Patents and Standards: A modern framework for standardisation involving intellectual property rights

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Main fields of business activity: Qualcomm Incorporated is a world leader in 3G, 4G and next-generation wireless technologies. Qualcomm Incorporated includes Qualcomm's licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm's engineering, research and development functions, and substantially all of its products and services businesses, including its semiconductor business, QCT. For more than 25 years, Qualcomm ideas and inventions have driven the evolution of digital communications, linking people everywhere more closely to information, entertainment and each other.

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Introduction

1. Qualcomm Inc. welcomes DG GROWTH's efforts to gather information on the interplay between standardisation and intellectual property rights. As the consultation document notes, standardisation facilitates the rapid diffusion of technologies, interoperability and compatibility between products. Patents are also, correctly, recognized as important for successful standardisation because they often concern technology that is best suited to be standardized. As such, rules and practices have been developed to "ensure the efficient licensing of patents on technologies that are included in standards", while also providing incentives for research and development, the contribution of patented technology to standards, and the transfer of such technology through licensing that allows patent holders to receive proper compensation for their inventive investments. In fact, patents are the cornerstone of open standards, as patent protection enables companies to share their technology in collaborative standards development, safe in the knowledge that their investments in developing the technology and participating in standards development are protected.

2. Such balance is critical. Participation in standardisation activities is voluntary and needs to be encouraged as the process for developing standards is risky, complex and dynamic. It brings together firms and other participants with different business interests and different business models on the premise that, if technology solutions can be collaboratively developed and standardised with the consensus support of those with varied interests, the standard will find the broadest level of marketplace acceptance.

3. As wireless connectivity continues to expand across many industries, significant investment will be needed to develop the technology innovations required to support this growth and fulfil the objectives of the European Digital Single Market (DSM). If companies are to bear the risk of investing billions of Euros to develop the technologies that are needed and contribute those valuable technologies to standards, investors will need a fair and reasonable return for it.

4. Accordingly, any change to standardisation rules, policies or practices must retain the balanced approach that is currently reflected in many standard setting organizations (SSOs), in particular ETSI, and, importantly, must not undermine the elements of successful standardisation that this is key for the development of the European Digital Single Market. Rules must continue to encourage participation in standardisation activities by all interested stakeholders and avoid reforms that favour one set of interests over another, including by creating even the risk that important rights and interests of participants will be compromised. This includes, critically, the rights of patent holders

who are now incentivized to contribute their patented technology for standardisation, and to license such technology broadly on terms that compensate for the risky and often times unsuccessful investments that are required to develop the patented technology in the first instance, or that are made to develop technology for standards that fail to gain marketplace success.

5. Given the breadth of the consultation, we have focused on those issues that we deem important, rather than the full array of issues presented in the consultation. We would be pleased to provide more focused arguments and data on those issues which the Commission may identify as deserving further discussion. With this background, Qualcomm offers the following comments.

    1) As a preliminary matter, we first note that the consultation documents do not suggest that the current framework governing standardisation inadequately "reflects the requirements of all stakeholders," or is unable to "adapt to a constantly evolving technological and business context." Nor should any suggestion be considered given the objective record showing that standardisation has been extremely successful. [1]

    2) Further, it is critical that the consultation avoid any anti-patent bias. This too is critical if the required balancing of interests that is at the foundation of successful open standardisation is to be maintained. Here, however, we note some points of concern.

        - First, the European Commission study, '*Patents and Standards: A Modern Framework for IPR-based Standardization*' that is the background to the consultation, contains significant flaws in its objectivity and methodology. It states as its purpose *'identifying barriers for efficient licensing of SEPs and on possible solutions to these barriers.'* But, rather than attempting to do so based on objective quantitative and qualitative data, the Study starts off by assuming a problem in Standards Essential Patent (SEP) licensing, focusing on a long list of concerns[2] (that are often controversial and at times even unsound), providing no proof that under the current system efficient SEP licensing or effective standardization activities has been in any way deterred, while ignoring contrary evidence showing the success of current standardisation efforts. Further, the Study relies upon data gathered using questionable methodologies including interviews with 'representatives' stakeholders, that do not reflect the views of a full cross-section of interests, and which is too small to provide any statistically significant information from which meaningful conclusions can be drawn. Instead of first gathering evidence from observable market developments or data, and

[1] For a collection of data relating to market trends in the SEP context, see http://ipfinance.blogspot.co.uk/2015/02/closing-time-for-open-standards-and.html

[2] The Study identifies risks including, over-inclusion of patented technologies in standards; substantial transaction costs; stacking; patent hold-up or ambush; information asymmetries disadvantaging implementers; bundling of SEPs and non-SEPs; and conditioning availability of SEPs to cross-licensing of non-SEPs.

then making a balanced assessment to determine if there are market failures or barriers to effective standardisation (and what the magnitude may be), the Study begins with a preconceived notion of a problem, seeks non-representative data to support that notion, and then suggests a series of 'solutions' without assessing the potential impact of those solutions on the efficiency of European standardisation.

