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Standardisation Agreements and 5G Innovation: Safeguarding the balance assured by the current HGL[†]

This contribution supplements answers 3.01, 4.17, and 6.12, in response to the European Commission's questionnaire within the public consultation on the functioning of the two Block Exemption Regulations and the related Guidelines for horizontal co-operation agreements (HGL).

We appreciate the opportunity to submit our work and commend the European Commission for its commitment to encourage reflections on the implications of the standardization process for innovation and competition policy.

After an introduction about co-opetition in the 5G ecosystem and the balanced role played by FRAND arrangements under the current guidelines, this contribution addresses the meaning of 'third party access' to an industry standard and the risks brought by 'component' or 'multi-level' SEP licensing. We conclude by suggesting a small, but yet very relevant, amendment to the current Guidelines on horizontal cooperation agreements.

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I. Introduction

a) Co-opetition in the 5G ecosystem and the effective balance assured by the Competition Guidelines on horizontal co-operation agreements

1. The 5G ecosystem is based on an unprecedented connectivity boost and cooperative effort by all the stakeholders involved.
2. Cooperation and competition are both essential strategies to rely upon in order to fulfil the promises of 5G, thus the importance of the hybrid concept called "co-opetition". There are wide areas where cooperation is essential in order to prevent both under- and over-investments and to stimulate the emergence of standards and interoperability, generating the economies of scale, scope and density needed to recoup large sunk investments.
3. Cooperation is needed both at horizontal level (as in the case of generating and selecting standard essential patents) and at vertical levels (as in the case where investments need to be tailored to specific industries' needs). At the same time, competition needs to be preserved at any level where there is no risk of over-investments, duplication of

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infrastructures and rent dissipation. As a matter of fact, a world of 'efficient standards' increases competition and innovation to the benefits of citizens and final consumers. Indeed, co-opetition relies on the complementary role of competition and cooperation in enhancing total (social and societal) value and need a light-handed regulatory approach minimising risks of forcing cooperation when competition is socially desirable, on one side, and forcing competition when cooperation is needed, on the other side.

4. It is hence crucial to craft and nurture an institutional environment where co-opetition is well designed both horizontally and vertically, i.e. where appropriate incentives towards cooperation and competition are introduced to boost innovation and encourage new business models and services and avoid the risk of inhibiting a successful deployment of 5G technology.

5. Standards are among the most important and at the same time fragile pillars of the modern global tech-economy and 5G ecosystem. They facilitate the creation and integration of markets, foster positive network externalities, reduce uncertainty in the marketplace and lower costs and prices for downstream products. Complying with standards is an unavoidable choice for a vast number of manufacturers and follow-on developers. At the same time, standards are constantly exposed to moral hazard, agency costs and legal uncertainty which can undermine their functioning and jeopardize innovation. On top of this, many of the technical features and properties enshrined in standards are covered by intellectual property rights (IPRs).

6. In this respect it is important to take stock of the role played by Standard Developing Organizations (SDOs), and Standard Essential Patents (SEPs) in the development of 5G and IoT ecosystem. SDOs and SEPs are supposed to play a key role in ensuring a smooth interplay between patents and standards. Indeed, innovation needs both a sustainable and efficient standardisation process and a balanced licensing environment. SDOs are crucial in ensuring the smooth implementation of standardization and avoiding moral hazard tactics and opportunistic behaviours throughout the value chain. SDOs perform three main functions: (i) they identify and unlock the value of various combinations of functionalities (discovery/ innovation function); (ii) they select specific technological options and steer market players towards the systematic adoption of a particular technology (standardization/cooperation function); and (iii) they require the owners of patents covered by the standard to grant licenses on fair, reasonable, and non-discriminatory (FRAND) terms (regulation/pro-competitive function).

7. So far, European Guidelines has performed well by generating a balanced legal framework where the benefits of cooperation are backed by competition safeguards such as FRAND commitments. Incentives for investments by manufactures and producers of SEPs have been based on the balance between flexibility and legal certainty granted also by the Guidelines: autonomy in negotiating over FRAND terms and over the level of licensing.

