



## Q&A: CELLULAR TECHNOLOGY STANDARDIZATION AND THE EU SEP REGULATION

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### INTRODUCTION

This document is intended to inform those who are unfamiliar with the ins and outs of how cellular connectivity technology is invented and brought to society, making billions of connected devices and services possible, seamlessly, around the world.

The Q&A is divided in two sections.

The first section of the Q&A presents **The Basics of Cellular Technology Standardization and IP Management**. Cellular technology innovation, standardization, and related IP management are highly technical matters. Given that these topics are at the heart of the proposed SEP Regulation, an introduction to them and to their terminology seems warranted.

The second section of the Q&A presents and analyzes **Elements of the Proposed SEP Regulation**, which is currently being reviewed by EU legislators. It touches on key concepts in the Regulation, including essentiality assessments, the EUIPO SEP Registry, FRAND determinations, confidentiality, and aggregate royalty determinations. In particular, it describes how the proposed SEP Regulation would apply to different Standard Essential Patents and technology standards.

At the start of both sections of the Q&A, a full list of questions is displayed for ease of reference. Users can link to individual answers by clicking on the questions, or they can read the document from start to finish for an end-to-end explanation of the most important characteristics of cellular technology SEPs and their management, and the proposed SEP Regulation.

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# SECTION ONE: THE BASICS OF CELLULAR TECHNOLOGY STANDARDIZATION AND IP MANAGEMENT

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## Technology Standards 101

### What is a cellular technology “standard”?

“Cellular radio” is the technology that connects your mobile phone to the nearest radio mast. To make all the phones, masts, base stations and interconnections communicate with each other globally, they all have to work exactly the same way. The way they work is described in the “standard” – namely 3G, 4G, 5G, etc.

### Are there different types of technology standards?

Yes, many other technologies are standardized, and for the same reason. For instance, Wi-Fi, Bluetooth, and all the various audio and video compression standards.

### What is a Standard Essential Patent (SEP)?

An “SEP” is a Standard Essential Patent. This means that the patent protects an invention which has been selected within the standard as part of how it works. As a result, every product or service that uses the standard infringes the patent. Normally that would mean that the patent owner can prevent that use and obtain damages (for instance if this were a patent for a new medicine). But because of the FRAND commitment (that is, the commitment by a patent owner to license proprietary technology that is included in a standard to users of that standard on a Fair Reasonable and Non-Discriminatory basis) the patent owner cannot prevent use of the invention without first offering a license to the user on FRAND terms. For very large patent licenses, those FRAND terms are usually negotiated. However standard FRAND terms may be offered by a patent pool; this is what the Avanci platform has done to provide connectivity to the auto industry.

### Do standards change or evolve over time, and if so, do the Standard Essential Patents (SEPs) pertaining to such standards also change?

Standards are developed and improved continually by engineers inventing new ways to make them work. That is why a mobile phone can now do many more things (and works better) than when mobile phones were first introduced. 5G is presently being introduced, and engineers are already discussing what new functions and performance 6G should achieve. Each new generation of a standard is different and builds on the ones before.

### Is it possible to predict which patents on technologies will become SEPs?

Companies apply to patent their inventions before submitting their ideas to be considered as essential during the development phase for a new standard. The different ideas all compete and only one solution is ultimately chosen for each part of the development work. Until the new standard is fully defined, it is not possible to know for sure which inventions will be used or how they will be used in the standard. Thus, it is not possible to know in advance which patents protect the technology(ies) being used by the standard.

3G, 4G, and 5G standards each rely on many inventions, which were developed by engineers working for different companies who then discussed their respective competing ideas in working groups, thereby cooperating to find the best solution for the standard. This standard development work is done at 3GPP, the partnership project created in 1998 to unite seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, and TTC) to produce the technical specifications and technical reports for each new generation of cellular telecommunications technologies. The governance of 3GPP is managed by the European Telecommunications Standards Institute (ETSI), although the participating companies are from all over the globe.