- Second, the consultation document itself reflects the same bias by implying that patents and patent licensing is an obstacle to effective standardisation and innovation. For example, question 1.1.4 asks whether standardisation involving patents contributes to innovation and the uptake of new technologies, while question 1.2.1 asks whether standards include too many patented technologies. Of the various examples one could cite of standards failing to achieve commercial success, these do not fail due to IPR rules or patent licensing. [3]

6. That the Study and the consultation document may be read to reflect such an anti-patent bias is also inconsistent with the continuing dialogue over the past decades among standards participants regarding the impact of patented technologies in a standards. This dialogue has raised many issues - including those identified in the Study, but there is little, if any, empirical evidence showing that the system is not flourishing. Most recently, expert evidence was sought for an OECD roundtable on Intellectual Property and Standard Setting. In her paper entitled '*Patent Hold-up and Royalty Stacking Theory and Evidence: Where do we stand after 15 Years of History?*'[4] Dr Anne Layne Farrar concluded that '*… there is no evidence that either holdup or royalty stacking emerges in practice in anything more than isolated instances'* noting that '*With 15 years and counting of history, it is not unreasonable to expect several solid, concrete examples of holdup and stacking for interoperability standards*'. Yet not finding any evidence raises serious questions about the impact of any policy 'fix'. This especially true given how successful standardisation has been to date and, importantly, how standards organisations have been able to address concerns through updating their rules (e.g. requiring timely disclosure of patented technologies likely to be essential to practicing a standard or to ensure that that the FRAND commitment transfers when a SEP changes ownership).

7. In addition, over time, the understanding of the standardisation process has evolved and a greater recognition of the nature of hold up and reverse hold up (or 'hold-out') has

[3] For example, one could cite the recent limited commercial deployment of Mobile WiMAX (IEEE 802.16e) as against its rival LTE; and almost no commercial deployment of WiMAX 2 (IEEE 802.16m) in the face of LTE-Advanced; or Mobile Broadband Wireless Access (IEEE 802.20) developed as a competitor to WiMAX but which did not see commercial deployment; or the failure of Digital Video Broadcasting for handheld devices (DVB-H) because, despite the fact that the technology was launched with support from the European Commission, market take-up did not occur.

[4] '*Patent Hold-up and Royalty Stacking Theory and Evidence: Where do we Stand after 15 Years of History?*' by Anne Layne Farrar, presented at the OECD Competition Committee Roundtable on Intellectual Property and Standard Setting, 18 December 2014 (DAF/COMP/WD(2014)84. Unclassified.

occurred. Such enhanced understandings have also arisen as the result of court decisions relating to the FRAND commitment. Indeed, courts have a central role in arbitrating between competing claims in the event of dispute, involving whether either licensors or potential licensees are acting consistent with their obligations to engage in good faith negotiation of FRAND terms. With respect to a SEP holder, it may only 'impose' FRAND terms where a court so agrees. A potential licensee, however, may avoid taking a license and continue infringing a SEP throughout a FRAND-focused litigation, thus delaying the ability of a SEP owner to protect its rights. It is therefore critical to understand the role that the courts play and it is unfortunate that the consultation document does not request data on this, as data shows that, for example, injunctions for FRAND encumbered patents are very rarely granted (and in the few instances here they have been, the courts have taken into account the position of both parties).

8. Understanding the role of courts is also important because it appears that the context for the consultation is partly the so-called 'smartphone patent wars', which saw significant litigation between various players in that sector. Three critical points need to be understood in this regard. First, these disputes involved many rights (e.g. utility patents, non-essential patents, software patent in the US) of which SEPs formed only a small part. A recent exhaustive study of US litigation[5] in the smartphone sector shows that "*that the litigation in the smart phone industry is primarily driven by patents that are not related to the standards, i.e., on implementation or design specific features of mobile devices. Moreover, litigation outcomes are driven by patent quality rather than the type of patents (SEPs or not)".* Concerns about SEPs and smart phone litigation need to be examined empirically prior to proposing policy measures. Second, these disputes occur where sectors see increased competition and converging of different business models. As noted by Gupta & Snyder "[T]*he recent explosion in smart phone litigation may be explained by a disruption in the mobile wireless ecosystem due to new and large industry entrants, and that this litigation trend may be on a decline. These findings suggest that in the realm of smart phone wars, the focus specifically on SEPs needs to be revisited, the litigation outcomes are based on the quality of litigated patents, and that recent litigation activity in this industry may be explained by industry dynamics rather than related to patents*." It is important to remember that such 'patent wars' are not new. Historically there have always been patent wars flaring up[6] and these always subside – as have the smartphone patent wars. Third, innovation continued to thrive despite these disputes, with consumers continuing to get better and cheaper products. Lastly, while litigation may not be the ideal means of resolving disputes the courts must remain the ultimate means of dispute resolution.

