

Dear IPO,

This is my response to the UK IPO's Call for Views on whether the SEP ecosystem (i.e. the enabling participants, commercial relationships, infrastructure, and legal and regulatory environment) surrounding SEPs is functioning efficiently and effectively and striking the right balance for all entities involved.

Following my extended introduction, I follow the Q&A format of your form.

I make my submission to this Call for Views on my own behalf as [a UK-based industry analyst in mobile communications](#) with more than 15 years of experience on matters relating to the development of standard-essential technologies and the patent licensing of these on FRAND terms. In addition to [publishing numerous research articles on SEP licensing](#) and consulting for various clients on such issues, I have testified as an expert witness on such matters, including in *TCL v. Ericsson* in the US Federal Court for the District of Central California, 2017.

The major opportunity for the UK in development and implementation of standard-essential technologies is to increase its participation and establish some technological leadership that will foster high-value employment and economic growth. Neither as an SEP developer nor as an SEP implementer has the UK performed anything like as well yet as the US or various nations in Europe and Asia. There is much scope for improvement.

However, rather than trying to improve its lot by fixing an unbroken system, the UK should seek to capitalise better on and promote internationally the existing SEP/FRAND framework that has proven so effective and valuable for a variety of other nations, different business models, numerous companies and to consumers overall.

With low barriers to market entry, all top five smartphone OEMs other than Samsung, in a market worth around \$500 billion per year, are relatively late market entrants. Apple became the most valuable company in the world, largely from selling iPhones since 2007, while paying less than \$20 in SEP royalties per iPhone with its wholesale average selling prices for these above \$700 in recent years. Chinese company market entrants including Xiaomi (2013), Oppo (2014), Vivo (2014) also made it to the top five as SEP licensees with little or nothing in the way of SEP ownership themselves. Competition is intense. Meanwhile, major SEP owners Nokia—flourishing as a mobile network equipment vendor and SEP licensor—and LG exited the mobile phone business in 2014 and 2021, respectively.

Internet platforms including Google and Facebook, as well as Apple also rely most heavily on mobile connectivity to deliver their services effectively and seamlessly. Applications such as Uber would not exist without smartphones. There are more mobile connections than people on the planet. Mobile phones provide the only means of calling and connecting to the Internet for billions of people. SEP fees cost

Undermining the value of SEPs is not the answer to improving the UK's lacklustre position in the SEP ecosystem: that will only further pad the enormous profits of Apple and will disincentivise long-term development in standard-essential technologies. Financial and other incentives to develop SEPs, to implement innovative applications, and the provenly-effective balance between the two, should be preserved. The UK should seek to ensure other nations also play fair and do not erode the value of SEPs or avoid paying their dues.

Despite the UK being a relatively small national market for SEP-based products, it has become an important and respected venue for SEP litigation. This is illustrated in *Unwired Planet v. Huawei*, including a supreme Court Decision that upholds patent rights for SEPs. Several other FRAND cases are in train. The UK is a world leader in establishing FRAND royalty rates in court. The UK should be wary of jeopardising legal stability and what it is achieving by weakening SEP rights or sowing uncertainties about these.

Developing new use cases and adoption for mobile communications in the Internet of Things (IoT) with 5G presents far greater challenges than SEP licensing. There are numerous technical problems

that need to be overcome, and many prospective IoT business models are not yet formulated, let alone verified and endorsed with budgeted and funded implementation projects.

The UK has a wide variety of valuable resources that can help elevate it in communications technology development and implementation; and which can enable it to become the global innovation hub it seeks to be by 2035. For example, the Arm computing architecture is embedded in virtually all mobile phones, as well as most other connected devices. Arm's business model is to license its intellectual property to all comers. The major business challenge with its new objective of obtaining a public stock market listing is to grow its licensing and royalties sufficiently to maintain the R&D intensity this requires. The UK has a wealth of technical talent in various places such as Cambridge. Surrey University is a preeminent academic in next generation mobile technologies. The UK mobile ecosystem needs leadership and investment with improved education, training, incubators, and other programmes to foster world-leading innovations in standard-essential technology development, and in the technologies and applications downstream in implementation.