8. The 5G complexity shows how a complementary innovation backed by SEPs may spread all over an entire ecosystem creating a global societal value which is the result of both business tradeable values and positive economic externalities. In this respect, the societal and economic value of the patented idea that created an entire new ecosystem is very difficult to ascertain and quantify, precisely because many positive externalities do

emerge that do not pass through market prices and market exchanges. Moreover, the many vertical and horizontal uses in the 5G environment further magnify the complexity of the industry and product value chain. So far, the mechanism, compatible with the Guidelines and based on bargaining FRAND royalties over end-user's products, has allowed to generate a viable proxy of the much bigger global market value generated by SEP holders' investments. This proxy value, based on the value created by the final demand for end-user's products whose access is essential for the great part of connectivity services, in any case underestimates the real global value generated by the new technology introduced by SEP holders' investments. The portion of this proxy value that is captured by a royalty fee is the result of parties' bargaining power on the one side and FRAND commitments on the other.

9. All in all, this mechanism has generated so far balanced incentives to invest in complementary technologies, engage in efficient standardisation process and ensuring effective access to the standard. Therefore, the approach and rationale underlying the current Guidelines should be maintained and we suggest only an ameliorative textual amended, proposed in the conclusion of this paper, according to the lines and motivations developed in the following sections.

b) FRAND as a SEP negotiation process.

10. The rationale for FRAND commitment derives from the fact that negotiations between SEP holders and implementers generally take place only after the implementers have used the technologies covered by SEPs and have done investments to comply with the standard. The primary purpose of FRAND commitments is to prevent SEPs holders from demanding excessively high royalties, a practice that has been defined 'patent hold-up', when implementers are already locked into a standard.

11. Courts, antitrust authorities, and policy makers across the world have been concerned by the effectiveness of the FRAND arrangements, because of the possible strategic use of SEPs, with reference to the amount of FRAND royalties to be paid, within ex-post litigation actions. However, these concerns proved to be overestimated, as there is no empirical evidence of structural and systematic problems of holdup and royalty stacking affecting SEPs licensing.[1] Further, reverse holdup and hold out –i.e. opportunistic refusals to agree on royalties *vis-à-vis* FRAND-encumbered patent holders– is equally

[1] Denicolò, V., D. Geradin, A. Layne-Farrar, and J. Padilla (2008), "Revisiting Injunctive Relief: Interpreting eBay in High-Tech Industries with Non-Practicing Patent Holders," Journal of Competition Law and Economics 4:571; Egan, E. and D. Teece (2015), "Untangling the Patent Thicket Literature," Working Paper; Epstein, R.,S. Kieff and D. Spulber (2012), "The FTC, IP, and SSOS: Government Hold-up Replacing Private Coordination," Journal of Competition Law and Economics 8:1; Gerardin, D. and M. Rato (2008), "Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of Frand," European Competition Journal 3:101; Geradin, D., A. Layne-Farrar and J. Padilla (2008), "The Complements Problem Within Standard Setting: Assessing the Evidence on Royalty Stacking," Boston University Journal of Science and Technology Law 14:144; Galetovic, A. and S. Haber (2017), "The Fallacies of Patent Holdup Theory," Journal of Competition Law & Economics 13:1; Galetovic, A., S. Haber, and R. Levine (2015), "An Empirical Examination of Patent Holdup." Journal of Competition Law and Economics 11:549; Layne-Farrar, A. (2014), "Patent Holdup and Royalty Stacking: Theory and Evidence, Where do We Stand after 15 Years of History?" OECD Report; Sidak, G. (2019), "Misconceptions Concerning the Use of Hedonic Prices to Determine FRAND or RAND Royalties for Standard-Essential Patents," The Criterion Journal on Innovation 4:501.

worrisome[2]. By engaging in such practices, implementers may escape the payment of royalties or depress prices and, ultimately, exacerbate litigation and reduce incentives to invest in standard related innovations. Hence, holdup and reverse holdup are two sides of the same coin. They both arise in licensing relationships characterized by significant information asymmetries, agency costs and legal uncertainty associated with patent enforcement. Therefore, FRAND pledges build on a twofold economic rationale as they should be meant to address at the same time both economic issues.[3]