9. To undertake standardisation policy changes that have the effect of undermining patented technologies by placing undue burdens on IPR holders will not only affect the

[5] See '*Smart Phone Litigation and Standard Essential Patents'*, by Kirti Gupta and Mark Snyder, May 2014, http://hooverip2.org/wp-content/uploads/ip2-wp14006-paper.pdf

[6] See for example '*The Rise and Fall of the First American Patent Thicket: The Sewing Machine War of the 1850s'*, by Adam Mossoff, *Arizona Law Review, Vol. 53, pp. 165-211, 2011 George Mason Law & Economics Research Paper No. 09-19*

attractiveness of European standardisation efforts but will discriminate against business models, as it very much pushes companies to seek alternative return on investment through e.g. manufacturing or services, while ignoring the fact that some technology developers, such as research institutes or smaller technology companies, may not wish to so or even be in a position to do so. It seems therefore that the consultation document loses sight of the function of patents that is to encourage investors to engage in risky R&D to develop technology solutions that can be contributed to standards and allow standards, in order to address optimal technological solutions. Recognition and support of patent rights also provides a level of legal certainty in licensing and encourages re-investment in standardisation activities.

10. Any reform of IPR policies should therefore be proportionate in response to an established market failure, defined, quantified, and supported by observable data. So far, the Study and consultation document do not do so, but rather focuses on biased theories and possible concerns for the future without assessing the impact of suggested changes. In the context of standardisation this is particularly important, especially from long-term ('dynamic') benefits perspective.

11. In this regard, Qualcomm notes that certain of the proposed solutions in the consultation document are particularly misplaced; for example, the consultation focuses on patent pools and alternative dispute resolution mechanisms, presuming that these may assist in easing the assumed, but not established, standards 'hold-up'. But these mechanisms have always been available and, where commercial interests align, they have been used. Therefore, our responses focus on the turn-key issues.

Key issues 1 – Scope of standardisation involving patents

12. The development of technological solutions to address the needs of the standards community requires investment, risk and commitment. Therefore questions about the increase of patented technologies for standardised technologies are misplaced; there is no allegation that the inclusion of patented technologies results in inferior standards. The debate is on whether the patent system somehow inhibits dissemination. In the context of the enormous levels of investment in and success of the massively multi-player collaborative innovation project that is open standardisation, this debate that patents some how inhibit dissemination of technology is appears misplaced. Whether solutions are patented and how those patents are licensed under FRAND commitments depends on the business model of the patent owner. In particular for smaller entities, such as SMEs and research institutes, the patent system represents a unique means to negotiate on a level playing field with larger implementers. Rather than asking questions on whether standardisation involving patents contributes to innovation or to the uptake of new technologies the focus should be on how European standardisation can continue to be a world-leading system. If there is increased competition from non-European standardisation bodies and proprietary technology providers, patents and IPR policies

are not a problem but rather a means for maintaining business model neutrality and the competitiveness of Europe.

13. In the context of questions relating to over- or under-inclusion or 'too many patents', it is first important to understand how standards are created. As relates to 3GPP at least and the development of the UMTS standard, approximately 70% of participants did not submit any technology contributions, yet voted on the inclusion of technology contributions.[7] All participants have an interest in developing the best standards and seeing these successfully disseminated. Participants are therefore in a good position to consider all competing technologies and identify the best technical alternative, whether it is patented or not. Such decisions cannot be made on a formulaic basis; rather standards participants should be allowed to consider the merits of the technology regardless of whether a particular solution benefits from patent protection or not.

Key Issues 2: Questions on "best rules and practices"

14. As noted above, standards organisations have evolved their rules to ensure the continued effectiveness of the standardisation process, often with guidance from regulators. Governance rules must be clear and transparent, and open as reflected in the European Commission's Standards Regulation and the Guidelines on Horizontal Co-operation Agreements. If a particular group of interests hi-jacks the standardisation process or rules, those excluded will react accordingly, especially given that standardisation is a voluntary exercise. Rules should therefore seek to encourage the greatest participation of all players that may have valuable contributions to make to the standardisation effort, no matter what their size or business model may be.