I would like to draw particular attention to my most recent publications on various issues the IPO raises in its Call for Views:

- A. [Sharp - not weak or late enforcement is required against recalcitrant SEP implementers](#) that was also written and submitted in response to the call for comments on the US Department of Justice's December 6, 2021 'Draft Policy Statement on Licensing Negotiations and Remedies for Standard-Essential Patents Subject to Voluntary F/RAND Licensing Commitments'. My article addresses the issues of patent alleged holdup and holdout, euphemistically called "opportunistic behaviors" and the need for availability of injunctions under certain circumstances. I have supplemented this with a publication entitled [Confusing allegations of various "behaviors" are a red herring—not evidence of anything illegal, bad-faith or discriminatory—while SEP owners earnestly attempt to obtain FRAND licensing](#), rebutting another one of the submissions to the US consultation which misleadingly purports to provide empirical evidence of patent holdup.
- B. [Essentiality Rate Inflation and Random Variability in SEP Counts with Sampling and Essentiality Checking for Top-Down FRAND Royalty Rate Setting](#). This indicates my concerns about essentiality checking and patent counting—as is used in setting FRAND royalties with "top-down" apportionment—given the massive inaccuracies in assessing patent essentiality. This is in the context of significant over-declaration of patents that are purported likely to be or become standard essential; but are declared essential in attempts to game the patent-counting system. I am also concerned about institutionalisation of essentiality checking (and consequently also of patent counting); with a central bureaucracy that would, therefore, have significant sway over SEP valuations, and that would be susceptible to political capture.
- C. [Modest SEP royalties on smartphones have declined and licensing is stabilizing](#). This debunks allegations that there is a "royalty stack" and that implementers are forced to pay exorbitant fees to license SEPs. Aggregate royalty payments for licensing SEPs in smartphones have remained in modest single-digit percentages and have declined since 2013.

The rest of my response is in answer to consultation questions posed:

1. How does the SEPs ecosystem work effectively in a balanced way to support competition and innovation?

The SEP ecosystem works well—[particularly in mobile communications](#), as it also does in video codecs (e.g. AVC/H.264) and in some royalty-free standards such as Bluetooth—and is adapting as it expands into development of the Internet of Things (IoT) with new licensing platforms such as [Avanci for automotive](#) with a price of \$15 per car for 4G LTE. For example, with ETSI's stable IPR Policy since the mid-1990s; 3G, 4G LTE and 5G standards development has flourished, as has the adoption and use of these technologies by more than half the population worldwide.

2. What actions or interventions would make the greatest improvements for consumers in the UK?

The UK should be wary of trying to fix a system that is not broken, and that by all measures is functioning very well. The UK should not make changes based on [licensing myths](#) and theoretical concerns in absence of evidence that alleged phenomena such as [patent holdup](#) and royalty stacking (with, instead, [evidence of modest and declining aggregate royalties, as illustrated in C](#)) actually occur, and without evidence of harm. Stability and predictability are important. Intellectual property rights should be preserved, subject to provisions of applicable IPR policies.

3. In your view, are there issues in respect of market power in markets using SEPs? Examples are particularly sought on practices that create difficulties for industry or act as barriers to innovators.

[As explained in A](#), SEPs do not confer market power because patents are not self-enforcing and so SEP owners do not have market power. The ultimate sanction of an injunction can only be issued by a court. Injunctions are difficult to obtain and are very rarely granted for SEPs. Infringers always have the option of avoiding injunctions by paying FRAND royalties. While concerns about lock-in and switching costs are often raised, I have never seen any evidence of these being incurred. A. shows, by way of example, to the contrary that Apple was never locked-in to any standard and was well aware of SEP licensing terms prior to SEP implementation in iPhone designs and production.

