation of the uptake by implementers to promote wide diffusion of the standard should be taken into account. It should be stressed in this respect that there is no one-size-fits-all solution to what FRAND is: what can be considered fair and reasonable differs from sector to sector and over time. For this reason, the Commission encourages stakeholders to pursue sectoral discussions with a view to establishing common licensing practices, based on the principles reflected in this Communication."⁸

Thus by emphasising the importance of good faith, the Communication gives appropriate weight to a legal principle that is crucial in the determination of such cases at the national level (as shown in 2.1 above). This emphasis on good faith relates to the third major principle we identify on valuation: the avoidance of a 'one size' model in favour of a case-by-case approach. Ultimately, in the Commission's view, licensing negotiations should be primarily left up to the parties in each case – 'there is no one-size-fits all solution to what FRAND is: what can be considered fair and reasonable differs from sector to sector and over time'. National courts therefore retain a crucial role, as noted in our evaluation of enforcement in 2.2.3 below.

This report further notes that an alternative proposal would be to give SSOs the task to manage auctions between different technologies: patent owners that want their technology to be included as or in the standard could submit offers to SSOs to license their patent specifying a royalty. The implementer would then proceed to choose the most convenient offer (Swanson & Baumol, 2005; Farrell, Hayes, Shapiro & Sullivan, 2007). Such a system may offer a benchmark for what a FRAND royalty is, and would reflect the level of competition between patent owners and implementers that exists before the adoption of the standard. If the proposals on increasing transparency made in the Communication – linking more closely the SSOs with the EPO and national patent offices – are successful, SSOs may be better prepared to take on this task than they are today.

In addition, there is a need to eliminate any discrimination amongst implementers, eg by relying on most-favoured licensee clauses (MFL) in licensing agreements, taking into account competition-related

⁷ Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (Official Journal C 11 of 14.1.2011).

⁸ Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712.
<https://ec.europa.eu/docsroom/documents/26583>

concerns. This clause would require SEP-owners to promptly notify a licensee of any licence, granted by them to a third party for the same patent under analogous circumstances, which gives rise to terms and conditions that are clearly more favourable than those granted to that licensee. This allows the latter to require SEP-owners the replacement of the terms and conditions of its licence with those of the third party (Brooks & Geradin, 2011; Van Bael & Bells, 2005). Such a clause aims thus at promising that no other licensee will obtain better terms and conditions (Lichtman, 2006).⁹ The inclusion of such clauses ought to be encouraged whenever appropriate.

2.2.3. Enforcement

The Communication states that a balanced and predictable enforcement regime can have positive effects on the overall negotiating processes between SEP-owners and implementers. Therefore, this is an area where the Commission believes a balance must be found between opposing interests. Indeed, while SEP-owners should be allowed to obtain legal relief, especially injunctions, against infringers who do not want to conclude a FRAND licence (so-called 'patent hold-out'), the law should also protect the implementers of standardised technology that in good faith try to obtain such licence and are instead unjustifiably threatened with injunctions by SEP-owners (so-called 'patent hold-up').

The behavioural criteria detailed by the CJEU in the seminal case of *Huawei v ZTE* are aimed in the right direction (for detailed analysis of this ruling, and its impact, see the prior sub-section 2.1). The ruling sets a procedural framework conducive to negotiations for balancing the interests of SEP-owners asking for an injunctive relief and alleged infringers. What is particularly laudable of *Huawei v ZTE* is that the CJEU highlighted the need for good faith in negotiations: injunctions should not be issued automatically without further consideration of the parties' behaviour in the light of their relevant bargaining power (Pentheroudakis & Baron, 2017). The CJEU guidelines, read in conjunction with the Communication's principles, provide 'enough freedom to maneuver and steer future cases towards a far more objective approach' (Gupta, Devaiah, Jain & Shrivastava, 2018).

In terms of enforcement, alternatives to litigation are preferable. This report notes that alternative dispute resolution mechanisms (including mediation and arbitration) could be promoted as swift and cost-effective ways to resolve disputes between SEPs holders and implementers, especially SMEs. Mediation and arbitration offer considerable cost benefits when compared with litigation, including (i) quicker and less expensive proceedings, (ii) a more informal and flexible dispute environment, (iii) confidentiality, (iv) more control on the proceedings, (v) enhanced and improved communication between the parties (Helmets and McDonagh, 2013).

Arbitration proceedings may be particularly important to determine SEP related cases. Indeed, as a general remark, it is notable that arbitration is growing in importance worldwide as a means of resolving IP licensing disputes (Betancourt, 2016). Alternative dispute resolutions may also be embraced by the Unified Patent Court, if and when it becomes operational, as also noted by the Communication.¹⁰ Indeed, the UPC will feature highly specialised judges and likely offer a dedicated arbitration and mediation centre. It would therefore be recommendable to provide UPC arbitrators and mediators with (even more enhanced) training in the specific field of standard essential patents (McDonagh, 2016).

