

# (F)RANDONOMICS

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*(F)RAND royalty rates for standard essential patents (SEPs) can and have been determined by Courts around the world. The question whether it is possible to determine (F)RAND rates does not present itself. This article offers an overview of the ‘Top Down’ and the ‘Comparable License Approach’ as they have been frequently recognized by Courts across the globe. The reasoning Courts have employed when making use of the methods are described to the extent possible in a neutral manner, as to offer further insights into the two most commonly methods employed to establish a (F)RAND royalty rate. The Top Down approach conventionally begins with calculating the total aggregate royalty burden for all patents reading on a particular standard and then continues to distribute the aggregate royalty rate among the various SEPs owners. The approach does not rely on information about other licensing transactions and can hence offer insights, which the comparable licenses approach can’t offer. The comparable license approach again can be argued to be probative as to what constitutes a reasonable royalty rate as actual licenses can reflect the economic value of the patented technology in ‘real world scenarios.’ It is a fairly practical method. Both the Top Down Approach and the Comparable Licenses approach can be used as a main method or as a sensitivity check. This overview of (F)RAND royalty rates that have been determined in the context of Court proceedings is by no means exhaustive.*

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## INTRODUCTION

The determination of (F)RAND (fair, reasonable and non-discriminatory) royalty rates has only recently entered the debate on Standard Essential Patents.<sup>1</sup> This transition may be understood in light of the fact that the discipline of intellectual property valuation is fairly recent<sup>2</sup> and the licensing of standard essential patents has for a long time been undertaken without the report of a (F)RAND royalty rate determination. When it comes to determining (F)RAND royalty rates, both a lack of transparency and lack of awareness, about the methods allowing to determine the rate, prevail.<sup>3</sup>

An economic characterization of (F)RAND has only lately emerged and is reflected in the way courts around the world have determined such rates in key cases. In Europe, for example,

1. In a U.S context it is common to talk about RAND. In a European context the corresponding terminology is FRAND. These terms are used interchangeably here. *See generally* Microsoft Corp. v. Motorola, Inc., 795 F.3d 1024, 1024 (9th Cir. 2015).

2. *See generally* GORDON V. SMITH & RUSSELL L. PARR, VALUATION OF INTELLECTUAL PROPERTY AND INTANGIBLE ASSETS 4, (4th ed. 2016.); *see generally* John E. Dubiansky, *An Analysis for the Valuation of Venture Capital-Funded Startup Firm Patents*, 12 B.U. J. SCI. & TECH. L. 170, 171 (2006); Weston Anson et al., *IP Valuation: What Methods are Used to Value Intellectual Property and Intangible Assets*, GALE BUS. INSIGHTS: GLOBAL, <https://bi.gale.com/global/article/GALE%7CA360863953?u=coloboulder&sid=summon> (last visited Oct. 11, 2021); *see generally* Robert F. Reilly, *Valuation of Debtor Corporation Intellectual Property During a Distressed Economy* 28–25 AM. BANKR. INST. J. 23, 29 (2009).

3. *See* Jorge L. Contreras, *Why We Need A Global FRAND Rate-setting Tribunal*, RSCH. INST. OF ECON., TRADE, AND INDUS. (June 6, 2019), [https://www.rieti.go.jp/en/special/p\\_a\\_w/128.html](https://www.rieti.go.jp/en/special/p_a_w/128.html).

the systematic need to justify a (F)RAND royalty rate stems from case law no more than six years old.<sup>4</sup> The Court of Justice of the European Union (CJEU) landmark case *Huawei v. ZTE* clearly stipulates that a (F)RAND licensing request needs to be underpinned by an adequately determined (F)RAND rate.<sup>5</sup>

Against this background, this article's goal is to offer an overview of the different approaches courts have accepted to determine the value of a (F)RAND royalty rate. In doing so, this article will shed light on the existing state of (F)RAND royalty rate calculations. It also will establish the need to adopt an economic perspective on (F)RAND. Furthermore, it illustrates the need to motivate further scholarship that specifically addresses the valuation of standard essential patents and patents more generally.

This article does not attempt to assess what constitutes an adequate (F)RAND royalty rate, as this would need to be analyzed on a case-by-case basis. This research only sketches overarching principles that have been used to determine a (F)RAND royalty rate for a firm's standard essential patents.

The article is structured as follows. First, the article discusses peculiar features of standard essential patents. The article then offers insights into key aspects of the (F)RAND debate and the main issues the (F)RAND commitment seeks to resolve. In doing so, it encapsulates the key features of the (F)RAND commitment as set out by the IPR (intellectual property rights) policies of several standard setting organizations. A discussion of these insights is needed to help come to grips with the peculiar features of a (F)RAND royalty rate calculation that set it apart from an 'ordinary' IP valuation. It then presents the so called 'Top-Down' and the 'Comparable Licenses' approach as these are the two key methods that have systematically been recognized by courts as valid methods to determine the value of a (F)RAND royalty rate. The article concludes by showing that the information provided by these two methods is complementary. The 'Top Down' approach can provide information on the value of the standard as a whole, whereas the 'Comparable Licenses' approach can offer insights

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4. Case C-170/13, *Huawei Tech. Co. Ltd. v. ZTE Corp.*, ECLI:EU:C:2015:477, ¶ 71 (July 16, 2015).

5. *See id.*

on historical rates licensees paid.<sup>6</sup> The Top Down approach offers insights on the aggregate royalty burden a licensee to a standard may be facing.<sup>7</sup> The approach does not rely on information about other licensing transactions and can hence offer a perspective which the Comparable Licenses approach cannot offer.<sup>8</sup> The Comparable License approach again can provide information on a (F)RAND royalty rate with reference to ‘real world licensing scenarios.’<sup>9</sup>

## I. STANDARD ESSENTIAL PATENTS

The economic gains enabled through standards such as WiFi or 4G have no historical precedent.<sup>10</sup> At the same time as standards allowed humanity to take a leap forward in time, they have also come under scrutiny. In particular, patents that read on standards have been subject to intense debate.<sup>11</sup> This can probably be understood in light of the inherent antagonism that prevails between standards and patents.<sup>12</sup> Patents that read on

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6. See *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 2017 WL 6611635 at 1, 3, 8 (C.D. Cal. Dec. 21, 2017). I understand that *TCL Communication Technology Holdings* was vacated. *TCL Comm’n Tech. Holdings Ltd. v. Telefonaktiebolaget LM Ericsson*, *vacated in part and reversed in part*, 943 F.3d 1360, 1375 (Fed. Cir. 2019), *cert. denied*, 141 S. Ct. 239, 208 L. Ed. 2d 17 (2020). However, it was not vacated on the grounds of its (F)RAND royalty rate determination. Hence, I consider this case nonetheless to offer insights as to how to approach a (F)RAND royalty rate. (Top Down Approach); see *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217 1, 18, 20 (W.D. Wash. Apr. 25, 2013) (Comparable Licenses Approach).

7. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 2017 WL 6611635 at 3 (C.D. Cal. Dec. 21, 2017).

8. *Id.*

9. David Kennedy & Larry Tedesco, FRAND Royalty Rates in SEP Licensing: Comparable Licence Agreements, IAM (Nov. 20, 2020), <https://www.iam-media.com/frand/frand-royalty-rates-in-sep-licensing-comparable-licence-agreements>.

10. See generally DELOITTE, WHAT IS THE IMPACT OF MOBILE TELEPHONY ON ECONOMIC GROWTH 9 (2012). The findings, interpretations and conclusions expressed in this text serve as an overview only. The author reserves the right to modify, adapt or change her opinion in due course.

11. A Google Scholar search of the term “standard essential patents” leads to 1,040,000 results in 0.09 seconds. GOOGLE SCHOLAR, [https://scholar.google.com/scholar?hl=en&as\\_sdt=0%2C5&q=standard+essential+patents&btnG=](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=standard+essential+patents&btnG=) (last visited Oct. 11, 2021).

12. A patent is a right to exclude. See *Frequently Asked Questions: Patents*, WORLD INTEL. PROP. ORG., [https://www.wipo.int/patents/en/faq\\_patents.html](https://www.wipo.int/patents/en/faq_patents.html) (last visited Sept. 12, 2021) [hereinafter WORLD INTELLECTUAL PROPERTY]. ISO, the International Organization for Standardization, describes “their greatest hits” as their “most popular standards” which suggests that standards succeed if they

standards have come to be seen as prone to anticompetitive behavior.<sup>13</sup> To counter potentially opportunistic behavior, the (F)RAND commitment was established. (F)RAND, aims to offer a balance between two radically different approaches to innovation.<sup>14</sup>

The combination of a standard with a patent creates a challenging institution. Standard essential patents reflect a standard's aspiration for all-inclusiveness with a patent's goal of exclusivity.<sup>15</sup> The fact that such a contradiction creates tensions is hardly surprising.