## The Ecosystem

### Which companies develop standardized technology?

There are about 20 companies that regularly participate in the development of the cellular radio standards (3G, 4G, 5G, etc.). They include European companies such as Nokia and Ericsson, US companies with a strong European presence such as Qualcomm and InterDigital, the South Korean company Samsung, and Chinese companies such as Huawei. Other European companies such as Philips and Orange also participate in development work. All these companies use patents to protect their inventions.

When their inventions are integrated into standards, the relevant patents are licensed to organizations that use the standard; this is because when the standard is used, the invention is used. The economic value generated by licensing of cellular radio standards for use globally was estimated at around 16 trillion euros for the year 2016; for that same year, the mobile telecommunication industry received patent royalties amounting to an estimated USD 14.2 billion.<sup>1</sup>

Note that most companies involved in developing the standards also have products and services businesses, and the balance between the different parts of their business varies. For instance, Nokia and Ericsson used to make mobile phones and they still make network hardware, but today their profitability depends to a considerable extent upon patent licensing income.

### Which other industry sectors rely on cellular technologies?

The connectivity that can be achieved using cellular radio technology is now applied to more products and services than just mobile phones and laptops. For instance, it is used in vehicles and transport, health services, electricity generation, energy management, “smart” cities, security systems, and in stand-alone systems used to automate factories and warehouses. The cellular radio standards provide the connectivity needed for the “Internet of Things” (IoT) to become a reality.

### What is the economic value generated by standardized cellular technology in Europe?

In 2021, mobile technologies and services generated 4.5% of GDP in Europe – a contribution that amounted to approximately €760 billion of economic value added.<sup>2</sup>

The largest share of royalty payments for SEP licenses comes from the mobile telecoms industry, which generates an estimated patent royalty yield of 14 – 18 billion euros per year with an additional 4 billion euros of non-monetary benefits from cross-licensing. The EU’s share could be estimated at around 3 billion euros per year.<sup>3</sup>

Because the largest users of cellular radio standards are outside the EU (for instance Apple, Samsung, Huawei, and various Chinese manufacturers) the patent licensing income to EU-based researchers (such as Nokia and Ericsson) greatly exceeds the license fees paid by EU-based users to researchers based outside the EU.

The author of a recent study notes that the EU is a leader in R&D for many of the technologies protected under SEPs, most of the global production of the goods using such technologies takes place outside of Europe. The EU is a net exporter of innovation and a receiver of revenues from the licensing of these technologies.<sup>4</sup>

<sup>1</sup> [An estimate of the average cumulative royalty yield in the world mobile phone industry: Theory, measurement and results](#), by Alexander Galetovic, Stephen Haber, and Lew Zaretsk, April 2018, Telecommunications Policy.

<sup>2</sup> [The Mobile Economy Europe 2022](#), October 2022, GSM Association.

<sup>3</sup> [Impact Assessment Report accompanying the Proposal for a Regulation of the European Parliament and of the Council on standard essential patents and amending Regulation \(EU\) 2017/1001](#), April 2023, European Commission.

<sup>4</sup> [Reforming Standard Essential Patents: Trade, Specialisation, and International Jurisprudence](#), by Fredrik Erixon and Oscar Guinea, April 2023, ECIPE.

## To what extent do companies in other sectors contribute to the development of the standardized connectivity technologies they use in their products and services?

At present, almost not at all. There is a vast disparity between the number of companies using the cellular radio standards in their products and services in all sectors, on the one hand, and, on the other hand, the 20 or so companies that actually create the technology, through private investment in cutting-edge research and development, and participation in standards development work.

This system is efficient. Companies using standardized technology in their products and services do not have to invest in the highly specialized, expensive, and complex R&D necessary to deliver new connectivity technologies.<sup>5</sup> Rather, they can in-license the technology at affordable prices. For instance, automakers pay a one-off **\$20 per vehicle** for the life of the vehicle to use 2G, 3G, and 4G; for 5G, they pay a **further \$12**.

## How do SEP owners typically interact with SMEs using standardized technology?

The short answer is that they don't. The main SEP owners for telecommunications technologies (cellular radio, Wi-Fi, audio and video compression) do not generally seek to license companies that qualify as SMEs. This helps SMEs to develop their products without any royalty cost at first, and it helps the SEP owners by growing the market of devices that may eventually be licensed if they are highly successful. SMEs generally do not approach SEP owners for licenses.