4. Are you aware of evidence of circumstances where an implementer of a SEP is required to buy licences to a wider patent portfolio that is not relevant to the standard or component to which the SEP relates? Are there effective ways of resolving such issues?

SEP licenses are typically priced on a portfolio basis, as is the case with many other products and services. For example, Sky is effectively the monopoly provider of multi-channel broadcast TV services in my home area. Sky prices in bundles including many channels, even though some customers have no desire to watch all of them and would rather pay less to have certain channels excluded—which is not an option offered by Sky. Bundling provides some transactional efficiencies—particularly for SEP, about which there are various uncertainties concerning which ones are essential, infringed and valid.

5. Does the competition law framework impact the provisions in agreements between SEP owners in practice? If so, how does it do this? Is there room for improvement in order to better benefit and encourage competition and innovation?

FRAND licensing of SEPs relates to patent law and contract law. Competition is working well, as I indicate in 1. Competition law complaints are meritless overreach, as indicated in other jurisdictions. As I indicated in 3., SEP holders do not have market power. Competition law (i.e., [antitrust law in the US](#)) [claims against Qualcomm in FTC v. Qualcomm were all rejected in the US Court of Appeals for the 9th Circuit](#).

The European Union's *Huawei v ZTE* framework has provided a more balanced and stable framework (e.g. regarding what constitutes a willing versus an unwilling licensee, and with respect to the availability of injunctions) than does US antitrust authority guidance that has fluctuated (or has been interpreted as shifting) with changes of President and antitrust division leadership appointments over the last decade. For example, the DoJ issued a [Policy Statement in 2013](#), [revised it in 2019](#) and issued a [Draft Revised Statement in 2021](#).

6. In your view, what actions or steps can be taken to encourage competition and innovation in the SEPs ecosystem?

While no system is perfect, the status quo is working well to foster technology transfer, [competition](#) and [innovation](#). Published standards from Standard Setting Organisations (SSOs) such as 3GPP are openly available to all, as are technical disclosures in patent filings and declarations of patents that their owners believe are or might become standard essential. Many major SEP owners also disclose their SEP licensing terms. The problem is in jurisdictions outside the UK where the systems is being undermined and abused for the short-term advantage of parties that benefit from weakened rights for SEP owners.

7. *Is there sufficient transparency around how patents are being declared as essential to the standard? What actions do industry, including SDOs undertake to ensure essentiality is understood?*

Increased transparency is desirable if additional information is sufficiently accurate and unbiased, otherwise it only causes confusion and can do more harm than good. For example, industry association NGMN's project to derive aggregate royalties by having a Trusted Third Party add up licensors prospective licensing rates for 4G LTE around 2008 derived percentage figures well in excess of 20%—several times higher than figures that have subsequently shown to be paid of around 5%, [as indicated in C. Avanci](#) illustrates how most 2G, 3G and 4G LTE SEPs can be licensed in cars with clarity on fees charged at up to \$15 per car. Video patent pools including MPEG LA's for AVC (H.264) have for many years provided great clarity on how to license virtually all applicable SEPs and on the associated licensing charges of no more than around \$0.20 per device for that standard.

8. *Are you aware of instances of under-declaration or over-declaration and what issues does this create for markets using SEPs?*

There is evidence of significant over-declaration. The obligation of SSO participants to declare patents as possibly standard essential is being used for an additional purpose to that originally intended. Such patents are counted in the process of deriving top-down royalty rates. While some legitimately declared patents will turn out not to be standard-essential, increasing numbers of patents that would be unlikely to be found essential (e.g. by an independent expert) are declared in attempts to game the system and put patent owners in the most favourable position for licensing negotiations and in court determinations. As [indicated in B.](#), statistical bias in (inevitably) imperfect essentiality determinations provides a big incentive to over-declare. It appears that essentiality rates (i.e. number of truly essential patents divided by number of declared-essential patents) are consequently reducing, could be as low as 8% for 5G overall and are probably rather closer to that figure than figures of 30% or 40% that are commonly presumed.