Standard setting is believed to improve innovation efficiency as it provides market participants with a common baseline to adhere to.<sup>16</sup> While standards are technical in nature, companies engage in the standardization process for business reasons as explained below.<sup>17</sup>

Standards bear the potential to scale up technological solutions. This is an important economic value proposition. A standard can provide the baseline for an internationally recognized 'modus operandi' that market participants around the globe need to adhere to if they want to sell standard compliant products.<sup>18</sup> In the context of wireless telecommunications, adherence to a successful and eventually widely used standard is instrumental to assure interconnectivity and network access.<sup>19</sup>

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are widely used, and wide usage is in tension with a right to exclude. *See Popular Standards*, INT'L ORG FOR STANDARDIZATION, <https://www.iso.org/popular-standards.html> (last visited Sept. 12, 2021).

13. *See* George S. Cary et al., *The Case for Antitrust Law to Police the Patent Holdup Problem in Standard Setting*, 77 ANTITRUST L.J. 913, 917 (2011).

14. *FRAND*, FREE DICTIONARY, <https://acronyms.thefreedictionary.com/FRAND> (last visited Oct. 11, 2021).

15. *Standard Essential Patent (SEP)*, CONCURRENCES, <https://www.concurrences.com/en/dictionary/standard-essential-patent-sep> (last visited Oct. 11, 2021).

16. *See* Knut Blind, *The Impact of Standardization and Standards on Innovation* 9 (Manchester Inst. of Innovation Res., Working Paper No. 13/15, 2016).

17. *See id.* at 15–16.

18. This is self-explanatory. For example, it is not possible to sell a mobile phone with LTE without adhering to the LTE standard. *See generally* NICHOLAS DEMARINIS, WORCESTER POLYTECHNIC INST., ON LTE SECURITY: CLOSING THE GAP BETWEEN STANDARDS AND IMPLEMENTATION 1 (2015). **Error! Hyperlink reference not valid.**

19. David J. Teece, *Profiting from Innovation in the Digital Economy: Standards, Complementary Assets, and Business Models In the Wireless World* 3 (Tusher Ctr. for Mgmt. of Intell. Cap., Working Paper No. 16, 2016),

Because successful standards enable compatibility, they increase demand for complementary goods and services.<sup>20</sup> Another benefit of standards is that they signal technical excellence.<sup>21</sup> The more they become in use, the more they gain in relevance. Standards thrive, if they succeed in drawing in a large number of people, companies, NGOs, universities and any other players across the world.<sup>22</sup> The value proposition of a standard derives very much from an Open Innovation approach to technology development.<sup>23</sup> It is hinged on the idea that knowledge is all encompassing and good ideas can stem from anywhere. Motivating a diverse ecosystem of small and large players across the globe to join the debate on standards development is key to the creation of successful standards.<sup>24</sup>

The all-encompassing approach of standards stand in sharp contrast to the way patents aim to promote innovation. Contrary to standards, patents succeed if they are able to exclude third parties from using the patented technology.<sup>25</sup> Patents, like standards, are supposed to spur innovation, but the path is fundamentally different. Patents introduce a temporary monopoly right over an invention that meets the criteria of patentability.<sup>26</sup> An invention qualifies for patent protection if it is novel and involves an inventive step that is not known to a person skilled in the art and offers a distinct industrial application.<sup>27</sup> The property right conferred by patents is however not absolute; this is an important factor which differentiates a

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<https://www.haas.berkeley.edu/wp-content/uploads/Tusher-Center-Working-Paper-No.-16.pdf>.

20. *Id.*

21. *See generally* Blind, *supra* note 16, at 9.

22. *See id.* at 11.

23. *See* HENRY CHESBROUGH, OPEN INNOVATION: THE NEW IMPERATIVE FOR CREATING AND PROFITING FROM TECHNOLOGY 88 (2003).

24. Standards aim to offer a widely encompassing value proposition to the market. This can only be achieved if a wide group of experts is being attracted. For this process see for example how ISO, the International Organization for Standardization, describes the process. *See Developing Standards*, INT'L ORG FOR STANDARDIZATION, <https://www.iso.org/developing-standards.html> (last visited Sept. 13, 2021).

25. WORLD INTELLECTUAL PROPERTY ORGANIZATION, *supra* note 12.

26. *Id.* For example, the European Patent Office lists four criteria for patentability. *See Guidelines for Examination*, EUR. PAT. OFF., [https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g\\_i\\_1.htm](https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_i_1.htm) (last visited Oct. 11, 2021) [hereinafter EUROPEAN PATENT OFFICE].

27. *See* EUROPEAN PATENT OFFICE, *supra* note 26.

patent right from a tangible property right.<sup>28</sup> Because of the intangible nature of patent rights, it is not possible to qualify patent infringement as theft. This is because of the knowledge features of inventions. A patent that is infringed still allows the right holder to make use of the invention, even though her ability to market her invention may be limited.<sup>29</sup> This is not the case of a stolen tangible property. If a tangible property is stolen, it is gone and can no longer be used. Patent protection also distinguishes itself from tangible property as ownership it is limited in time and scope.<sup>30</sup> What one can protect and how long one can protect a specific invention is subject to stringent criteria.<sup>31</sup> Another important key feature of patents that differentiates them from tangible property is that one can only be certain that one actually owns a given patented feature if its validity has been put to the test in court proceedings.<sup>32</sup> A patent issued by a patent office can be found to be invalid later on.<sup>33</sup>

Both patents and standards constitute significant interventions in markets for technology. Both aspire to promote innovation; however, in very different ways. Patents, like standards, have drawbacks. Standards, for example, risk to freeze the status quo and can constitute a stumbling block for bringing better technological solutions to the market.<sup>34</sup> Patents again are subject to opportunistic behavior, and they can be used as a weapon that prevents or stifles innovative activities of competitors.<sup>35</sup> Drawbacks of both institutions have been

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28. *See generally* WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 294–353 (2003).

29. *Patent Infringement: Everything You Need to Know*, UPCOUNSEL, <https://www.upcounsel.com/patentinfringement> (last visited Sept. 20, 2021).

30. Under the TRIPS Agreement administered by the WTO for example, Patent Protection lasts for 20 years from the date the application was filed. *See Obligations and exceptions*, WTO (Sept. 2006), [https://www.wto.org/english/tratop\\_e/trips\\_e/factsheet\\_pharm02\\_e.htm#art33](https://www.wto.org/english/tratop_e/trips_e/factsheet_pharm02_e.htm#art33).

31. *See generally* EUROPEAN PATENT OFFICE, *supra* note 26.

32. *See* John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 *AIPLA Q.J.* 185, 251 (1998) (discussing data on patent litigation).

33. *See id.* at 252.

34. *See* Joseph Scott Miller, *Standard Setting, Patents, and Access Lock-In: RAND Licensing and the Theory of the Firm*, 40 *IND. L. REV.* 351, 351 (2007).

35. *See* William Wynne, *Patent Wars, Trolls, and Privateers: Killing Innovation, Death by 1,000 Lawsuits*, 47 *NEW ENG. L. REV.* 1009, 1023–24 (2012).

accepted as the best innovation governance to foster innovation.<sup>36</sup>

## II. (F)RAND IS INTERWOVEN WITH THE ASPIRATION TO COUNTER OPPORTUNISTIC BEHAVIOUR

The peculiar features of marrying patents with standards affect the determination of their royalty rate.<sup>37</sup> In my experience as an expert witness, patents that cover standard e technology are prone to anti-competitive usage as they associate the temporary monopoly right conferred by a patent with a market context, where it is impossible to opt out or invent around the patented technology. A patentee may gain from the incorporation of their patents into an industry standard.<sup>38</sup> This can place the patentee in the position to exploit unearned market power. A downstream innovator that needs to assure network access and interoperability will not be in a position to opt out of the standard.<sup>39</sup> A switch to an alternative standard will only be possible if all other market participants equally agree to switch to the other standard, a highly unrealistic and extremely costly scenario.<sup>40</sup> For their part, licensees can engage in significantly delaying the payment of licensing fees.<sup>41</sup>

Against this background, the (F)RAND commitment was established. (F)RAND entails that both licensor and licensee of standard essential patents engage in licensing practices that respect the (F)RAND commitment.<sup>42</sup>

From this, it follows that licensing rates for standard essential patents should be (F)RAND. (F)RAND seeks to waive the patent holder's right to refuse to license its IPR to anybody

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36. See Mark Lemley & Carl Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents*, 28 BERKELEY TECH. L.J. 1135, 1139 (2013).

37. See *id.* at 1135.

38. *Id.* at 1140.

39. See Miller, *supra* note 34, at 364.

40. *Id.* at 358.

41. See generally Anne Layne-Farrar, *Why Patent Holdout is Not Just a Fancy Name for Plain Old Patent Infringement*, COMPETITION POL'Y INT'L, Feb. 2016, at 2, 2–3, <https://media.crai.com/sites/default/files/publications/Why-Patent-Holdout-is-Not-Just-a-Fancy-Name-for-Plain-Old-Patent-Infringement.pdf> [<https://perma.cc/CSD4-JC5E>].