It's worth noting that a few SMEs are highly specialized engineering companies making inventions that they contribute to standardized technology. It is an EU policy objective to support participation in standardization by SMEs.

## How can companies using standardized technology know where to go for a license?

Companies that are large enough to be requested to take a license are sufficiently familiar with the technology and the standardization environment to know which companies are involved. Also, commercial reports are available that identify the main SEP holders, and those reports will generally assess patent portfolios and the likelihood of essentiality for those SEP holders.

There is also an entire industry of services professionals who can provide engineering, standardization and legal expertise, nationally and internationally. SDOs (and particularly ETSI) provide explanations and publish their databases of declared patents. Additionally, there is an extensive and ongoing online discussion related to SEP licensing, much of it emanating from the professional advisers involved. A caveat: these services and professional advice are costly and may not be affordable for all SMEs.

## Standard Development Organizations

### In cellular technology, what are the most influential standard development organizations (SDOs), globally and within Europe?

The cellular radio standards are developed and published under the control of 3GPP, which is a partnership between SDOs based in the EU, the US, India, Japan, China, and Korea. However, this work was started by ETSI, which continues to provide the organization and management needed to coordinate the work.

<sup>5</sup> Regarding the difficulty inherent in conducting foundational research for chips, see [Inside Apple's Spectacular Failure to Build a Key Part for its New iPhones](#), by Aaron Tilley and Jang Yie, 23 September 2023, WSJ.

## **Do SDOs offer services, such as essentiality checks and registries of SEPs?**

SDOs are completely focused on technical development work and do not engage in any aspects of licensing. It is very important for them to achieve the best possible technical result without consideration of any commercial interests, as so many actors in the economy today depend to an increasing extent on this technology. However, SDOs require participants in the work to commit to offer any necessary patent licenses on “FRAND” (fair, reasonable and non-discriminatory) terms, and some SDOs (notably ETSI) require participants to also identify any patents that may be essential for use of the standard. The ETSI database of disclosed patents is the largest and most sophisticated database of SEPs of any SDO.

## **Developing new standards: How is the technology that becomes the standard selected?**

Companies put forward their ideas for consideration during the development work. Engineers from the participating companies meet to discuss the competing proposals and choose, by consensus, the one which has the strongest technical merit. This is often the most robust and flexible solution, because many different parts of the standard are developed in parallel and have to be fitted together. There may be hundreds of engineers present at a working group meeting, and many competing contributions to consider. Following agreement, there are administrative processes for finalizing and publishing the standards.

## **Is IP a consideration, alongside technical merit, during standard development work?**

Companies that contribute technology solutions to standards development work must commit, in line with the rules of the SDO, to license their technology solutions that are included in the standard on FRAND terms. At the same time, participants are forbidden by the rules of the SDO from discussing IP rights within the SDO at all.

The commitment made by a participant to license on FRAND terms means that any technology that the participant contributes which is chosen for use in the standard will be available under license on FRAND terms.

## **If participants cannot discuss IP during the standard development work, how are they made aware of relevant IP rights?**

When companies put forward technology solutions for consideration in development work, they sign a Letter of Assurance (LoA) which binds them to make a commitment to license the technology, if ultimately included in the standard, on FRAND terms. The LoA, which is public, is how the other participants become aware of relevant patents. This upfront commitment is important for the community developing the standard because it means that the technologies, if selected, will be made available to users on FRAND terms. In the case of ETSI, the disclosure of the patented technology, along with the commitment to license on FRAND terms, is documented in the ETSI IPR database.

## **During standard development work, do participants talk about the commercial terms for licensing relevant patents?**

This type of discussion is not within the SDO mandate. Engineers participating in technical meetings to select technologies for standardization are not IP experts. Their job is to focus on selecting the best technology to meet the technical and other requirements of the standard. This is, in part, why the rules of the SDO forbid any discussion of licensing terms and IP rights within the SDO.