⁹ For an example of MFN clause see the DVD Patent Licence Agreement, which provides that "in the event that Licensor grants a DVD patent licence to another party with royalty rates more favorable" than those contained in the agreement, "Licensor shall send written notice to Licensee" and "Licensee" shall be entitled to an amendment to this Agreement to the extent of providing for royalty rates as favorable as those available to such other party".

¹⁰ See p. 12 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712. <https://ec.europa.eu/docsroom/documents/26583>

2.3 Critical perspectives on the EC communication of 29 November 2017

As described above in s.2.2-2.3, with the Communication the European Commission seeks to provide a balanced and non-binding policy document, which includes guidance for resolving questions the CJEU left open in *Huawei v ZTE*. For example, in the aftermath of the *Huawei v ZTE* case, it became clear that the CJEU had not actually specified how exactly the royalty rate should be calculated in order for it to be classed as FRAND. Jakob Dewispelaere states:

"Consequently, despite CJEU guidance, patent holders and implementers still find themselves frequently embroiled in lawsuits, especially in SEP-heavy industries such as telecommunications, precisely because clear guidelines are lacking." (Dewispeleare, 2017)

Given these gaps, the Commission's statement in the Communication has been described by several commentators as a 'middle way' or a 'balanced' approach aimed at providing appropriate guidance in the aftermath of *Huawei*. Such a policy document is necessary, and undoubtedly laudable; though it is notable that the text of the Communication does leave the Commission open to the criticism that the statement avoids answering the most difficult questions left unresolved by *Huawei v ZTE*. As a result, some commentators argue the Commission's guidelines are not sufficiently clear. On this, Dewispeleare remarks that the Communication does not, in fact, provide clear answers to the fundamental questions that lead to SEP disputes, and drawn-out litigation, between patent holders and implementers:

"What exactly is a fair royalty? Who gets a license and who doesn't? The Commission's decision not to take sides does not mean that the problems will go away. Clarity on whether the royalty set by the SEP holder is un-FRAND or whether the SEP holder can be obliged to license its patent to all implementers rather than to end-users only will still need to come from courts and/or competition authorities." (Dewispeleare, 2017)

Similarly, Koch states:

"However, the paper contained a disappointing lack of detail on some of the concepts of SEP licensing that often fall subject to dispute between SEP owners and prospective licensees." (Koch, 2017)

On one hand this is a valid criticism – the case-by-case nature of the approach endorsed by the Commission means that certain questions, such as the amount of a fair royalty, will inevitably still require litigation at the national level. On the other hand, if the Commission had given a strict, prescriptive view, the Communication would inevitably be criticised for tying the hands of the national courts and potentially doing injustice to patent holders.

Indeed, the 'middle-way' approach taken by the Commission has the advantage of giving a limited set of guiding principles, while still allowing national courts to come to a fair determination in light of all the facts. Thus, the Communication's approach provides 'enough freedom to maneuver and steer future cases towards a far more objective approach' (Gupta, Devaiah, Jain & Shrivastava, 2018).

Moreover, although the Communication lacks clear guidance in some respects, it does provide useful, clarifying language in other areas. For instance, the Communication refers to 'royalty stacking' as an IP valuation principle that should be taken into account. Furthermore, the Commission states:

"PAEs should be subject to the same rules as any other SEP holder, including after the transfer of SEPs from patent holders to PAEs."

Given the controversial nature of Patent Assertion Entities (PAEs), and the wealth of literature criticising their 'hold up' actions and nuisance litigation behaviour in the ICT sector, this is a welcome statement

(Helmets, Love & McDonagh, 2014). Indeed, the importance of this point is underlined by a recently published empirical analysis that demonstrates that PAE litigation frequently involves SEPs (Contreras, Gaessler, Helmets & Love, 2018). The Commission clearly believes that FRAND commitments should be passed along with the ownership of the SEP in the event of the assignment/sale of the patent to a new owner, even if that owner is a PAE. In other words, regardless of the new owner's willingness to license on FRAND terms, the Commission's view is that the new owner (PAE) should be bound by prior FRAND commitments.