42. Abraham Kasdan & Michael J. Kasdan, *Recent Developments in the Licensing of Standards Essential Patents*, 11 NAT. L. REV. 264, 264 (2019).

seeking such a license.<sup>43</sup> For their part, licensees are expected to engage in licensing negotiations in good faith and not infringe on a standard essential patent (SEP) holder's intellectual property (IP).<sup>44</sup> The CJEU confirmed in *Huawei vs. ZTE* that:

an undertaking to grant licenses on (F)RAND terms creates legitimate expectations on the part of third parties that the proprietor of the SEP will in fact grant licenses on such terms.<sup>45</sup>

The (F)RAND debate is invariably interwoven with the need to counter adverse behavior, as described by the notions of 'hold up' and 'hold out'<sup>46</sup> Both characterize opportunistic behavior and can lead to licensing rates that are not reflective of the (F)RAND royalty rate.<sup>47</sup> In the context of hold up, the licensing rate may be above the (F)RAND rate<sup>48</sup> and in the context of hold out, it may be below the (F)RAND rate.<sup>49</sup> Hold up can also reflect the ability of the SEPs owner to obtain access to the downstream innovator's portfolio of SEPs and non-SEPs for free or below the reasonable rate.

Hold up is aggravated when one party in a relationship makes sunk investments before it negotiates the commercial terms of the relationship.<sup>50</sup> The licensee worsened its bargaining position because it had made investments before and

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43. See generally CHRYSOULA PENTHEROUDAKIS & JUSTUS BARON, LICENSING TERMS OF STANDARD ESSENTIAL PATENTS: A COMPREHENSIVE ANALYSIS OF CASES, EUR. COMM'N JOINT RES. CTR. 26 (2017).

44. Mario Mariniello, *Fair, Reasonable and Non-Discriminatory ((F)RAND) Terms: A Challenge for Competition Authorities*, 7 J. COMPETITION L. & ECON. 523, 524–25 (2011).

45. Case C-170/13, *Huawei Tech. Co. Ltd. v. ZTE Corp.*, ECLI:EU:C:2015:477, ¶ 71 (July 16, 2015).

46. *Unwired Planet Int'l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [95], [111], [178], [198].

47. See Lemley & Shapiro, *supra* note 36, at 2008.

48. *Id.*

49. Richard A. Epstein & Kayvan B. Noroozi, *Why Incentives for "Patent Holdout" Threaten to Dismantle FRAND, and Why It Matters*, 32 BERKELEY TECH. L.J. 1381, 1382 (2017) ("This Article shows . . . courts' failure to appreciate these aspects of the FRAND bargain, combined with their overreliance on liability rules . . . incentivizes the very patent holdout problem FRAND was intended to avoid.").

50. See Lemley & Shapiro, *supra* note 36, at 2015 ("[W]hen technology markets are fragmented [among] firms that have made large investments in technology-specific assets, i.e., the firms most vulnerable to holdup.").

is not in the same position it would have been had it negotiated the licensing rate before the investment was made.<sup>51</sup>

Hold-up can be associated with the fact that the creation of market power after that standard has been adopted, is exacerbated when a downstream innovator makes significant investments based on the standard.<sup>52</sup> That being said, the effectiveness of existing mechanisms dealing with hold-up, including the (F)RAND commitment, remain controversial.

In practice, hold up has been recognized by courts and public authorities around the world.<sup>53</sup> The CJEU in *Huawei vs. ZTE* states:

the positions of the proprietor of an SEP and of the infringer ought not to make it possible for them to obtain excessively high royalties (a ‘hold-up’ situation) or excessively low royalties (a ‘reverse hold-up’ situation), respectively.<sup>54</sup>

The European Commission recognizes the risks associated with hold up and subsequent locked-in effects. The European Commission Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements make it clear that:

it may be possible to compare the licensing fees charged by the company in question for the relevant patents in a competitive environment before the industry has been locked into the standard (ex-ante) with those charged after the industry has been locked in (ex-post).<sup>55</sup>

Similar principles were upheld in the EU Commission Decision in *Motorola, Huawei vs. ZTE, Microsoft vs. Motorola, In re Innovatio*, and *Unwired Planet vs. Huawei*.<sup>56</sup> Based on the

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51. *See id.* at 2015–16.

52. *See* Thomas F. Cotter, Erik Hovenkamp, & Norman Siebrasse, *Demystifying Patent Holdup*, 76 WASH. & LEE L. REV. 1501, 1549 (2019).

53. Case C-170/13, *Huawei Tech. Co. Ltd. v. ZTE Corp.*, ECLI:EU:C:2015:477, ¶ 38 (July 16, 2015).

54. *Id.*

55. Eur. Comm’n, Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-operation Agreements, 2011 O.J. (C 11) 1, ¶ 289.

56. Council Regulation 1/2003 art. 7, 2014, ¶¶ 76–77 (EC); Case C-170/13, *Huawei Tech. Co. Ltd. v. ZTE Corp.*, ECLI:EU:C:2015:477, ¶¶ 48, 55 (July 16, 2015); *See generally* *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL

discussion above, it is my opinion that there appears to be a certain common understanding of the notion that hold up can be a risk and needs to be addressed in the context of the (F)RAND commitment.

(F)RAND is also recognized as a means to counter the risk of royalty stacking.<sup>57</sup> In fact, it can be argued that royalty stacking has been established as a core principle of (F)RAND. By background, royalty stacking refers to the cumulative royalty rates that a SEPs licensee may need to pay, if all other SEPs licensees were to make the same or similar licensing requests as the SEPs owner in question.<sup>58</sup>

Multi-component products make use of many different standards and contain many different patents.<sup>59</sup> A typical mobile phone may contain more than 250,000 patents.<sup>60</sup> A downstream innovator is not only obliged to pay royalties to a single holder of standard essential patents, but to many different SEPs holders.<sup>61</sup> Even the hypothetical risk of royalty stacking has been recognized as an issue that deserves recognition in a (F)RAND royalty rate determination.<sup>62</sup>

Downstream innovators can also engage in adverse behavior, as described in the debate on hold-out. In *Unwired Planet vs. Huawei* hold out is described as “unscrupulous licensee [using] their economic strength to avoid paying anything to a patentee, unduly dragging out the process of negotiation, thereby putting the patentee to additional cost and forcing it to accept a lower royalty rate than is fair.”<sup>63</sup> The peculiar features of patent rights, as previously discussed,

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2111217 at \*2 (W.D. Wash. Apr. 25, 2013); *In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609 at \*14-15 (N.D. Ill. Oct. 3, 2013); *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [92].

57. Lemley & Shapiro, *supra* note 36, at 1991.

58. *See id.* at 1993.

59. *See* Christopher Young, *Matching Patents to Products: Determining Which Patents Will be Implemented in Real-World Commercial Products*, IPWATCHDOG (Apr. 15, 2019), <https://www.ipwatchdog.com/2019/04/15/matching-patents-products-determining-patents-will-implemented-real-world-commercial-products/id=108266/> [<https://perma.cc/FZ2R-GWYS>].

60. RPX Corp., Registration Statement (Form S-1) 59 (Sept. 2, 2011), <https://www.sec.gov/Archives/edgar/data/1509432/000119312511240287/ds1.html> [<https://perma.cc/24SS-TRAH>].

61. *See id.*; *see also* Lemley & Shapiro, *supra* note 36, at 1995–97.

62. *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [476]–[80].

63. *Id.* [95].

hinged on this argument. This makes it fairly easy to misappropriate IP assets.<sup>64</sup>

Over time, different courts have emphasized either hold-up or hold out. However, the necessity to address adverse behavior within the context of (F)RAND has never been questioned. In *Microsoft v. Motorola* more hold up was emphasized more than hold out: '[w]hen the standard becomes widely used, the holders of SEPs obtain substantial leverage to demand more than the value of their specific patented technology.'<sup>65</sup> In *TCL v. Ericsson*, (F)RAND is looked at from a SEPs quality perspective and important efforts are made to pay justice to the probabilistic nature of SEPs.<sup>66</sup> The *Unwired Planet v. Huawei* Court again stated that (F)RAND can be seen as a way to regulate adverse market behavior and assure adequate payment for SEPs.<sup>67</sup>

### III. IPR POLICIES OF MAJOR STANDARD SETTING ORGANIZATIONS

The IPR policies of standard-setting organizations often address how patents that affect standards should be treated.<sup>68</sup> Many, but not all, standard-setting organizations have IPR policies that seek to address the patent component and address the nature of the (F)RAND commitment.<sup>69</sup>

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64. *Id.* [658].

65. *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217, at \*10 (W.D. Wash. Apr. 25, 2013).

66. *TCL Comm'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635, \*8 (C.D. Cal. Dec. 21, 2017) (also available at <https://www.essentialpatentblog.com/wp-content/uploads/sites/64/2018/01/2017.12.21-1802-Court-Memo-of-Facts-and-Law-PUBLIC-CORRECTED.pdf> [<https://perma.cc/6TMR-9KME>] and the injunction is available at <https://www.essentialpatentblog.com/wp-content/uploads/sites/64/2017/12/2017.12.22-1803-Final-Judgment-And-Injunction.pdf> [<https://perma.cc/AEM3-JQGG>]).

67. *Unwired Planet Int'l Ltd. v. Huawei Tech. Co. Ltd.*, [2017] EWHC 711 (Pat), [96].