15. Despite the implication of questions in section 6 which focuses on licensing on fair, reasonable and non-discriminatory terms (FRAND), one feature of the open standardisation model that has served European standardisation and European companies well is the flexible and business model neutral FRAND framework. This lies at the heart of most SDO IPR policies – i.e. the voluntary, contractual commitment to be prepared to grant licenses on FRAND terms. Given the number of standards developed under this regime and licensing agreements flowing, the FRAND framework has proved highly successful. And despite a few high profile disputes on applicable license rates and terms, disputes and litigation have in fact been very rare. In elaborating the function of the FRAND commitment, the ETSI rules are very clear about the dual objectives of their patent policies; to adequately an fairly reward IPR owners while providing availability for patented technology for implementation of standards.

16. As alluded to above, the decade-old debate about patents and standards has led to a plethora of initiatives, theories and 'solutions' being proposed that usually have the aim

[7] See, '*The process and data behind standard-setting in wireless communications*', by Kirti Gupta 2013, available at: http://www.law.northwestern.edu/research-faculty/searlecenter/events/entrepreneur/documents/Gupta_standard-setting-process-3gpp.pdf.

and effect of drastically changing the standardisation dynamic. A benefit of this debate is that there is a greater understanding of standardisation but the actual rule changes have focused on practical issues and have, so far, avoided distorting them, at least in Europe.

Key issue 3 – Patent transparency

17. The consultation seeks comments on various rules that impact such 'transparency' and in particular what may impact on the lack of transparency. At the outset it should be noted that, as highlighted above, standardisation rules require a level of flexibility to deal with dynamism and different interests at stake. Some of the changes suggested in the consultation document would increase the burden on standardisation participants that would in particular disadvantage smaller, more resource-constrained, players.

18. In the general questions, the consultation states that 'Patent transparency seems particularly important to achieve efficient licensing and to prevent abusive behaviour'. This is not self-evident or necessarily correct. In the context of licensing, patent transparency serves to identify the owners of potentially essential patents from whom implementers need to seek licenses. However, it is critical that the Commission understand that licensing of standards essential patents is not conducted on a per-patent basis or even on a per-standard basis but typically on a portfolio basis where companies come together to license or cross-license their portfolios of patented technologies. This is the norm in patent intensive industries particularly in ICT and high tech industries and is efficient. There is a danger that imposing rules on patent transparency mistakenly intended to improve the efficiency of licensing might achieve the opposite by requiring or promoting a fragmented, wholly inefficient and value-destroying, per-patent approach to licensing. We also think it is critical that the exact scope of claims of 'abusive behaviour' are properly understood before 'solutions' are discussed. In our experience, there is a significant distinction between difficult licensing negotiating and 'abuse' which remains unquantified or limited to fringe examples.

19. Overall, it should be noted that the vast majority of standards that are successfully implemented raise no issues in relation to patents. The fact that some standards contain many technologies is a reflection of the complexity of the standard and of the level of innovation included, and it should also be stressed that essential patent owners have an interest in successful standards implementation (which is why current IPR policies seek to encourage implementation and indeed contribution of patented-technologies).

20. So far there is no data provided (e.g. in the Study) that properly identifies or quantifies 'insufficient transparency' as a problem that needs resolving. While e.g. questions 3.1.4 seeks data on this point there is a significant danger of suggesting 'fixes' that could back-fire and make European standardization rules more costly, slower and significantly less attractive to technology developers. This is due to the fact that the consultation implies a blending in of the technical aspects (undertaken by engineers in working groups) with the IPR aspects. While larger companies may be able to field a series of company

representatives, many smaller ones will not. As a result, 'transparency' 'solutions' need to be tailored to identified problems.

21. However, one option would be to look at the issue of essentiality declarations (see questions 3.2.1 et seq.). It is true, especially in dynamic standards development and evolution, that essentiality designations may change. In fact, the essentiality of a patent may change over time depending upon the particular definition of essentiality in the standards organization IPR policy and upon external factors such as the development of the standard, the pre- and post-grant amendment of the patent, the availability of non-infringing alternatives and the state of the art. One objective of the review could be to increase the certainty around essentiality designations. The current systems of disclosure may not be perfect and considering cost-effective and business model neutral proposals to strengthen transparency of essential IPR through specific disclosure rules is to be welcomed.

22. But it should be recognized that the perfect should not be the enemy of the good and there is no 'silver bullet' here given the complexity and uncertainty of standardization; the more certainty, the more cost and the slower the process. However, essentiality declarations systems have actually worked well and a weakening of disclosure obligations will create greater uncertainty and probably more litigation. On the other hand, imposing significant obligations on patent holders e.g. the obligation to recheck its IPR declaration once a standard had been adopted and/or state why the technology is relevant for the standard will not work. This is because, in high tech standards at least, there are many hundreds of granted or pending SEPs which are in various states of amendment, that standards are rarely final but continually evolve. As a result such obligations would impose considerable commercial and legal burden on declared SEP holders. In addition, in licensing discussions the potential licensor should be able to review the key patents at stake and may challenge essentiality in negotiations or before a court or arbitrator. However, it is important to point out that implementers are not prevented from implementing during these discussions.