Further criticism has come from the perspective of competition lawyers (Coates, Janutta & Kahmann, 2018). Although the Communication focuses on SEP enforcement and FRAND licensing, it does not deal with the distinction between 'use-based licensing' and 'licensing to all'. 'Use-based licensing' means that the fee or value of an SEP licence would vary depending on the end-use for which it is utilised, i.e. depending on whether it is used in a high-cost, high-value product such as an e-car, or whether it is used in a lower-cost, lower-value item such as an IoT consumer item, such as a web-connected coffee machine or home heating device. By contrast, 'licensing to all' refers to a situation where any party would be entitled to an SEP licence, regardless of the value of the product the SEP technology will be used for. Both approaches have their advantages and disadvantages, with the first generally viewed as more favourable to the SEP-owner, and the second more advantageous to the implementer/licensee.

Indeed, two prior EC documents appear to show a preference for 'licensing to all':

- (i) the EC Guidelines on Horizontal Agreements state that a standards organisations' intellectual property policy ought to envisage a clear commitment to offer essential IP rights, including patents, on FRAND terms (para 285); and
- (ii) the EC Decision against Motorola on infringement (referred to in 2.1 above) suggests that SEP holders who have made a FRAND commitment make SEPs available on FRAND terms/conditions to all implementers (para 294).

Therefore, although the EC has not stated definitively in prior documents that failing to licence to all third parties on equivalent FRAND terms would be unlawful, the EC has nonetheless expressed a clear pro-competition preference. For this reason, it could be viewed as somewhat surprising that in the Communication the EC advocates for a balanced approach between the rights of competitors and SEP-owners, noting that FRAND can 'vary from sector to sector, and over time'. Nonetheless, this study agrees with the EC's balanced approach, even if it means a mild revision of the EC's prior pro-competition approach. As seen in the UK case of *Unwired Planet*, national courts are often in the best position to consider what is FRAND in light of all the facts and circumstances (Neven & Régibeau, 2017).

Although the Commission's has been described as a balanced approach, it is worth weighing up more radical options. For example, some commentators suggest that SEPs should be licensed on a royalty-free basis so to avoid disputes entirely (MacCarthy, 2009). In this view, SSOs could adopt the following approach: they could mandate royalty-free licensing as a requirement for participation to the work of the organization. This approach would aim to keep the access to the standardised technology as open as possible and thus reduce the costs of the products that incorporate that technology. In such a way, patent hold-up problems would be ruled out and the risks of patent related litigation minimized. However, royalty-free licensing approaches attract criticism from patent holders, as they effectively amount to compulsory licences.

Indeed, a royalty-free licensing system would prevent investors from recouping the investments made to come up with the standardised technology - with the result that these investments would be discouraged. How could SEP-owners, the argument goes, be convinced to join a SSO if the latter requires them to give up any royalty in relation to the technology they have developed or are about to develop? Yet, it could be counter-argued that patent holders are not obliged to join SSOs. In this sense,

royalty-free licences would not be mandated - they would be voluntarily accepted as a condition of membership by private patent holders and users of technology that sought to become members of an SSO (MacCarthy, 2009). Ultimately, this radical approach would favour SEP-owners agreeing to forego some of their exclusive rights in exchange for the chance to have the technology included in a standard (MacCarthy, 2009). At present it is not part of the Commission's proposal, but it can be evaluated in future EC proposals, perhaps in co-operation with SSOs, the EPO and national patent offices.

3. CONCLUSIONS AND POLICY RECOMMENDATIONS

Building on the findings presented in the previous chapters, this section presents the **conclusions** of the study on SEPs and a series of relevant **policy recommendations**.

3.1 Conclusions

The European Commission (EC) Communication of 29 November 2017 (“the Communication”) examines three important aspects of SEPs:¹¹

- (i) the need to have a more transparent environment for negotiations between SEP-owners and licensees;
- (ii) the necessity of having common principles governing SEPs technologies;
- (iii) proposals for a more balanced enforcement system.

This report finds that the conclusions reached by the Commission in the Communication are to a great extent reasonable and appropriate:

- the CJEU approach and guidelines in *Huawei v ZTE*, as applied in the subsequent national cases such as *Unwired Planet* (UK), satisfy in an effective manner the interests of all stakeholders, ie SEPs owners, standard implementers, especially SMEs, and consumers;
- the principles identified in the Communication with a view to guiding the valuation of SEPs and FRAND terms and managing enforcement are sound and viable, including the promotion of alternative dispute resolutions may offer cheaper and quicker ways to manage SEPs disputes, especially before the Unified Patent Court (once it is fully operational).

Further schemes could be explored with a view to striking a balance between the interests of all stakeholders, including

- (i) encouraging SEPs holders to disclose - before the adoption of the standard - the most restrictive licensing terms, such as the maximum royalty rate;
- (ii) requiring undisclosed SEPs to be licensed on a royalty-free basis;
- (iii) organising and managing auctions with a view to choosing the most convenient technology;
- (iv) inserting most-favoured licensee clauses in licensing agreements;
- (v) adopting collective licensing and/or patent pools schemes;
- (vi) using open source platforms.