12. As a matter of facts, national courts have recently acknowledged that reverse hold-up or hold-out is not a hypothetical concern. In *Unwired Planet* the English courts highlighted that FRAND commitments are not only meant to address holdup problems, but also to strike a fair balance between the conflicting interests of licensees and licensors.[4] Namely, FRAND commitments must ensure a proper reward for innovation, avoid holdup, and prevent holdout. In the same vein, the Court of Appeal of The Hague detailed the tactics deployed by the defendant in order to avoid taking a license and stated that, because of implementer's unwillingness, the SEP holder was not obligated to make a FRAND-offer.[5] Finally, in its Communication 'Setting out the EU approach to Standard Essential Patents', the European Commission argued that, with respect to the security to be provided by the SEP user as protection against an injunction, the amount should be fixed at a level that discourages patent hold-out strategies.[6]

13. The CJEU decision in *Huawei* represents the most significant attempt to provide a framework for good faith negotiations.[7] In order to strike a fair balance between the interests involved, the CJEU has identified the steps with patent holders and implementers have to follow in negotiating a FRAND royalty. In this regard, the Court has shown a preference for FRAND determination in the context of negotiations between patent holders and infringers, using the threat of antitrust liability and patent enforcement as levers to discipline both parties in order that they converge towards a mutually agreeable FRAND royalty level. Indeed, parties to a SEP licensing agreement are in the best position to determine the most appropriate terms to their specific situation, hence the FRAND-finding process must rest on negotiation in order to take into account the individual interests of the parties and thereby indirectly also to safeguard both the innovation incentive provided for by patent protection and the dissemination/diversification incentive resulting from open standardization.

14. Despite a violation of a FRAND pledge essentially amounts to a breach of contract and stems from contractual incompleteness at the time of standardization, the schism between holdup and reverse holdup theories has fueled the debate about the antitrust relevance of FRAND commitments. However, once acknowledged that holdup is not a systemic

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[2] Nicita, A. and G. Corda (2017), "That's What Frands Are For": The Antitrust Boundaries of the Patent Holdup Problem," Competition Policy International, November.

[3] Borgongo, O. and G. Colangelo (2019), "Disentangling the FRAND conundrum", DEEP-IN Research Paper, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3498995.

[4] *Unwired Planet International Ltd. v. Huawei Technologies Ltd.* [2017] EWHC 711 (Pat), paras. 92 and 95, confirmed by the Court of Appeal [2018] EWCA Civ 2344, para. 28. See Colangelo, G. and G. Scaramuzzino G. (2019) "Unwired Planet Act 2: the return of the FRAND range", European Competition Law Review 40:306.

[5] *Koninlijke Philips N.V. v. Asustek Computers Inc.*, (2019) C/09/512839 / HA ZA 16-712, para. 4.180.

[6] COM (2017) 712 final, 10.

[7] CJEU (2015), Case C-170/13.

problem in the context of SEPs, there is no convincing reason for laying down an exceptional antitrust treatment for FRAND-encumbered patents.

15. So far, the Guidelines have assured an appropriate balance between innovation and competition policies, provided that the latter stays true to its core goals, rather than being unduly stretched to target all possible issues affecting SEP licensing.

16. Nevertheless, as long as arguments against the risk of hold-up under FRAND commitment revealed to be weakly grounded, a new field explored by some implementers in order to renegotiate downward any FRAND price is based on a shift from the 'excessive FRAND price' argument to the level of the value chain at which licensing has to take place (for example, component level versus end-user device level).

II. The meaning of "third-party access" to an industry standard and the risks brought by 'component' or 'multi-level' SEP licensing.

17. Some concerns have been raised, recently, especially by new implementers in industries interested by 4G and 5G digital connections, on the appropriate "level" of SEP licensing. These concerns recall somehow the issue of alleged hold-up by SPE holders versus 'reverse hold-up' by implementers, as it attributed to the choice of the level of licensing a risk of "over taxation" claimed by implementers when licensing is defined at the price of the end product, and the risk of "under reward" outlined by SEP holders for smaller or 'component' levels of licensing.