Key issue 4 – Transfer of standard essential patents (SEPs)

23. The issue of the transferability of SEPs is now well understood. Many major SSOs have changed or are changing their rules to address concerns that new SEP owners may not license on FRAND terms.

24. Question 4.2.4 refers to the License of right (LoR) system. The LoR system is often referred to as a potential framework for SEPs. In most jurisdictions that have a LoR system, these have not been widely used because the system essentially offers the patentee lower filing and maintenance fees for agreeing to licence under the LoR. In a standardisation context, however, this makes little sense as a patentee may not say with 100% certainty that a particular patent or patent claim will be essential yet, if the patent

or patent claim is non-essential, they will still be required to license as of right their non-essential patented technology that they may chose for legitimate reasons not to.

Key issue 5 – Patent pools related to standardisation

25. There should continue to be no bias in favour of patent pools, as these may give rise to both pro- and anticompetitive effects; they should be voluntary and used only where it is appropriate to all the parties concerned; they should not be mandatory; and the risks of pools should be understood. In fact, we note the recently published empirical evidence on historic pools that demonstrates that they may have disincentivised innovation.[8] Therefore patent pools come with their own challenges. In establishing a new patent pool, it can be difficult to align the variety of interests of firms with different business models, different patent strengths, different sizes, etc. For example, firms with predominantly downstream commercial interests are likely to have different licensing objectives than upstream technology providers. Firms with predominantly downstream interests may be promoting pools with certain parameters because they are looking to influence both overall royalties and valuation methodologies outside of the pool. And, of course, patent pools, just like patents, do not guaranteed success. Companies that are members of pools will succeed or fail based on their business cases and the desirability of their product.

26. Economic literature is not sufficiently advanced for the Commission to consider changing the current regulatory approach. Significantly, there is no empirical evidence on the effects of contemporary pools on innovation, because modern pools are too recent for their effects on innovation to be properly observed. Analysis of patent pools shows that patent pools are most successful where participants are at the same level of the market and have the same incentive to join.[9] However, pools are not a panacea and while there are patent pools that are very successful, there are also pools that have been criticised for being patent trolls or for engaging in exploitative abuse.

27. Conversely, some allege that patent pool licensing terms – though agreed by a subset of industry players with perhaps a common interest and business model - are evidence of the broader reasonableness of those terms and seek to impose those terms on licensors that chose not to enter those patent pools because they did not find that they offered a reasonable return on their essential patents and did not accommodate their business models. It therefore seems odd that the consultation asks what public authorities and standard setting organizations do to facilitate pools; this should be a purely commercial decision for each patent owner. Indeed, in mobile communications technologies show

[8] See '*Do Patent Pools Encourage Innovation? Evidence from 20 Industries in the 1930s*' by Ryan Lampe and Petra Moser (December 5, 2011). See also, '*Do Patent Pools Encourage Innovation? Evidence from the 19th Century Sewing Machine Industry*' by Ryan Lampe and Petra Moser (June 8, 2010).

[9] '*To join or not to join: Examining patent pool participation and rent sharing rules*' by Layne-Farrar, Anne and Josh Lerner, International Journal of Industrial Organization 29, no. 2: 294-303, 2011.

that pools are not necessary for the successful dissemination of technology. Bilateral portfolio licensing is more efficient, is flexible, is business model neutral and is sufficient to support the commercialisation of highly complex products based on multiple advanced standards developed by many innovators.

Key issue 6 – Notions of "fair", "reasonable" and "non-discriminatory"

28. Section 6 seeks views on the meaning and definition of FRAND licensing terms. As noted above, the debate on the FRAND commitment is well known. However, the Study sheds little new light on the issue. FRAND licensing policies bridge the gap between holders of IP and implementers of the standards. The FRAND commitment ensures that both licensor and licensee are able to achieve a mutually satisfactory commercial agreement, allowing for return for technology developed and access to that technology on reasonable terms. Qualcomm has the widest licensing practice in the industry and in its experience, FRAND is best achieved through bilateral arms-length negotiations. The FRAND commitment has historically proved eminently flexible to deal with all types of players, technologies and markets. R&D expenditures among 3GPP members has grown over time. It has therefore not required a definition particularly not to support the special interests of a few companies with specific business models.