68. *See, e.g., Rules of Procedure, 14 April 2021*, EUR. TELECOMM. STANDARDS INST., INTELL. PROP. RTS POL'Y (2021) <https://www.etsi.org/images/files/IPR/etsi-ipr-policy.pdf> (last visited Sept. 7, 2021) [hereinafter ETSI IPR].

69. *Id.*; *See also Patent Policy*, ALLIANCE FOR TELECOMM. INDUS. SOLUTIONS, <https://www.atis.org/policy/patent-policy/> (last visited Sept. 7, 2021) [hereinafter ATIS Patent Policy]; *see TIA Intellectual Property Rights Policy*, TELECOMM. INDUS. ASS'N at 6 (Oct. 21, 2016), [https://www.tiaonline.org/wp-content/uploads/2018/05/TIA\\_Intellectual\\_Property\\_Rights\\_Policy.pdf](https://www.tiaonline.org/wp-content/uploads/2018/05/TIA_Intellectual_Property_Rights_Policy.pdf) (last visited Sept. 7, 2021) [hereinafter TIA IP Rights Policy].

The various IPR policies of different Standard Setting Organizations (“SSOs”) are also not necessarily exhaustive. Key SSOs, such as ETSI (The European Telecommunications Standards Institute), ATIS (The Alliance for Telecommunications Industry Solutions), and TIA (Telecommunications Industry Association) request that patents that read on standards be licensed on (F)RAND terms.<sup>70</sup>

The dilemma, however, is that the IPR policies of SSOs are (paradoxically) not standardized.<sup>71</sup> Different SSOs have a different take on how patents that read on the standards issued under their umbrella are to be treated.<sup>72</sup> The situation is aggravated by the fact that these IPR policies are situated in different jurisdictional contexts.<sup>73</sup>

At the bare minimum, the IPR policies recognize the need to respect the (F)RAND commitment and request that patents be licensed on (F)RAND terms (as the below illustrations of various IPR policies of key SSOs show). Some SSOs, such as TIA or ATIS, request or at least recommend that SEPs should be licensed on a royalty-free basis.<sup>74</sup>

The ETSI IPR policy states:

6.1 When 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 ((F)RAND) terms and conditions under such IPR to at least the following extent:

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70. See ETSI IPR, *supra* note 68; ATIS Patent Policy, *supra* note 69; TIA IP Rights Policy, *supra* note 69, at 6.

71. For example, the SSOs discussed here do not all have the same IPR policy and are hence not using the same standardized IPR policy. See ETSI IPR, *supra* note 68; ATIS Patent Policy, *supra* note 69; TIA IP Rights Policy, *supra* note 69.

72. See ETSI IPR, *supra* note 68; ATIS Patent Policy, *supra* note 69; TIA IP Rights Policy, *supra* note 69.

73. Rudi Bekkers, *IPR Policies and Practices of a Representative Group of Standards-Setting Organizations Worldwide*, in NAT'L. RSCH. COUNCIL 2 (May 2013), [https://www.nap.edu/resource/18510/Bekkers-Updegrove%20Paper\\_092013.pdf](https://www.nap.edu/resource/18510/Bekkers-Updegrove%20Paper_092013.pdf).

74. See ATIS Patent Policy, *supra* note 69; TIA IP Rights Policy, *supra* note 69.

- MANUFACTURE, including the right to make or have made customized 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.<sup>75</sup>

TIA's IPR Policy mandates participants to license any SEPs on terms that are reasonable, non-discriminatory, and subject to restriction on monetary compensation as discussed below.<sup>76</sup>

A license under any Essential Patent(s), the license rights which are held by the undersigned Patent Holder, will be made available to all applicants under terms and conditions that are reasonable and non-discriminatory, which may include monetary compensation, and only to the extent necessary for the practice of any or all of the Normative portions for the field of use of practice of the Standard(s).<sup>77</sup>

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75. ETSI IPR, *supra* note 68 (the specific policy dated Mar. 20, 2013 could not be located, but substantially similar language can be found in Article 6.1 of the ETSI IPR in the Rules of Procedure of Apr. 14, 2021); see Eric L. Stasik, *The Role of the European Commission in the Development of the ETSI IPR Policy and the Nature of the FRAND*, in *MULTI-DIMENSIONAL APPROACHES TOWARDS NEW TECHNOLOGY* 73, 79–82 (Ashish Bharadwaj & Vishwas H. Devaiah Indranath Gupta eds. 2018), <https://link.springer.com/content/pdf/10.1007%2F978-981-13-1232-8.pdf> [<https://perma.cc/RA6E-TK3W>].

76. TIA, GUIDELINES TO THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION INTELLECTUAL PROPERTY RIGHTS POLICY, TELECOMM. INDUS. ASS'N (2014), [https://www.tiaonline.org/wp-content/uploads/2018/05/Guidelines\\_to\\_the\\_Intellectual\\_Rights\\_Policy\\_of\\_the\\_Telecommunications\\_Industry\\_Association.pdf](https://www.tiaonline.org/wp-content/uploads/2018/05/Guidelines_to_the_Intellectual_Rights_Policy_of_the_Telecommunications_Industry_Association.pdf) [<https://perma.cc/G8ZS-NE8K>]; see also *Patent Holder Statements*, TELECOMM. INDUS. ASS'N [https://standards.tiaonline.org/standards/\\_procedures/ipr/ipr\\_details.cfm?stmt\\_id=338](https://standards.tiaonline.org/standards/_procedures/ipr/ipr_details.cfm?stmt_id=338) [<https://perma.cc/8WFS-CUVU>] (last visited Sept. 7, 2021); *Patent Holder Statements*, TELECOMM. INDUS. ASS'N (Nov. 6, 2003), [https://standards.tiaonline.org/standards/procedures/ipr/documents/101107\\_032435.pdf](https://standards.tiaonline.org/standards/procedures/ipr/documents/101107_032435.pdf) [<https://perma.cc/QKU8-FVVQ>] (last visited Sept. 7, 2021).

77. *Patent Holder Statements*, TELECOMM. INDUS. ASS'N [https://standards.tiaonline.org/standards/\\_procedures/ipr/ipr\\_details.cfm?stmt\\_id=338](https://standards.tiaonline.org/standards/_procedures/ipr/ipr_details.cfm?stmt_id=338) [<https://perma.cc/7F3A-XGJX>] (last visited Sept. 7, 2021).

ATIS likewise foresees that SEP owners offer a license on (F)RAND terms.<sup>78</sup> ATIS also suggests that the terms of a licensing rate should be reasonable and free of unfair discrimination.<sup>79</sup> ATIS proposes that a royalty rate should be royalty free “without compensation and under reasonable terms and conditions that are demonstrably free of any unfair discrimination.”<sup>80</sup>

#### IV. INSIGHTS ON JUDICIALLY DETERMINES (F)RAND ROYALTY RATES

Cornerstone cases particularly rely on the Top Down<sup>81</sup> and Comparable Licenses approaches.<sup>82</sup> When seeking overarching principles for (F)RAND royalty rates, it is helpful to look at those two approaches as they have been employed in key cases across the globe.<sup>83</sup> Often, the Top Down and Comparable Licenses approaches have been used in combination.<sup>84</sup> This is why these approaches are explained further in the following chapters.

These cases involve large multi-national technology corporations and pertain to various aspects of (F)RAND and the

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78. ATIS, OPERATING PROCEDURES FOR ATIS FORUMS AND COMMITTEES VERSION( 5.5) 1, 11 (2018), [https://www.atis.org/wp-content/uploads/01\\_legal/docs/OP.pdf](https://www.atis.org/wp-content/uploads/01_legal/docs/OP.pdf) [<https://perma.cc/MS2V-ZYUZ>].

79. *See id.*

80. *Id.*

81. *In re Innovatio IP Ventures, LLC Patent Litig.*, MDL 2303, 2013 WL 5593609 at \*37–38 (N.D. Ill. Oct. 3, 2013); *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [8060]; *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*8 (C.D. Cal. Dec. 21, 2017); *Adrian Emch & Zhen Feng, Huawei v. Samsung — A New Benchmark for Standard Essential Patent Litigation in China?*, JD SUPRA (June 19, 2018), <https://www.jdsupra.com/legalnews/huawei-v-samsung-a-new-benchmark-for-47563/> (last visited Sept. 7, 2021).

82. *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217 at \*4 (W.D. Wash. Apr. 25, 2013); *see also SK Hynix Inc. v. Rambus Inc.*, No. C-00-20905 RMW, 2013 WL 1915865 at \*20 (N.D. Cal. May 8, 2013); *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 29 (C.D. Cal. Dec. 21, 2017); *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [43].

83. *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217 at \*18, \*20 (W.D. Wash. Apr. 25, 2013); *see also Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [178], [179].