18. From an economic point of view, after all, the debate over the level of licensing is just another way to attempt to renegotiate downward FRAND prices. Indeed, claimants of 'over taxation' believe that a large royalty fee based on the price of the end product may over-burden the licensee. On the other side, SEP holders claim that a small royalty fee based on lower levels, such as the smallest saleable patent practicing unit (SSPPU), would generate 'under reward' as it may not properly reflect the technological contribution of a SEP and thus the reward needed by SEP holders for their contribution to the value of the end product.[8]

19. There are strong legal and economic rationales suggesting that the level of licensing should be unique and that the choice over the level of licensing should be an outcome of the standardization process within the SDOs.

20. First of all, typically, IPRs owners are constrained by the 'doctrine of exhaustion' which prevents them from licensing a patent to each possible player down the value chain. Hence, they choose the level of the vertical chain at which licensing occurs. Right holders, by relying on the right to discriminate by field of use, are typically free to decide at which point of vertical chain the patent licensing occurs, basing their decisions on the best way to internalize the externalities generated by the standard, to recover of R&D expenses, and to minimize ex-post bargaining and transaction costs. This is true also for SEP holders. Given the 'doctrine of exhaustion', SEP holders' rationally choose the level of licensing taking into account transaction and bargaining costs on the one side, as well as the proxy market value, over which setting the royalty rates, so as to internalize all the

[8] Li, B.C. (2016), "The global convergence of FRAND Licencing Practices", Berkeley Technology Law Journal 31:429.

positive externalities generated by the standard for the society as a whole. The essentiality of patent for the standard has nothing to do with the choice of the level of licensing and, in this respect, there is no difference between general IPRs and SEPs. What differs for a SEP's holder is the necessity to implement FRAND licensing terms, once the level of licensing has been chosen within the SDO process.

21. In principle, in a world of zero transaction costs (with no uncertainty and complete contracts) the efficient remuneration of the SEP, that is the portion of the economic and societal value generated by a standard, which SEP holders should have the right to appropriate, would be independent of the level of licensing. In fact, in a world of positive transaction costs and incomplete contracts, as the one that characterizes innovation and SEP holders' investment decisions, the ex-ante selection of a specific and unique level of licensing performs the target to simplify the negotiation process and to minimize transactions costs. Moreover, it should be reminded that the correct constraint on SEP holders' bargaining power on license pricing is already provided by the FRAND commitment that works at the licensing level decided within the standardization process. FRAND commitment is the measure that has been designed precisely to prevent the risk of SEP holders' hold-up. Thus, beside the constraints imposed by the doctrine of exhaustion, any attempt to opportunistically endogenize the level of licensing by some implementers, should be seen as an improper way to gain ex-post downward renegotiation of FRAND-based access prices, and thus as a way to introduce further disproportionate burden on SEP holders' freedom to negotiate within the SDO, beside the FRAND commitment constraint.

22. As far as ICT is concerned, there are good reasons why the industry practice endorses licensing at the device-implementer level. First of all, the device best reflects the value created by the patent, as that value is related to (and capped by) the difference between the willingness to pay of the devise consumers and all other device production costs, regardless of the level of licensing.[9] Further, most SEPs involve the whole spectrum of devices functioning, rather than individual components.[10] In fact, end-user devices are commonly used as royalty base across the ICT industry in order to reduce monitoring and verification costs.[11] According to sound economic reasoning, licensing at the end-device level allow patented technologies that read on the entire final article not to be limited in scope by individual components.[12] Moreover, it cannot be overlooked transaction cost inefficiencies arising from a mandatory 'multilevel licensing.' As clearly stated by the European Commission in its Communication 'Setting out the EU approach to Standard Essential Patents', "[t]ransaction costs relating to the negotiation of a license should be kept to the minimum necessary."[13]

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[9] Galetovic, A. and S. Haber (2019), "SEP Royalties: What Theory of Value and Distribution Should Courts Apply?", https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3447641.

[10] Putnam, J.D. and T. Williams (2016), "The Smallest Salable Patent-Practicing Unit (SSPPU): Theory and Evidence", https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2835617.