9. *Would the introduction of an essentiality check service by an independent party improve licensing negotiations? Who would be the appropriate independent party to undertake essentiality checks?*

Parties in negotiations and in litigation are entitled to propose whatever checks they wish, feel helpful in negotiations, and I would not discourage those. They currently use a variety of third-party published studies and commission assessments, specifically themselves. Administrators typically require essentiality checks for patents before patents are included in their patent pools.

However, there is a lot of subjective judgement (i.e. inaccuracies or differences of opinion) in making essentiality assessments. While there would be some efficiencies in having centralised essentiality checking that could be used by all, some kind of "Ministry of Patent Counting" could be subject to political capture with manipulation of patent counts, given the major and inherent uncertainties in essentiality assessments and resulting biases in patent counts, as [indicated in B.](#)

10. *How should an essentiality check take place? Should there be a level of legal certainty given to essentiality checks and assertions of essentiality by IPR holders? If so, how?*

It is impractical to determine essentiality with legal certainty for more than a very small proportion of patents and it is not possible to make even reasonably accurate assessments for all declared-essential patents. If patent counting is required because top-down royalty rate assessments are required by the courts, parties will need to assess large samples of patents with adequate diligence (e.g. probably requiring use of claim charts). As [also indicated in B](#), studies should be designed and sized in recognition of biases and other inaccuracies so that they are fit for purpose and their limitations quantified (e.g. regarding statistical variance due to sampling).

- 11. As SEP portfolios are negotiated with individual implementers, in your view is there sufficient transparency around pricing available when entering into negotiation? Is there a justification under FRAND for different SEP implementers, using the SEP for the same purpose, to be charged different rates for market access?**

Many SEP owners publish prices transparently in rate cards. They would happily license their SEPs to various or all OEMs at these same rates. It is implementers with greatest negotiating strength, willingness to holdout, stomach and funds for litigation that command the lowest rates. If these rates are below FRAND levels, it could be because these rates are the most the licensor could realistically and timely obtain under those constraints versus receiving—a very discriminatory—nothing.

- 12. Would some form of pricing transparency be appropriate for supporting implementers in FRAND pricing negotiations?**

Transparency is increasing. SEP owners should be encouraged to disclose their rates, as many do and as patent pools invariably do. Increasing numbers of FRAND case judgments worldwide include publication of royalty charges and rates.

- 13. Views are sought from respondents on the role that the patent system plays in the development of SEPs and FRAND licensing and whether there are issues within current practice (including law and court judgments) that create issues for innovators. Please include case studies or worked examples, if possible.**

Some would like to weaken patent rights for SEPs, beyond what is stated in patent policies such as ETSI's long-established and little changed IPR policy. That policy says nothing about barring injunctions or mandating SSPPU-based royalty rate determinations, and it was never the intention of SSO members for there to be such stipulations. Patent rights should be upheld, subject to what patent policies condition. Assertions of holdup lack supporting evidence, and have repeatedly be shown to be false, as [I indicate in A](#).

- 14. As patents are territorial in nature, does the current patent regime create a fair global market? Do SEP licensing costs vary by region?**

Licensing costs may vary somewhat by region (e.g. for sales in each region). Technologies may have much better patent protection in one jurisdiction than another where there might be no patent protection at all. However, global licensing agreements are efficient, the norm and are in the best interests of most players.

- 15. Are legal actions and injunctive actions taken equally against infringers of SEPs, regardless of their territorial presence?**

- 16. Does the current framework work for you in enforcing your rights conferred by holding the patent? For example, are injunctions an effective tool? What is the impact of anti-suit injunctions by implementers?**

The availability of injunctions is essential where infringers are unwilling or unable to accept FRAND terms. Patents are not self-enforcing. SEP owners cannot withhold supply of their intellectual property—as can a supplier of physical goods or services—for non-payment.