84. *See TCL Comm’n Tech. Holdings, Ltd. V. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370 JVS(DFMX), 2017 WL 6611635 at \*9 (C.D. Cal. Dec. 21, 2017); *see also In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609 at \*37–38 (N.D. Ill. Oct. 3, 2013).

licensing of standard essential patents.<sup>85</sup> None of the cases identified are older than eight years.<sup>86</sup> These cases are central to what the press has nicknamed the “patent wars.”<sup>87</sup> Significant amounts of money have changed hands on the grounds of the determination of the economic worth of the standard essential patents.<sup>88</sup>

In my opinion, as the necessity to systematically argue a (F)RAND rate from an economic perspective increase, more methods may arise and/or the approaches described here may be further combined and mixed to establish hybrid approaches to fit the needs of a specific licensing context. This can be explained by the need for (F)rand royalty rate calculation increases and that the application of multiple methods offers better insights than just the use of a single method. Consequentially, the calculation of (F)rand rates will become increasingly sophisticated. Hence, these approaches may evolve over time. The sole purpose here is to describe methods that have been used in court so far. In doing so, this article does not have the goal to be exhaustive, nor to pass any type of judgement.

Coming to grips with the economic models discussed in these cases constitutes a key approach to defining (F)RAND. This can be explained by the fact that these cases constitute recognized precedents.<sup>89</sup>

Much of the thinking of how to encapsulate (F)RAND from an economic perspective stems from United States jurisprudence.<sup>90</sup> Cases stemming out of the U.S. have, as a general principle, addressed (F)RAND royalty calculations from

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85. *See infra* Table 1.

86. *Id.*

87. Charles Arthur, *Apple, Samsung, Google and the Smartphone Patent Wars - Everything You Need to Know*, FIN. TIMES (Oct. 22, 2012, 3:45 PM), <https://www.theguardian.com/technology/2012/oct/22/smartphone-patent-wars-explained>; Jack Nicas, *Apple and Samsung End Smartphone Patent Wars*, N.Y. TIMES (Jun. 27, 2018), <https://www.nytimes.com/2018/06/27/technology/apple-samsung-smartphone-patent.html>.

88. *See infra* Table 1; *See* Jack Nicas, *Apple and Samsung End Smartphone Patent Wars*, N.Y. TIMES (June 27, 2018), <https://www.nytimes.com/2018/06/27/technology/apple-samsung-smartphone-patent.html> (a jury ordered Samsung to pay Apple \$539 million for infringing on its patents).

89. *See infra* Table 1.

90. *See* TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson, No: SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*29 (C.D. Cal. Dec. 21, 2017); *see In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609 at \*37–38 (N.D. Ill. Oct. 3, 2013).

the perspective of the Georgia Pacific criteria.<sup>91</sup> The Georgia Pacific Criteria comprise of fifteen distinct points which aim to guide damage calculations.<sup>92</sup> Certainly, US legal reasoning is limited to this country and is not typically binding overseas.

(F)RAND royalty rates have not only been determined by U.S. courts. Courts around the world have undertaken the effort to determine (F)RAND royalty rates.<sup>93</sup> In Europe, *The Unwired Planet v. Huawei* court was the first to base its decision on a (F)RAND royalty rate determination.<sup>94</sup> The chart below offers an overview of key cases that have dealt with a (F)RAND royalty rate determination.

Use of The Top Down Approach	Use of the Comparable Licenses Approach
<i>Huawei v. Samsung</i> (China, 2018)	<i>Microsoft v. Motorola</i> (USA, 2013)
<i>Samsung v. Apple</i> (Japan, 2014)	<i>SK Hynix v. Rambus</i> (USA, 2013)
<i>Unwired Planet v. Huawei</i> (UK, 2017)	<i>Unwired Planet v. Huawei</i> (UK, 2017)
<i>TCL v. Ericsson</i> (USA, 2017)	<i>TCL v. Ericsson</i> (USA, 2017)
<i>In re Innovatio IP Ventures</i> (USA, 2017)	<i>In re Innovatio IP Ventures</i> (USA, 2017)
	<i>Huawei v. InterDigital</i> (China, 2013)

TABLE 1: EXAMPLES OF CASES THAT RELIED ON THE TOP DOWN COMPARABLE LICENSES APPROACHES

## V. THE TOP DOWN APPROACH

Some of the most prominent cases in the world history of (F)RAND litigation have hinged on the Top Down approach.<sup>95</sup> As such, the approach qualifies as a way to enable a court to

91. See generally *Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116 (S.D.N.Y. 1970) (which has been cited by more than 300 cases in the U.S. according to WestLaw).

92. *Id.* at 1120.

93. See Rufus Pichler & Holger Kastler, *FRAND Case Law in Europe After Huawei v. ZTE*, MORRISON FOERSTER (Apr. 05, 2019), <https://www.mofo.com/resources/insights/190405-frand-case-law-europe.html>.

94. *Id.*

95. See *supra* Table 1 (left column).

calculate (F)RAND royalty rates.<sup>96</sup> The method can be used as a principal method or as a secondary method.<sup>97</sup>

The Top Down approach determines an aggregate (F)RAND royalty rate and then seeks to distribute that rate among the various patents or patent families that read on a standard.<sup>98</sup> The approach seeks to split the cumulative royalty rate among all patents deemed essential to the standard:<sup>99</sup> States the Court in *TCL v Ericsson*

A top down model aims to value a portfolio of SEPs by determining a fair and reasonable total aggregate royalty for all patents that are essential to a standard. It then apportions that royalty to the SEP owners based on the relative value of their portfolio against the value of all patents essential to the standard.<sup>100</sup>

Equally, the *Unwired Planet vs Huawei* Court describes the Top Down approach as,

One approach (referred to as ‘top down’) starts with a number representing what the appropriate total aggregate royalty burden should be for a given standard (call it T). One can take a view about what the total royalty burden for all the

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96. See *supra* Table 1 (left column).

97. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*50–51, \*55 (C.D. Cal. Dec. 21, 2017) (top down and comparable rate were used in combination); Jacob Schindler, *Full Judgment in Huawei v Samsung Details Why Shenzhen Court Hit Korean Company with SEP Injunction*, IAM-MEDIA (Apr. 3, 2018), <https://www.iam-media.com/frandseps/full-judgment-in-huawei-v-samsung-details-why-shenzhen-court-hit-korean-company-sep>; see *In\_re Innovatio IP Ventures, LLC. Pat. Litig.*, No. 11 C 9308, 2013 WL 55936609 at \*39 (N.D. Ill. Oct. 3, 2013); see also *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [796]–[800] (secondary method).

98. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*1 (C.D. Cal. Dec. 21, 2017) (the “top-down” approach begins with an aggregate royalty for all patents encompassed in a standard); *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [178].

99. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*24 (C.D. Cal. Dec. 21, 2017); *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [178].

100. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*8 (C.D. Cal., Dec. 21, 2017).

intellectual property relating to the standardised telecommunications technology in a handset should be and indeed various companies have made public statements about this. Starting from this figure T one can then share out the royalty across all licensors in proportion to the value of each licensor's patent portfolio based on assessing that value as a share (call it S) of the total relevant patent portfolio essential to that standard. The FRAND rate is the product of the two (TxS).<sup>101</sup>

The approach does not rely on information about other licensing transactions that may or may not be comparable.<sup>102</sup> As such, the approach has been identified as being particularly useful if adopted either as a principal approach, an alternative, or an additional approach to the Comparable Licenses approach [or vice versa] when establishing (F)RAND royalty rates.<sup>103</sup> However, depending on the circumstances of a case, and on what data is available to a court, synergies between any approaches can exist.<sup>104</sup>

In the US context, this method can be tied to Georgia Pacific Factor 12, which requires a determination of the portion of profit attributable to the technology in the implementer's field.<sup>105</sup> It can also be tied to Georgia Pacific Factor 13, which looks at the

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101. *Unwired Planet Int'l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [178].

102. This can be explained by the quantitative approach this method makes use of. This is also why the Top Down Approach can be used as a complementary method to the Comparable Licenses Approach. The court in *In re Innovatio* note "[a] second advantage of Dr. Leonard's Top Down approach is that it apportions to the value of Innovatio's patented features without relying on information about other licenses that may or may not be comparable to accomplish the apportionment." *In re Innovatio IP Ventures, LLC Pat. Litig.*, MDL 2303, 2013 WL 5593609 at \*39 (N.D. Ill. Oct. 3, 2013).

103. The Court adopted a Top Down approach to cross-check the royalty rates that were generated through the market-approach. *See Unwired Planet Int'l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [476]–[77] the Court adopted a Top Down approach to cross-check the royalty rates that were generated through the market-approach. *See TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*18, \*22 (C.D. Cal. Dec 21, 2017).

104. This can be explained by the fact that the Top Down Approach and the Comparable Licenses Approach look at valuation from a different perspective. The Top Down Approach offers and aggregate rate, whereas the Comparable Licenses Approach makes a statement of a licensing rate with reference to what other market participants have been prepared to pay. *See supra* Table 1.