[11] Layne-Farrar, A. and K.W. Wong-Ervin (2015), "An Analysis of the Federal Circuit's Decision in Ericsson v. D-Link", CPI Antitrust Chronicle.

[12] Padilla, J. and K.W. Wong-Ervin (2017), "Portfolio Licensing to Makers of Downstream End-User Devices: Analyzing Refusals to License FRAND-Assured Standard-Essential Patents at the Component Level", The Antitrust Bulletin 62:494.

[13] COM (2017) 712 final, 7.

23. Finally, the idea of component or multi-level licensing would constitute a special case of implicit hold-out or reversed hold-up by implementers, as it would push price negotiations into a level of the value chain that would not have been chosen ex-ante by the SEP investors, prior to investment, and by SDOs in the standardization process.

24. The reason for deviating from what has been defined within the SDO is not a technical one, and it is not related to the standardization process. Yet, the idea of multi-level licensing or component level licensing seems to be driven exclusively by an attempt to influence price setting on licenses by imposing a sort of 'menu of vertical prices' on SEP holders, so as to choose the most inexpensive level, which would not most likely be the efficient one (i.e. the one that would have been chosen ex-ante).
25. This would also result in an inefficient overhaul of the balanced approach defined by the current Guidelines, where prices are governed by means of FRAND commitments for SEP holders, which are ultimately aimed "to ensure effective access to the standard" (not only to the SEP in itself) and "to prevent IPR holders from making the implementation of a standard difficult" (paras. 285 and 287). On the contrary, the multi-level licensing or component level licensing, diverging from the level of licensing defined within the SDO, would ultimately result in an obstacle to the smooth implementation of the standard.

26. Indeed, a sort of multi-level or SSPPU licensing would result in an extraordinary rise in transaction costs as it would force the creation of 'artificial' segmented markets, along the value chain, and would generate the issue of establishing a virtual 'market price' for each single level for the same non-divisible input, raising the issue of proportionality and coherence among different segmented markets for the same product.

27. In a sense, as it has been outlined, this could be an attempt to endogenize the level of licensing with the aim to endogenize (and minimize) the price to be paid for accessing the SEP, at any level of the value chain, notwithstanding the FRAND provision.[14] Indeed, as the level of access is reduced to the smallest component or the smallest level of licensing, it might result impossible for the SEP holders to adequately remunerate their investments and the patent value from that component or level, as that value would turn to be capped by the specific demand for the component, regardless of the added valued of the component incorporating the patent generates on further levels. This is probably the reason why some implementers claim to prefer a narrow royalty base and therefore push for mandating upstream licensing (e.g. the chip-making level rather than device-implementer level).

28. As said, this is a motivation based ultimately on the idea of using the 'level of licensing' argument as a tool to influence or opportunistically renegotiate the price of the SEP rather than on a real issue of a denied access (or constructive refusal to deal). Again, it should be stressed that the appropriate and balanced tool that the Guidelines have outlined as a constraint on SEPs' licensing prices is the FRAND commitment and not the level of licensing.

29. Besides, the multi-bargaining and multi-level scenario would expose SEP holders to augmented and multiplied risks of hold out or reverse hold up, lowering the probability that SEP holders may recoup an appropriate portion of the societal, economic and

[14] Galetovic and Harber, *supra* note 9.

systemic value that a given standard generates and thus inhibiting incentives to invest in essential patent under the FRAND paradigm.[15] Multi-level licensing would introduce incentives to free ride on SEP holders' counterparts along the value chain, as each buyer at each level would try to extract some rent to the other in accessing the same product. In other words, bargaining on one level may create positive or negative externalities on other levels of licensing, making a menu of 'vertical' prices for each level, for the same input. This would unavoidably produce an incoherent and inefficient outcome, as any attempt to apportion value of an input must take into account consumer demand for the final product and the payments to all other inputs across the entire production chain.[16] Finally, this would exacerbate the risk of litigations plus would create incentives for inefficient arbitration and augmented double marginalization phenomena

30. Multi-level licensing would generate not only new unjustified transaction costs but also it would introduce incentives to pass on other levels along the value chain and then on final users the extra costs. On the contrary, the current practice internalizes externalities and allows the SEP holders to capture a portion of the total value generated under the FRAND royalties constrain.