17. In your view, how should the SEPs and FRAND licensing ecosystem adapt to new standard development for emerging technologies

Emerging technology developers have the choice of formulating standards and contributing their technologies to a variety of different existing SSOs or founding a new SSO. Each SSO has a somewhat different patent policy from another, and some have royalty-free licensing (e.g. for Bluetooth, USB and DOCSIS). That makes for a healthy competitive environment among technologies, standards and business models.

18. What, if any, flexibilities exist within the IP framework that could improve the efficiency of obtaining a license for implementers?

The IP framework in conjunction with standard setting works well. It is helpful that this enables bilateral licensing, patent pooling and royalty-free licensing, but does not mandate any particular approach. There is no relevant evidence of alleged [patent holdup](#) and royalty stacking. Instead, [evidence that aggregate royalties are modest and declining, as illustrated in C.](#)

19. Do you have any views on any other ways of improving efficiency within the licensing landscape of SEPs?

Clarity and stability on issues such as the availability of injunctions makes FRAND licensing more efficient and predictable.

20. Would better use and access to patent pools offer improved efficiency around SEPs licensing? Or would greater use/access create barriers for innovators if there were limitations introduced i.e. cross-licensing?

Patent pooling is a useful alternative to bilateral licensing with efficiencies that can benefit both licensors and licensees. It is for market forces and market participants to decide who joins, and what terms and conditions are employed by pools.

21. How are patent pools best created? To what extent should States, SDOs or other appropriate entities be involved (or excluded) from setting up patent pools?

It is not for States to set up patent pools or make them mandatory—that should be left to the market for patent pool administrators. SDOs/SSOs should stick with technical issues including selecting the best technologies for the standards; but should not be responsible for checking essentiality. Furthermore, SDOs should not be involved in commercial issues such as setting rates. However, States might wish to check that pools do not include anticompetitive requirements, such as forbidding members from licensing bilaterally outside the pool, and that pools are not buyers' cartels exerting monopsony power over SEP holders.

22. Are there alternative ways to address disputes on pricing mechanisms? For example, what point in the value chain provides an economic basis to calculate rates payable?

It will vary from case to case. It is generally for the parties in negotiation to agree how rates are formulated, and with respect to well-established norms (such as using device prices as the royalty base in virtually all handset licensing for decades) and regarding the SEP owner's patent rights. In disputes, the courts should decide as they see fit, and not set rates on a pre-prescribed basis with a rote formula.

23. How could schemes where there are specific definitions of what costs are allowable (percentage limits etc.) best be utilised?

In disputes, the courts should decide as they see fit.

24. In your view, what are the benefits or drawbacks of national courts setting global licensing rates?

If parties agree to international arbitration, that could provide a very efficient way of setting global rates. *Unwired Planet* sets out a practical solution with the need for global rates. In this framework, and with UK infringement established, the licensee has the choice of accepting the global rate set by the court or being subject to an injunction against sales in the UK.

25. Is reliance on courts to determine on a case by case basis whether a licence is FRAND efficient?

Published court judgments including unredacted licensing charge figures are helpful and increase transparency. Concern is about consistency among different national courts.

26. How should industry led approaches for specific areas of SEPs arbitration be explored further? Do you also have views on alternatives to industry led solutions, for example government providing alternative ways of determining and resolving FRAND licensing disputes?

27. Are there already effective alternative means of arbitration and dispute resolution away from courts in respect of FRAND licensing?

Alternative means are available, and these can be effective and cheaper than the courts, as illustrated by the fact that, on occasion, parties repeatedly agree to these means. International arbitration can help deal with the national nature of patent law. While confidentiality makes it difficult to know how extensive these means are used or what royalty rates they come up with, there is surely potential for greater voluntary use of these other methods of dispute resolution.

Regards
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