Commenting on current problems and the need for a more stable and efficient regulatory environment, the Communication states:

“Conflicting interests of stakeholders in certain SSOs may make it difficult for these organisations to provide effective guidance on such complex legal and intellectual property (IP) policy issues. Licensing platform initiatives in this area are still at an early stage and have not yet been adopted by implementers, who may well be hesitant given the uncertainty in the current SEP regulatory environment and who have little incentive to enter into a deal in this context.”¹²

This study concludes by emphasising that an improved environment cannot be achieved without communication, coordination and cooperation between the key stakeholders – the SSOs, the EPO,

¹¹ Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712.

¹² Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712.
<https://ec.europa.eu/docsroom/documents/26583>

national patent offices, the EC, the European Parliament, and of course, SEP-owners and potential licensees.

3.2. Policy recommendations

On the basis of the above findings and conclusions, the study puts forward some policy recommendations.

In particular, European Union institutions could explore the following in order to enhance the general environment of FRAND licensing in the context of SEPs:

- enhancing the viability of collective licensing schemes, which would entail that participants to a SSO should be allowed to collectively negotiate royalty rates on behalf of standard implementers, so as to counterbalance the strong bargaining power held by SEP-owners. In some circumstances, this would require an emphasis on the fact that, as is long established in EU and national laws, an SEP-owner's property rights are not absolute. Moreover, this proposal should be assessed taking into account competition-related concerns, balanced with the rights of the SEP-owner. Indeed, collective licensing practices may be considered a violation of Article 101 TFEU, which prohibits restrictive agreements to the detriment of final consumers. Yet, it could also be argued that a collective licensing approach may actually benefit consumers and therefore could be exempted under Paragraph 3 of Article 101 TFEU. Indeed, collective negotiations would likely trigger competitive royalties, which could then be passed on end-consumers.
- exploring the viability of licensing pools and other licensing platforms, including platforms that make use of advanced machine-learning (artificial intelligence), which may be particularly suitable for IoT industries, especially SMEs. Patent pools may be capable of ameliorating several SEP licensing problems, for example by offering one-stop-shop solutions and providing clarity on aggregate licensing fees (Aoki & Nagaoka, 2014). Via the one-stop-shop, patent pools have the potential to put patent owners in the position to offer a single joint licence for all the essential patents involved, with transactions costs being strongly reduced. Patent pool solutions could ensure sure that the aggregate royalty burden be such that the adoption of the standardised technology is still profitable to the user, despite the technology being protected by multiple patents. Generally, royalty rates in patent pool scenarios tend to be lower than rates extracted in bilateral contexts - this is because pool members can get other benefits from their being part of the pool, for example in terms of grant-backs. Yet, patent pools also may raise competition concerns as they may be considered as agreements which restrict trade; as such, they could potentially breach Article 101 TFEU. Nonetheless, patent pools have the potential of spurring innovation and benefit consumers by securing lower royalties (which would result in prices' reduction for final customers) – for this reason they could potentially be exempted under Paragraph 3 of the above Article.
- investigating the viability of 'open source' approaches in standardisation processes. As stressed in the Communication by the European Commission, synergies and effective interactions between standardisation and open source communities have the potential of promoting the uptake of advanced technology developments.¹³ However, it is necessary to acknowledge that open-source success stories, such as software, have succeeded via copyright law, rather than patent law; and in the

¹³ See p. 12 of the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee setting out the EU approach to Standard Essential Patents, Brussels, 29.11.2017 COM(2017) 712. <https://ec.europa.eu/docsroom/documents/26583>

absence of a generally accepted system of open patenting, it may be insufficient as a solution. Nonetheless, although the open source and standardisation ecosystems have different traits (for example in terms of the prevalent type of IP protection), they also share common aspects, including collaborative open processes and contribution to innovation, and as such there is potential for open source software to underpin approaches to e.g. declaration of standards and provision of info on SEPs that can aid transparency (as noted in 2.2).

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This in-depth analysis, commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the JURI Committee, assesses the European Commission of (EC) Communication of 29 November 2017 on the EU approach to Standard Essential Patents. The report examines the principles identified in the Communication with respect to the Commission's proposals on (i) increasing transparency on SEPs; (ii) determining valuation of SEPs (*Standard Essential Patents*) and FRAND (*Fair, Reasonable, and Non-Discriminatory*) terms; and (iii) enforcement.

The report evaluates the efficient resolution of licensing disputes over FRAND, including via litigation, arbitration and mediation, licensing pools and collective licensing. The current document also puts forward some policy recommendations to, inter alia, enhance the general environment of FRAND licencing in the context of SEPs.

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