105. *Georgia-Pacific Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

portion of the realized profit attributable to this particular patent.<sup>106</sup>

Another advantage of the Top Down approach is that it establishes an aggregate royalty rate for all the patents that read on a standard.<sup>107</sup> As such, it caps the total royalty burden a licensee may have to pay.<sup>108</sup> In such a scenario, the number of entities holding and asserting SEPs becomes irrelevant as the maximum royalty burden has been determined in advance.<sup>109</sup>

Determining a (F)RAND licensing rate in such a way can disincentivize SEPs holders to monetize their patents through various different companies.<sup>110</sup> As such, it limits the increasingly common practice of privateering.<sup>111</sup> Privateering refers to the “assertion of [intellectual property rights] by an entity (the privateer), typically in the form of [a non-practicing entity] against a target company for the direct benefit of the privateer and the consequential benefit of a sponsor, where the consequential benefits are significantly greater than the direct benefits.”<sup>112</sup> Whether or not such practices adversely affect the public interest has been subject to heated debate. At the least, it is fair to say that a burgeoning amount of (F)RAND disputes involve SEPs which their owners have passed on to the patent licensing companies.<sup>113</sup>

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106. *Id.*

107. See *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [178].

108. See *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*37 (C.D. Cal. Dec. 21, 2017). However, this can also be explained by simple reasoning. The Top Down Approach offers an aggregate rate for the standard. This is why it offers a cap. This is a logical consequence of the methodology.

109. The Top Down Approach offers an aggregate rate for the standard. This is why it offers a cap. Equally for this reason, the number of SEPs owners that holding and asserting SEPs becomes irrelevant as the maximum royalty burden has been determined in advance. This is a logical consequence of the methodology. In this respect the *Unwired Planet* court notes that “[a] virtue of a total stack method is that in such a system there is no incentive for patent holders to divest their patents *ex post* to achieve a higher return since the total stack remains fixed.” *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [267].

110. See *id.*

111. Tom Ewing, *Indirect Exploitation of Intellectual Property Rights by Corporations and Investors: IP Privateering and Modern Letters of Marque and Reprisal*, 4 HASTINGS SCI. & TECH. L.J. 1, 13, 81–82 (2012).

112. *Id.* at 5.

113. See *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [1]; see also *In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609 at \*4 (N.D. Ill. Oct. 3, 2013); *SK Hynix Inc. v. Rambus Inc.*, No. C-00-20905 RMW, 2013 WL 1915865 at \*1 (N.D. Cal. May 8, 2013).

### A. *The Top Down Approach and Royalty Stacking*

Because the Top Down approach commonly starts off by establishing the total aggregate royalty burden, this methodology can effectively mitigate against the risk of royalty stacking.<sup>114</sup>

Mitigating the risk of royalty stacking played a decisive role in some corner stone (F)RAND cases, such as *TCL v. Ericsson*,<sup>115</sup> *Microsoft v Motorola*,<sup>116</sup> *In re Innovatio*,<sup>117</sup> and *Unwired Planet v. Huawei*.<sup>118</sup> In these cases, the risk of royalty stacking was deemed to be so important that it was reflected in the (F)RAND royalty rate calculation.<sup>119</sup> Stated the Court in *TCL vs Ericsson* for example: ‘The appeal of a Top Down approach is that it prevents royalty stacking. Stacking occurs when each individual SEP holder demands a royalty which when totalled exceeds the value of all the SEPs in a standard.’<sup>120</sup>

It is important to note that in these cases a mere hypothetical royalty stacking risk was recognized to be sufficiently important as to be reflected in the (F)RAND royalty rate calculation.<sup>121</sup>

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114. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*1 (C.D. Cal., Dec 21, 2017) (the “top-down” approach begins with an aggregate royalty for all patents encompassed in a standard); *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [172].

115. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. SACV 14-341 JVS(DFMx), 2017 WL 6611635 at \*15 (C.D. Cal. Dec. 21, 2017).

116. *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*12 (W.D. Wash. Apr. 25, 2013).

117. *In re Innovatio IP Ventures, LLC Patent Litig.*, MDL 2303, 2013 WL 5593609, at \*9 (N.D. Ill. Oct. 3, 2013).

118. *Unwired Planet Int’l Ltd. v. Huawei Tech. Co. Ltd.* [2017] EWHC 711 (Pat), [267].

119. *See* *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 2017 WL 6611635 at \*8 (C.D. Cal. Dec. 21, 2017); *see* *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 2111217 at \*86 (W.D. Wash. Apr. 25, 2013); *see In re Innovatio IP Ventures, LLC Pat. Litig.*, 11 C 9308, 2013 WL 5593609 at \*9 (N.D. Ill. Oct. 3, 2013); *see* *Unwired Planet Int’l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [267].

120. *TCL Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, 2017 WL 6611635 \*1, \*8 (C.D. Cal. 2017)

121. In *In re Innovatio IP Ventures*, for example, the court talks of the “risk of royalty stacking.” *In re Innovatio IP Ventures, LLC Pat. Litig.*, 11 C 9308, 2013 WL 5593609 1, 9 (N.D. Ill. Oct. 3, 2013). In *Unwired Planet*, the court listed risk factors (and not the actual occurrence) of royalty stacking: Huawei pointed out correctly . . . rather to apply to the imputed royalty stack. *Unwired Planet Int’l Ltd.*, [2017] EWHC 711 (Pat), [369].

In *TCL v. Ericsson*, the principle of royalty stacking was instrumental for the (F)RAND royalty rate determination.<sup>122</sup>

The court adopted the Top Down approach as its primary method as it considered it a substantial advantage that the approach addressed the risk of royalty stacking.<sup>123</sup>

In *Microsoft v. Motorola* the royalty stacking argument led the court to believe that the licensing rate sought by Motorola was unreasonable.<sup>124</sup> The court noted that there were at least 92 entities holding patents deemed to be essential to the 802.11 (Wi-Fi) standard.<sup>125</sup> All of these entities *could* make a licensing request similar to the one of Motorola.<sup>126</sup> In such a situation, the aggregate royalty burden would be excessive and prevent the implementation of the 802.11 Standard.<sup>127</sup> The (F)RAND royalty rate was adjusted to reflect the hypothetical royalty burden by consequence.<sup>128</sup>

Similarly, in *In re Innovatio*, the court reasoned that the appropriate (F)RAND rate must address the risk of royalty stacking and reflect the aggregate royalty rate that *could* apply if other SEP-holders made similar royalty requests.<sup>129</sup> It follows from this statement that the concept of royalty stacking was an important element in how the court established an upper bound for the (F)RAND royalty rate.<sup>130</sup> The (F)RAND rate was capped in light of the downstream innovator's profit margin.<sup>131</sup>

In *Unwired Planet v. Huawei* the court equally referred to the need to determine the cumulative royalty stack and made subsequent use of the Top Down approach.<sup>132</sup>

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122. *TCL Communication Technology Holdings, Ltd.*, No. 14-341 at \*15 (C.D. Cal. Dec. 21, 2017).

123. *Id.* at \*15.

124. *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*216 (W.D. Wash. Apr. 25, 2013).

125. *See generally id.* at \*213.

126. *Id.*

127. *Id.*

128. *See id.* at \*215–16.

129. *In re Innovatio IP Ventures, LLC Pat. Litig.*, No. 11 C 9308, 2013 WL 5593609, at \*9 (N.D. Ill. Oct. 3, 2013).

130. *Id.* at \*10.

131. *See id.* at \*38.

132. *Unwired Planet Int'l Ltd. v. Huawei Techs. Co.*, [2017] EWHC 711 (Pat), [267].

*B. Application of the Top Down Approach by Courts*

The Top Down approach has been used in different ways by different courts as explained below. The *Unwired Planet v. Huawei* court used it to assess the implied aggregate licensing rate for the Unwired Planet SEPs portfolio.<sup>133</sup> The way the Court did so was to first make use of the Comparable License approach.<sup>134</sup> Then it used the information gained through this approach to assess the (F)RAND royalty rate for the Unwired Planet portfolio.<sup>135</sup>

For example, a benchmark royalty rate for Unwired Planet 4G multimode handset of 0.062% was divided by 0.70%, which represented Unwired Planet's share of relevant SEPs for the standard. This produced a total aggregate royalty burden of 8.8%.<sup>136</sup> As such, the calculation hinged on values derived from the Comparable Licenses approach.<sup>137</sup> In doing so, the *Unwired Planet vs Huawei* court recognized the risk of royalty stacking.<sup>138</sup>

The *Unwired Planet court* used the patent counting technique to split the aggregate rate among the various contributors to the standard, was to count patents.<sup>139</sup> The counting of patents constitutes a common market practice.<sup>140</sup>

Parties negotiating SEP licences in fact use methods which are based on patent counting. That is evidence which supports a finding that a (F)RAND approach to assessing a royalty rate is to engage in some kind of patent counting. Indeed, when one thinks about it some sort of patent counting is the only practical approach at least for a portfolio of any size.<sup>141</sup>

In both *TCL v. Ericsson* and in *Samsung v Apple*, the court capped the total royalty rate based on endorsements and public statements made previously by the companies as well as other

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133. *Id.* [476].

134. *Id.* [267].

135. *Id.* [398].

136. *Id.* [476].

137. *See id.*

138. *See id.* [267], [369].

139. *Id.* [476].

140. *See id.* [182].