31. Indeed, issues like the efficient level of licensing and pricing for strategic 5G inputs protected by SEP in verticals are crucial in order to maintain the right incentives to invest on standards. It would be a mistake to define the level of licensing as a strategy to fragment the economic value of SEP, a scenario which would be detrimental especially for European innovation in 5G.

32. The concerns raised by 'new' implementers, especially in industries interested by 4G and 5G digital connections, seem suggesting that licensing to the end product may create some difficulties due to a lack of implementers' expertise.[17] Namely, car manufacturers or makers of industrial robots increasingly include remote digital feature into their products and this requires conformity with some standards, however these digital components represent a small share of the value of the end product. Some implementers claimed they have little expertise in the related technical fields and that it might be hard for them to obtain a fair deal with telecom SEP holders who license directly to them rather than to their suppliers, engaging in discriminatory practices. These arguments seem weakly grounded as based on a fundamental misunderstanding on the relevant notion of discrimination in this context.

33. Some new implementers have indeed suggested that the idea of a mandatory multi-level licensing upon SEP holders would be actually supported by the European Guidelines. In particular, this would be allowed by a novel interpretation of paragraph 285, as stating that SDO participants wishing to have their patent rights included into a standard should

[15] Galetovic and Harber, *supra* note 9, also showing that the highest is the level of licensing, i.e. next to the end user product, the higher is probability that SEP holders may recoup an appropriate portion of the societal, economic and systemic value that a given standard generates.
[16] Galetovic and Harber, *supra* note 9.
[17] Charles River Associates (2016), "Transparency, Predictability, and Efficiency of SSO-based Standardization and SEP Licensing", Report for the European Commission, https://ec.europa.eu/growth/content/study-transparency-predictability-and-efficiency-sso-based-standardization-and-sep-0_en, 77.

provide an irrevocable commitment to offer to license their SEPs "*to all*", meaning "to *any* third party", along the market value chain, on FRAND terms.

34. However, this interpretation seems not to be consistent with the comprehensive approach defined in the Guidelines.

35. First, the level of licensing is not a decision external to the standardization process, but it is, rather, the result of the negotiations occurring therein. There is no such thing as an ex-ante definition of a SEP, and then an ex-post decision on the level of licensing, once a SEP has been established. The definition of a standard and the level of licensing go hand in hand with the approval of a SEP. This means that it is the result of negotiations where participants' incentives are balanced in equilibrium. Thus, it makes no sense to deviate from the SDO's decision on the appropriate level of licensing that ultimately yields to a SEP.

36. Moreover, as far as the FRAND commitment is concerned, the Commission, in its recent Communication 'Setting out the EU approach to Standard Essential Patents', has clarified that the non-discrimination element of FRAND indicates that right holders cannot discriminate between implementers that are "similarly situated."[18] In this respect, by referring to "all third parties", the Guidelines clearly refer to all "similarly situated" third parties, which means situated at the licensing level previously decided within the standardization process. It is clear that component manufacturer and end-user product providers are not similarly situated. This approach is consistent with the general prohibition of discrimination by dominant undertakings under Article 102(c) TFEU.[19]

37. Secondly, an interpretation of "access to all third parties" as "*any* other third party" along the market value chain would clearly introduce an unjustified regulatory constraint that would go well beyond the principles stated in paragraph 277 of the Guidelines. The idea of having a sort of "neutral level" of access to an essential input falls outside of the scope of the Guidelines. It is rather an idea that, to some extent, has been introduced in totally different regulatory environments subject to sector-specific regulation as liberalized network industries previously monopolized by a vertically-integrated incumbent operators , owners of upstream essential facilities and active at the downstream level (e.g., the European electronic communications markets).

38. The principle of "technological neutrality" applied to some of those industries, introduces actually asymmetric regulation as it allows any entrant (or any third party) at any level of the value chain (and of the essential facility) to choose *à la carte* the kind of unbundled inputs they would need in order to enter and compete in the downstream market against the vertically integrated incumbent, and choosing accordingly also the investment level in their own facilities (a practice known also as 'splintering'). In those cases, however, the pro-competition principle is based, on the one side, on the vertically integrated nature

[18] *Supra* note 13, 7.