29. At this juncture the following points are worth highlighting.
    - First, there have been many theories proposed to 'define' FRAND (including the latest ones referred to in the consultation document) but little fact has been provided to support the need to define FRAND (neither does the Study provide such facts) that is little more than an attempt to shift rents. Yet over the time that the debate has occurred, while the vast majority of SSOs have assiduously avoided defining FRAND terms, standardised technologies based on FRAND licensing, especially mobile and wireless, have flourished beyond all expectation.[10] One reason is that these theories have not taken hold is because the facts to not support the theories – quite the opposite. Another is that the solutions to the supposed problems, proposed by certain implementers, are unacceptable to a substantial group of innovators as these 'solutions' would simply devalue the contributions of those innovators.
    - Second, FRAND is the result of an arms' length contractual negotiation between parties and may take a range of terms. The upper and lower ranges reflect the positions of the parties and what they bring to the table. This includes the ability to negotiate. It would make little sense for IPR policies to assist companies that are ineffective at or unwilling to negotiate in good faith.
    - Third, the FRAND commitment can be reviewed by courts. This means that a SEP holder cannot impose a non-FRAND price on a licensee, as such an attempt would be challenged. The courts therefore ensure that unilateral fixing of a price, if non-FRAND, cannot occur.

[10] See footnote 5 op cit.

- Fourth, defining FRAND would risk interfering in the commercial negotiations of parties and upsetting the balance of negotiation power of parties with different business models – i.e. standard developer/patent licensor and standard implementer/patent licensee. This is not something that the European Commission should do.

30. As noted at the outset, reforming rules without empirical data that identifies and quantifies a defined problem will undoubtedly distort the existing market. Given that standardisation requires risk, investment and voluntary participation and is a dynamic process, and reforms of the system must be cautiously undertaken. Given that so far no standards have been shown to have failed to be successfully implemented due IPR costs, the European Commission may want to refocus its direction.

31. Wireless connectivity is expanding rapidly across all industry sectors, but more investment will be needed to develop the technology innovations required to support this growth. If companies are to bear the risk of investing billions Euros to develop the technologies that are needed, they are going to want some level of return for it. Without this incentive, innovations such as 5G and internet of things won't happen in Europe in support of the Digital Single Market. Driving down the incentives to invest in risky R&D with the expectation that companies will continue to invent, develop and contribute valuable technologies to standards without those incentives is an enormous gamble. Moreover, any definition or "guidance" on the meaning of FRAND or "reasonable" risks reaching into the commercial relationships of players in standardised industries and risks jeopardising the intentionally flexible and business-model neutral framework of open standardisation.

32. As noted above, patent portfolio licensing is efficient for both patent owners and implementers in standardised industries because it allows both parties to come together to license, or typically cross-license, their portfolios of patented technologies to enable them to access all the standards essential technologies they use in their respective products and services while providing the reasonable return on their relative technology investments. Unlike patent pools, bilateral patent portfolio licensing may include multiple standards essential patents, as well as other non-essential patents. Patent portfolio licensing is the norm in patent intensive industries particularly in ICT and high tech industries and is without doubt the most efficient approach. It is quite obvious that requiring the licensing of individual essential patents or even individual essential patents claims is a recipe for fragmenting and destroying the value of standards.

33. Some companies with particular business models have advanced proposals relating to injunctions, definitions of FRAND and "reciprocity" in standards organisations that are intended to result in per-patent or even per-patent-claim licensing, for each standard or each technical specification within a standard. This may be an attempt to devalue the collaborative efforts of many other players that invest in innovation and contribute the results to open standards and an attack on open standardisation itself in favour of closed proprietary solutions.

34. The portfolio of patents essential to a given standard or technology are rightly viewed from a commercial perspective. Note that portfolio licensing does not require identification of individual patents or a determination of their essentiality or validity. Rather, like FRAND licensing commitments are defined in scope to any patents that are and remain essential to a standard, patent licenses for standardised technologies are typically scoped to any and all patents essential to a particular standard, group of standards, and sometimes to any non-essential patents used in products that implement those standardised technologies.

35. As a theory, "royalty stacking" is controversial and unsound for many reasons. For one, it supposes that there is some arbitrary fixed price cap into which all royalties for all standards essential patents must be crammed, no matter how advanced and technology packed the standard is. For another, theories of "royalty stacking" would arbitrarily treat patent inputs uniquely and prejudicially. One might just as reasonably propose limits on the price of hardware inputs to a device with one eye on the total number of parts required, and with a goal of keeping the total price of the hardware down. Or one might cut to the chase and just impose legal price controls on the final product itself with a goal of making the product "cheaper" for the consumer. Happily, it is now generally accepted that price controls produce supply shortages; the same must be true of price controls on standards essential patents. There are numerous other problems with theories of "royalty stacking" but it is worth noting that the theory is one which has an implicit business model bias in favour of implementers of standards and opposed to essential patent owners. As such, it is not a helpful theory to be considering in the context of maintaining a balanced and business model neutral framework for open standards.