141. *Id.*

market participants.<sup>142</sup> In *Huawei v. Samsung* the Top Down approach was equally used as a principal method.<sup>143</sup>

In *TCL v. Ericsson*, the court noted that Ericsson had advocated a modest single-digit figure for 3G-WCDMA in 2002 and endorsed a reasonable maximum aggregate royalty level of 6% to 8% for 4G/LTE in 2008, and by consequence endorsed 5% as the total aggregate royalty burden for 2G and 3G and defined a range between 6% to 10% for 4G.<sup>144</sup> The decision was made based on Ericsson's own public statements, along with several other SEPs holders voicing support in favor of a total royalty rate for each standard with the similar values as those adopted by the court.<sup>145</sup> The court affirmed that those statements were of particular importance in a (F)RAND context as they were made prior or around the time that the standards were adopted and therefore reflective of ex-ante conditions. This allowed the court to address the issue of both royalty stacking and patent-holdup.<sup>146</sup>

Ericsson countered that these statements were not reflective of a reasonable total royalty rate, stating that amongst other things, they did not anticipate the rapid decline in prices of 4G phones, and that the statement concerning the 3G standard should be understood in the context of the current prices of end-products.<sup>147</sup> The Court did not accept this argument.<sup>148</sup>

The (F)RAND royalty rate determination applied in *TCL v. Ericsson* is not fundamentally different from the way that the (F)RAND royalty rate was determined in *Unwired Planet v. Huawei*. This is because in both cases the Top Down approach

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142. See *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. 14-341 at \*20–26 (C.D. Cal. Mar. 09, 2018); *Samsung v. Apple*, Intellectual Prop. High Ct. May 16, 2014 no. 2013 (Ne) 10043, 1, 65 <https://www.ip.courts.go.jp/eng/vc-files/eng/file/25ne10043full.pdf> [<https://perma.cc/JZJ7-NXL5>] (Japan).

143. Jacob Schindler, *Full Judgment in Huawei v Samsung Details Why Shenzhen Court Hit Korean Company with SEP Injunction*, IAM-MEDIA (Apr. 3, 2018), <https://www.iam-media.com/frandseps/full-judgment-in-huawei-v-samsung-details-why-shenzhen-court-hit-korean-company-sep> [<https://perma.cc/HV7L-H78W>].

144. *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. 14-341 at \*26 (C.D. Cal. Mar. 09, 2018)

145. See *id.* at \*21.

146. See *id.* at \*18–26.

147. See *id.* at \*13.

148. *Id.*

and the Comparable Licenses Approach were recognized.<sup>149</sup> The main difference; however, is that in *TCL v. Ericsson*, the Top Down approach was recognized as a principal method.<sup>150</sup> However, in *Unwired Planet v. Huawei*, the aggregate rate hinged on Comparable Licenses rates.<sup>151</sup>

In *Samsung v Apple*, the Intellectual Property High Court noted that major UMTS SEP-holders such as Nokia, NTT Docomo, and Ericsson had supported a total aggregate royalty rate of not more than 5%.<sup>152</sup> This rate was equally used to cap the total aggregate royalty burden.<sup>153</sup>

In the *Innovatio* case, the court isolated the average profit of a Wi-Fi chip as the portion of the value of a standard-compliant product available for paying royalties.<sup>154</sup> Determining out the average profit served the same purpose as setting a total aggregate royalty burden as the maximum amount available for paying royalties would stay unaffected, regardless of the number of entities holding and asserting SEPs to the standard.<sup>155</sup> As such, the approach sought to prevent the risk of excessive royalty stacking.<sup>156</sup>

## VI. THE COMPARABLE LICENSES APPROACH

The Comparable Licenses approach aims to determine a (F)RAND royalty rate with reference to similarly situated licensing transactions.<sup>157</sup> Its underlying reasoning is easily understood. The method seeks to determine a licensing rate with reference to other licensing rates.<sup>158</sup> This implies that licensing

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149. See *id.* at 20, 26; *Unwired Planet Int'l Ltd. v. Huawei Techs. Co. Ltd.* [2017] EWHC 711 (Pat), [37], [272].

150. See *TCL Commc'n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. 14-341 \*1, 3, 8 (C.D. Cal. Mar. 09, 2018).

151. *Unwired Planet Int'l Ltd. v. Huawei Techs. Co.*, [2017] EWHC 711 (Pat), [398].

152. *Samsung v. Apple*, Intellectual Prop. High Ct. May 16, 2014 no. 2013 (Ne) 10043, 1, 131 <https://www.ip.courts.go.jp/eng/vc-files/eng/file/25ne10043full.pdf> (Japan).

153. *Id.* at \*136.

154. *In re Innovatio IP Ventures, LLC Patent Litig.*, MDL 2303, 2013 WL 5593609, at \*40 (N.D. Ill. Oct. 3, 2013).

155. *Id.* at \*43.

156. See *id.* at \*38.

157. See, e.g., *Unwired Planet Int'l Ltd. v. Huawei Techs. Co.*, [2017] EWHC (Pat) 711 [170].

158. See *Communication Technology Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. 14-341 at \*1 (C.D. Cal. Mar. 09, 2018).

rates can be compared against each other. An important element of a comparable license is that it needs to be transparent. This is because without transparency, it is not possible to properly compare licenses against each other.

A comparable license can be highly probative as to what constitutes a reasonable royalty rate, as actual licenses can reflect the economic value of the patented technology in the marketplace.<sup>159</sup> The approach convinces through the simplicity of its underlying reasoning. In my experience as an expert witness, it can be fairly practical to use this method.

Within the U.S. context, this approach reflects some of the Georgia Pacific Criteria. It is worthwhile mentioning that the approach is in line with Georgia Pacific Factors 1, 2 and 5.<sup>160</sup>

Under the Comparable Licenses method, a (F)RAND royalty rate can be determined with reference to several previous licenses; provided such data can be found.<sup>161</sup> In *Microsoft v. Motorola*, this was done by taking a weighted average of multiple licenses.<sup>162</sup>

The insights gained through the Comparable Licenses approach are limited to encapsulating value by describing what others have done.<sup>163</sup> The approach is not able to make a statement about the cumulative royalty stack.<sup>164</sup> Such aspects can be better reflected through the Top Down approach.<sup>165</sup>

The usefulness of the Comparable Licenses approach may also be limited, if a supposedly comparable license was concluded on terms that were not (F)RAND. Proposed royalty

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159. *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 79 (Fed. Cir. 2012).

160. *See Georgia-Pacific Corp. v. United States Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970).

161. *See, e.g., Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*93 (W.D. Wash. Apr. 25, 2013) (discussing Motorola's previous licensing agreements). This can be explained by the fact that licensing agreements usually contain confidentiality clauses. This means that there is a lack of transparency in licensing markets and it is difficult to find comparable licensing agreements. *See, e.g., Joseph F. Aceto, Intellectual Property Licensing and Confidentiality Agreements, an Overview*, AM. MGMT. ASS'N (Jan. 24, 2019), <https://www.amanet.org/articles/intellectual-property-licensing-and-confidentiality-agreements-an-overview/>.

162. *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*99 (W.D. Wash. Apr. 25, 2013).

163. The method encapsulates value with reference to comparable rates. *See generally id.*

164. *Id.* at \*73.

165. *See id.* at \*237.

rates can hence be inadequate and will not allow for establishing a (F)RAND rate.<sup>166</sup>

Also important to note is that information asymmetry can adversely affect the usefulness of the method in a (F)RAND royalty rate determination.<sup>167</sup> This can be explained by the fact that the licensor and licensee have unequal access to potentially comparable licenses.<sup>168</sup> In particular, the Comparable Licenses approach favors the SEPs owner who has access to previous licensing transactions of its portfolio.<sup>169</sup> The downstream innovator does not have that same information and is hence put at a disadvantage.<sup>170</sup> Distorted access to evidence can also result in cherry picking those licenses which may be more favorable for one party over the other.<sup>171</sup>

Some of the limitations of this approach can be countered by adopting a complimentary valuation method that allows assessing issues that the methodology itself does not necessarily account for.<sup>172</sup> Therefore, it may require additional checks that allow for assessing whether or not a specific licensing rate is (F)RAND. In that respect, the Top Down approach allows for assessing a specific licensing rate in relation to the aggregate royalty burden a licensee may be facing.<sup>173</sup>

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166. See, e.g., *Ericsson, Inc. v. D-Link Sys., Inc.*, No. 6:10-CV-473, 2013 WL 4046225, at \*25 (E.D. Tex. Aug. 6, 2013) (noting that RAND licensing offers no guidance over what is reasonable).

167. See *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*13 (W.D. Wash. Apr. 25, 2013).

168. Jonathan D. Putnam, *Economic Determinations in “Frاند Rate” -Setting: A Guide for the Perplexed*, 41, *FORDHAM INT’L L.J.* 953, 999 (2018).

169. This can be explained by the fact that the SEPs owner always has access to the licensing deals it concluded, but a potential licensee does not have this same knowledge. The licensor protects such information as confidential information. Also licensing contracts are commonly kept confidential and subject to non-disclosure agreements. See, e.g., Aceto, *supra* note 161.