[19] Jones, A. and R. Nazzini (2019), *The Effect of Competition Law on Patent Remedies*, in Patent Remedies and Complex Products: Toward a Global Consensus (Biddle B., Contreras J.L., Love B.J., Siebrasse N.V., eds.), Cambridge University Press, 227. See also Borghetti, J.-S., I. Nikolic, and N. Petit (2020), "FRAND Licensing Levels under EU Law", https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3532469.

of the owner of the essential facility active in both upstream and downstream markets; and, on the other, it is based on the economic modularity and divisibility of the essential inputs whose access is demanded. In other terms, in those industries, the different levels of access provide different kind of inputs (having a different economic value in itself), leading to a menu of coherent prices along the ladder of investments.

39. Furthermore, in those industries, the non-discrimination obligations upon the vertically integrated owner of the essential inputs mean that the same input (available at only one level) must be made accessible to different companies (including the downstream divisions of the incumbent itself) at the same conditions. Whereas, there is never the case of the same non-divisible input made available at different levels and charged at different prices. In other words, the access price of the same input is not affected by the dimension of access seekers or by the level of the value chain at which they operate.

40. Even in industries previously monopolized by vertically integrated companies, where regulatory access to an essential input is referred to *any* third party, there is no such a provision of granting the same access to the same non-divisible input at any level of the value chain. For each level, there is, at most, a different bundle of (divisible) inputs. Thus, also in those industries, the nondiscrimination obligation applies to parties accessing the same level of unbundled inputs thorough a menu of coherent prices for each unbundled input. In any case, as it has been clarified in the *Bronner* decision,[20] even in industries where the incumbent is a vertically integrated owner of an essential facility, there is not a right of access by *any* potential entrant at any level of the value chain, as some of these 'levels' could lack the appropriate interest or dimension to gain that right to access.

41. As a consequence, interpreting paragraph 285 as if *any* third party at *any* level of the value chain would be *per se* entitled to gain access to the particular non-divisible input represented by a SEP, would clearly constitute an unjustified deviation from standard antitrust approach to essential inputs. A SEP is not an essential facility owned by a vertically integrated incumbent in a liberalized market. And it is not a divisible bundle of inputs that could be splintered and unbundled at each level of the market value chain (or level of the essential facility) in order to allow customized entry.

III. Conclusions

42. The definition of the level of licensing is part of the standardization process, thus SDOs participants have agreed on the efficiency of such a setting and specific investments are made to implement it.

43. Claiming equal access at different levels of the value chain to the same non-divisible input by any third party, independently of the licensing level determined within the standardization process would be detrimental for the SEP holder and ultimately for the standardization itself.

[20] CJEU (1998), Case C-7/97.

44. Indeed, interpreting access to all third party as access to *any* third party along the value chain of the industry, would mean imposing, in fact, unjustified, and disproportional and inefficient constraints on horizontal cooperative agreements involving 5G chipset and equipment producers. This may, in turn, strongly affect the evolution of cooperative investments and may introduce adverse incentives to transform the nature of the innovation in the industry from SEP-oriented to IP-based standard, with detrimental effects on the digital ecosystem and ultimately on final consumers.

45. For the above reasons we suggest to amend paragraph 285 of the Guidelines stating that participants wishing to have their patent rights included in a standard should provide an irrevocable commitment to offer to license their SEPs on FRAND terms to all "similarly situated" third parties, i.e. "situated at the same licensing level defined in the standard". Thus, a suggested reformulation of paragraph 285 would be as follows:

46. "*…to offer to license their essential IPR to all* ***eligible*** *third parties,* ***similarly situated at the licensing level defined in the standard****, on fair, reasonable and non-discriminatory terms ('FRAND commitment')".*

47. This would be consistent with antitrust principles and the FRAND commitment interpretation provided in its recent Communication 'Setting out the EU approach to Standard Essential Patents', and would prevent space for opportunistic behavior, reverse hold up, and inefficient investment decisions.