36. But perhaps the most glaring fact concerning the supposed phenomenon of "royalty stacking" is the absence of empirical evidence of there being a problem. As has recently been held in a US Court of Appeal of the Federal Circuit decision, parties relying on theories of "royalty stacking" must provide specific evidence to support any such claim in relation to both the specific FRAND commitment at issue and the specific technology referenced therein. Evidence of widespread "royalty stacking" affecting the uptake and implementation of numerous standards in numerous industries problem is surely to be required and at a level of absolute certainty when considering systemic changes that might affect entire industries that rely on standards and not just the individual parties to a particular commercial dispute. Yet despite years, if not decades, of conjecture, there remains no evidence of any systemic problem with "royalty stacking" within any standards-based industries and for any standards-based products. Rather, the astonishing commercial success of many standardised and patent intensive industries, including perhaps most notably the astonishing success of the wireless industry, indicates that "royalty stacking" simply cannot be a systemic problem but is at best just a theory and an unsound and controversial one. One useful outcome of this consultation

would be a recognition by the European Commission of the glaring lack of the evidence supporting the conjecture of a systemic problem in standards of "royalty stacking". [11]

37. We note that the same can be said for the theory of "patent hold up".

38. Predominant licensing practices in the wireless industry is to license standards essential patents at the level of the end product or device and to use the net selling price of the end product or device as a royalty base. This practice has served these industries well for decades and supports efficient portfolio licensing. It is reflected in the recently revised European Commission Guidelines on technology transfer agreements which note "*In cases where the licensed technology relates to an input which is incorporated into a final product it is as a general rule not restrictive of competition that royalties are calculated on the basis of the price of the final product, provided that it incorporates the licensed technology*".[12]

39. Efforts by some companies with particular commercial interests to force patent owners to license exhaustively at the level of certain low cost chip components or at the level of the "smallest sealable patent practicing unit" as identified individually by each individual claim of each essential patent claim are simply efforts to limit licensing costs, in particular royalty costs, to a small fraction of the price of those chip components (one company in recent US litigation demanded that licenses to a portfolio of essential patents be limited to "pennies or fractions thereof"), and to interfere with efficient patent portfolio licensing practice. However, in considering the issue of valuing SEPs at the component level, a U.S. court put it more succinctly; "*Basing a royalty solely on chip price is like valuing a copyrighted book based only on the costs of the binding, paper, and ink needed to actually produce the physical product. While such a calculation captures the cost of the physical product, it provides no indication of its actual value*."[13]

40. There is no "one size fits all" licensing model. Patent licensing arrangements are commercial arrangements between companies and should be left to the parties concerned taking the specific facts and circumstances of their particular products or services, industry, standard or technology and business models into account. It may be that the end product or device is the right level and base to use to adequately and fairly capture the value provided by the patented technology being licensed in some cases and not in others. For example, it is conceivable that an implementer of a standard subsidises the price of an end product perhaps providing it for free and derives its profits from services accessed using the product. It would not then be appropriate to use the net selling price of the end product as the royalty base.

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[11] For a detailed analysis of the theories of royalty stacking, hold up and incremental value, and why they bear no relation to the real world see Mallinson, at footnote 1 op cit.

[12] See Communication from the Commission on Guidelines on the application of Article 101 of the Treaty on the Functioning of the European Union to technology transfer agreements, 2014/C 89/03, at para 184.

[13] *CSIRO v. Cisco Systems, Inc.*, 2014 WL 3805817, at *11 (E.D. Tex. July 23, 2014).

41. Similarly, different product categories may benefit from different licensing models and charging running royalties as a percentage of a product is not the only model. Up front license fees, fixed per unit running royalties or percentage based running royalties with maximum and/or minimum fixed fee limits are also common licensing models and may be agreed as appropriate. It is inappropriate to assume there exists only one licensing model or to reduce the flexibility of parties to reach commercially acceptable licensing solutions by requiring or preferring one licensing model over another.

42. Like the legal standard of "reasonableness" the concept of "non-discrimination" is one that is best left to a case by case consideration bearing in mind the importance not assuming apples and oranges are similarly situated. FRAND, including its "non-discrimination" element, is inherently flexible to accommodate the facts and circumstances of each particular licensing negotiation between particular parties with particular patent portfolios, particular products and services, particular business models, in particular industries and under particular market conditions. The questions raised in this section, like many others in this part of the consultation, are best left for courts to consider on a case by cases basis where a dispute cannot be resolved through negotiation.

Key issue 7 – Patent dispute resolution

43. Qualcomm urges the European Commission to gather proper evidence of the extent of disagreements that are NOT resolved in the process of bilateral negotiation. Most disagreements never become disputes and the proper context to dispute resolution needs to be better understood. If policies are elaborated that create obstacles to upholding a right, the right becomes worth less or worthless.