170. This follows from the arguments made before and is a logical deduction. The downstream innovator has knowledge over its sales and business structure, but not on the type of deals the licensor has previously concluded, unless they are obviously made public for one reason or another. However, in Europe this is rather unlikely to happen. See, e.g., Haris Tsilikas, *Comparable Agreements and the “Top Down” Approach to FRAND Royalties Determination*, *COMPETITION POLY INT’L* (July 21, 2020), <https://www.competitionpolicyinternational.com/comparable-agreements-and-the-top-down-approach-to-frand-royalties-determination/>.

171. Jonathan D. Putnam, *Economic Determinations in “Frاند Rate” -Setting: A Guide for the Perplexed*, 41, *FORDHAM INT’L L.J.* 953, 999 (2018).

172. See *supra* Part 6 (discussing the Top Down approach, which can offer complementary insights to the Comparable Licenses approach).

173. Additional checks are possible through the Top Down approach. See *id.*

*A. Application of the Comparable Licenses Approach  
by Courts*

Courts have used this method either as a primary way to determine a (F)RAND rate or as a sensitivity check.<sup>174</sup> In *Microsoft v. Motorola* and *Unwired Planet v. Huawei*, the Comparable Licenses approach was used as the primary method.<sup>175</sup> However, in *TCL v. Ericsson*, it was adopted as a complementary method to the Top Down approach.<sup>176</sup> In *in re Innovatio*, the court raised concerns about whether in the context of the case at hand it was possible to reflect the logic of apportionment through the Comparable Licenses approach, and instead, chose to use the Top Down approach as its primary method.<sup>177</sup>

The use of a comparable licensing rate may require some adjustments. This can be explained by the fact that licensing contracts can be heterogenous.<sup>178</sup>

Jurisdictional uncertainties associated with licensing rates can be priced into royalty rates as well.<sup>179</sup> It follows from the discussion above that such adjustments are undertaken so to enhance the comparability of a licensing rate.<sup>180</sup> One way to

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174. *Compare* *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*65 (W.D. Wash. Apr. 25, 2013) (“determining a royalty rate and range [by] consider[ing] possible comparable licensing agreements”), and *Unwired Planet Int’l Ltd. v. Huawei Techs. Co.*, [2017] EWHC 711 (Pat), 806 (explaining the comparable licenses approach should be used where available and is preferable to the top-down approach, which is “more useful as a cross check), *with* *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370, 2018 WL 4488286, at \*50 (C.D. Cal. Sept. 14, 2018) (treating both approaches as primary), and *In re Innovatio IP Ventures, LLC Patent Litig.*, MDL 2303, 2013 WL 5593609, at \*37 (N.D. Ill. Oct. 3, 2013).

175. *See* *Microsoft Corp. v. Motorola, Inc.*, No. C10-1823JLR, 2013 WL 211217, at \*65 (W.D. Wash. Apr. 25, 2013); *Unwired Planet Int’l Ltd. v. Huawei Techs. Co.*, [2017] EWHC 711 (Pat), [806].

176. *See* *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370, 2018 WL 4488286, at \*50 (C.D. Cal. Sept. 14, 2018).

177. *See In re Innovatio IP Ventures, LLC Patent Litig.*, MDL 2303, 2013 WL 5593609, at \*37 (N.D. Ill. Oct. 3, 2013).

178. *See generally* *TCL Commc’n Tech. Holdings, Ltd. v. Telefonaktiebolaget LM Ericsson*, No. CV 15-2370, 2018 WL 4488286, at \*41–88 (C.D. Cal. Sept. 14, 2018) (comparing different features of six “comparable” licenses); *see also* *Unwired Planet Int’l Ltd. v. Huawei Techs. Co.*, [2017] EWHC 711 (Pat), [174] (recognizing that comparables may contain different rates and are relevant as such).

179. *See id.* at \*25.

180. *See generally id.*

identify comparable licensing rates can be to make use of the rates of patent pools.<sup>181</sup>

In *Microsoft v. Motorola*, the Court states: “License agreements where the parties clearly understood the RAND obligation, and as discussed below, patent pools, will be relevant to a hypothetical negotiation for SEPs.”<sup>182</sup> Many patent pools are making their licensing rates and licensing contracts publicly available.<sup>183</sup>

There may be instances when a company has pursued only a bilateral licensing program, likely because it believed it would be able to obtain higher licensing rates through bilateral transactions.<sup>184</sup> This does not automatically disqualify a pool rate as a potential candidate for a comparable license. A pool rate can be adjusted to better reflect the issues at stake.<sup>185</sup>

In *Microsoft v. Motorola*, for example, the pool rate was adjusted as it was argued that contributors to the pool derive more than just licensing rewards from participating in a pool.<sup>186</sup> The court concluded that SEPs owners may benefit from more than just royalty revenues when participating in a patent pool.<sup>187</sup> In the case, Microsoft paid into the MPEG LA H.264 patent pool twice as much as it received in return.<sup>188</sup> Thus, it derived value from its pool participation, not only by obtaining licensing payments.<sup>189</sup> Hence, the court adjusted the pool rate.<sup>190</sup> Whether a pool rate can be used depends on the circumstances of the case.

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181. *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*20 (W.D. Wash. Apr. 25, 2013).

182. *Id.* at \*18.

183. See, e.g., *AAC License Fees*, VIA LICENSING (2021), <https://www.via-corp.com/licensing/aac/license-fees> (last visited Oct. 11, 2021); see also *Independent Economic Study Suggests HEVC Royalties Should Be Comparable to or Less Than Rates for AVC*, UNIFIED PATENTS (Jan. 9, 2019), <https://www.unifiedpatents.com/insights/2019/1/9/independent-economic-study-suggests-hevc-royalties-should-be-comparable-to-or-less-than-rates-for-avc>.

184. See Anne Layne-Farrar & Josh Lerner, *To Join or Not to Join: Examining Patent Pool Participation and Rent Sharing Rules.*, 29 INT’L J. OF INDUS. ORG. 294, 296 (2011).

185. See *Microsoft Corp. v. Motorola Inc.*, No. C10-1823JLR, 2013 U.S. Dist. LEXIS 60233, at \*82 (W.D. Wash. Apr. 25, 2013).

186. See *id.* at \*81.

187. See *id.*

188. See *id.*

189. See *id.*

190. See *id.* at \*99.

## CONCLUSION

With the emergence of the Internet of Things, the further spread of Artificial Intelligence, and the expansion of interconnectivity to spheres as widely apart as healthcare and mobility, it is highly likely that standards will further gain importance. Against this backdrop, shedding light onto the economics of (F)RAND is important. It not only helps enhance transparency and come to grips with (F)RAND, but it also serves as a baseline for educated business decisions.

It is beyond debate that (F)RAND royalty rates can be determined. Such calculations have been undertaken by courts around the world and have in my experience as an expert witness served as a blueprint for licensing negotiations and commercial arbitrations.<sup>191</sup> The question is hence not whether it is possible to determine a (F)RAND licensing rate, but rather, which method to apply for a (F)RAND royalty rate determination.

Cornerstone cases have encapsulated the notion of (F)RAND from an economic perspective and employed either the Top Down approach or the Comparable Licenses approach, or a combination thereof.<sup>192</sup>

In particular, the Top Down approach and the Comparable Licenses approach have emerged as principal methods for the calculation of (F)RAND royalty rates. As such, they have found application in landmark cases pertaining to (F)RAND disputes around the world. Often, these methods have been used in combination.<sup>193</sup> They can hence be considered court-recognized methods and be seen as the current ‘status quo’ in (F)RAND royalty rate determination. The insights gained through each of these methods concentrate on the questions they can best address.

Whereas the Top Down approach is concerned with determining an aggregate rate, the Comparable Licenses

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191. See *Strategic Considerations in Litigating FRAND Royalty Rates for Standard Essential Patents*, BAKER BOTTS (June 25, 2021), <https://www.bakerbotts.com/thought-leadership/publications/2021/june/strategic-considerations-in-litigating-frand-royalty-rates-for-standard-essential-patents> [https://perma.cc/6NE5-26Q8]; see also Jorge L. Contreras & David L. Newman, *Developing a Framework for Arbitrating Standard-Essential Patent Disputes*, 2014 J. DISP. RESOL. 23, 44 (2014).

192. See *supra* Table 1.

193. *Id.*

approach aims at establishing a royalty rate according to historical precedents. Used together, the Top Down approach and the Comparable Licenses approach have the potential to establish complementary perspectives on (F)RAND royalty rates.

Courts have often chosen between several methods for determining a (F)RAND rate. Different methods allow for encapsulating a (F)RAND rate through different perspectives. Taking these various angles together can offer a more comprehensive picture of what constitutes a (F)RAND licensing rate and can help counter potential shortcomings associated with using just one single method.

Whether to employ either of these two methods as a principal or secondary method needs to be assessed against the specific facts of a case. For example, one must understand the issues at stake, the particular question being addressed and assess the type of data that is available. The availability of data should also be considered when selecting a method to determine a (F)RAND royalty rate. In determining a (F)RAND rate, often one or two methods are used as the primary method(s), and another method is used as a cross-check.

As the licensing of standard essential patents expands beyond the telecommunications industry, it can be expected that courts will continue to make use of these two mainstream methods. In addition, a further amalgamation of these two prototypical approaches can be expected as well.