44. While legal disputes are not ideal, these will occur in business and are usually resolved through negotiation 'before the doors of the court', by the courts or through ADR. Whether there is an endemic issue to be addressed has not been proved and indeed the smartphone patent wars, that begun in 2009 are largely over.

45. However, it might be worth noting that where commercial disagreements spill over into litigation a company will look to their best strategy which may or may not include SEP litigation. It is clear that patents (whether SEP or other) are usually a tool in a broader commercial situation. Therefore restricting the ability of a SEP owner to have recourse to a SEP is merely undermining innovators. The history of the smartphone patent wars has shown this. As a result, disputes between two parties tend not to affect standardization work itself.

Key issue 8 – Unwilling implementers and injunctions

46. The issue of injunctive relief has been exhaustively discussed and the European Court of Justice is due to issue a decision in early 2015 on this question in Huawei Technologies C170/13. Given that the European Court will settle certain issues, Qualcomm reserves the right to supplement its position following that decision. However, in the meantime, Qualcomm would like to make the following points:

    1) Courts in Europe have not been granting injunctions for FRAND-encumbered SEPs except in very rare circumstances. It is unclear to us that this is an issue that requires policy intervention;

    2) What the Commission must avoid is the situation where a SEP holder is threatened with a sanction where they seek an injunction in the belief that the potential licensee is unwilling to take a license. If the court finds the licensee to be unwilling, injunctive relief should be available;

    3) Question 8.2 refers to the possibility of injunctions based on standard essential patents being abused. It is unclear to us how, when a competent court has taken a decision to grant an injunction, this could be abusive. Likewise, it is unclear to us how any patentee can 'extract unfair, unreasonable or discriminatory royalties' when only a court can impose such a remedy where a licensee is unwilling to accept these terms. If the terms are not FRAND, the court will not award them; and

    4) We believe that Question 8.3 is the crux of the matter; it is critical to get a proper understanding of when injunctions are granted,[14] as this is the basis for whether any threat of injunction is credible.

47. As with the supposed phenomenon of "royalty stacking", perhaps the most glaring fact concerning the theory of "patent holdup" - based on the ability of a standards essential patent owners to explicitly or implicitly threaten to seek an injunction - is the absence of any empirical evidence of there being a problem. As has recently been held in a US Court of Appeal of the Federal Circuit decision, parties relying on theories of "patent holdup" must provide specific evidence to support any such claim in relation to both the specific FRAND commitment at issue and the specific technology referenced therein. Evidence of widespread "patent holdup" affecting the uptake and implementation of numerous standards in numerous industries problem is surely to be required and at a level of absolute certainty when considering systemic changes that might affect entire industries that rely on standards and not just the individual parties to a particular commercial dispute. Yet despite years, if not decades, of conjecture, there remains no evidence of any systemic problem with "patent hold up" within any standards-based industries and for any standards-based products. Rather, the astonishing commercial success of many standardised and patent intensive industries, including perhaps most notably the

[14] See "*Injunctions for Standard-Essential Patents: Justice is not Blind*" by Camesasca, Langus, Neven and Treacy, 2013, Journal of Competition Law&Economics, 9(2), 285–311

astonishing success of the wireless industry, indicates that "patent holdup" simply cannot be a systemic problem but is at best just a theory and an unsound and controversial one. As indicated above, one useful outcome of this consultation would be a recognition by the European Commission of the glaring lack of the evidence supporting the conjecture of a systemic problem in standards of "patent holdup".

48. These issues are best addressed by courts that are well able to cope with these issue. It is not for SSOs to opine on this area.

Conclusion

49. Qualcomm notes that the consultation raises a number of questions that reflect theories which implicitly or explicitly assume the existence of problems in relation to the licensing of standards essential patents. For more than a decade these theories have been debated, new ones have been added to the debate as old ones are shown to lack any real-world relevance, but there is a serious paucity of evidence that supports these theories; in fact real-world evidence is to the contrary.

50. These theories are often argued by some companies with specific commercial interests which are primarily aimed to reduce the value of others' standards essential patents. We would be pleased to see the Commission recognizing the risky and costly efforts of many innovators that collaborate in the development of advanced standards in the complex technologies of ICT and high tech industries and recognize the importance of ensuring those innovators are appropriately rewarded for the use of their technologies through ensuring appropriate protection enforcement and licensing of standards essential patents remains available.

51. We would therefore urge the Commission to undertake a proper fact-finding exercise to assess real-world facts of standardization and dissemination; to view standardization not only in the context of patent and patent licensing, but dissemination and the whole ecosystem; to undertake an assessment of the impact of applying theoretical remedies to theoretical problems and of addressing fringe issues in a way that does not affect the well-functioning center.

52. The FRAND-based and business neutral model of open standardization has served Europe well and we believe will continue to serve Europe well. We would urge the Commission to look at bolstering and fostering those elements that make the system the success that it is.