## **Once a standard is published, can anyone use it?**

Anyone can use a published standard, but to do so lawfully they should in principle take a patent license from each of the contributors to the standard whose inventions are comprised within it. However, companies using the standard almost never seek licenses from contributor companies. It is normal practice for companies to start using a standard unlicensed and to negotiate and agree FRAND licenses at a later stage if (and only if) they are approached by the contributor companies concerned. Contributor companies do not have the resources to negotiate with all users of the standard at once, so they focus on the largest users first.

# IP Management and Standards

## What is a patent family and how does that relate to SEP licensing?

Patents are national rights. There has been no international or pan-European patent until very recently, with the introduction of the Unitary Patent for some Member States. So, to protect an invention more widely one needs to apply for patents in multiple countries. A patent family is a group of patents in different countries that all protect the same invention.

The cellular radio standards (3G, 4G, 5G etc.) are used globally, so inventions for that technology are usually patented in many different countries. It is for the same reason that most licenses for cellular radio standards are global, not just for particular countries.

## What is “FRAND”?

FRAND is the abbreviation for “fair, reasonable and non-discriminatory”. Some SDOs use the term “RAND”, and this is thought to mean the same thing. The question of what terms for a license are FRAND is a factual question in each case, and it depends on all the circumstances, including the standards covered by the license, the product or service that is licensed, the markets in which it is sold, the volumes expected to be sold, the duration of the license, and the form and period of payment, among other factors. Because FRAND is fact-dependent, there can be a lot of argument about exactly what is FRAND in particular circumstances. FRAND licenses between the holders of large patent portfolios and very large manufacturers can be worth millions of euros, so in some cases a manufacturer may choose to become involved in litigation as part of its negotiation strategy.

## How does SEP licensing work?

SEP owners approach manufacturers of mobile phones, laptops, or other connected products, asking them to take a license. This opens the negotiation. Because products using the patented standardized technology are sold and used everywhere in the world, the scope of the license is global. Because it is not easy to be certain which patents would be held to be essential in national court proceedings, all the patents disclosed at ETSI are typically included in the license. Also, because the technology is

constantly being developed, future patents are also included in the license. This does not affect the price; it is just a way to make sure that once the manufacturer is licensed, there can be no further patent claims against them for the duration of the license. Large licenses are complex; for instance, they may have bespoke arrangements for payment and for different rates for different products and markets. Patent License Agreements (PLAs) usually last for 3 to 7 years.

## How do companies agree on the price and conditions for SEP licenses?

Licensors and licensees of telecommunications technologies are all sophisticated organizations with a good understanding of the standards and of the engineering involved. They also have internal legal assistance. Discussions about the contributions made by the licensor to the standard (and therefore what a fair royalty would be) may focus on example patents, but this is a proxy for a negotiation largely around price and perceived value. The market circumstances of both parties will be relevant context for the negotiation. For instance, a very large manufacturer may be able to leverage its market presence to depress the royalty. The negotiation process is generally well understood within the industry. Note that these negotiations will be in respect of licenses worth millions of euros in each case.

## Can licenses be compared?

Yes, but it is often difficult to do this with exactitude because the structure of calculations and payment terms, which can vary widely. In particular it is a complex economic task to “unpack” a license that contains a lump sum payment so as to derive a royalty rate, for instance because the volumes that would be sold were unknown to the parties at the time of the agreement.

## What are “comparable licenses”?

The comparable licenses methodology is not used in negotiations (not least because of confidentiality issues) but it has been developed by the courts (notably in the UK) when seeking to determine FRAND terms between two parties. Note that no EU Member State court has ever determined FRAND terms in proceedings, although they may yet do so. Only UK, US, and China courts have ever issued

decisions including FRAND determinations. This methodology involves reviewing existing licenses from the licensor to licensees that are comparable to the licensee in the proceedings, and/or existing licenses to the licensee in the proceedings from licensors that are comparable to the licensor in the proceedings. Since these all involve third parties and contain acutely sensitive commercial information belonging to direct competitors, the terms of the licenses are maintained as strictly confidential in the proceedings.

The great majority of licenses are negotiated without litigation. The court therefore takes the broad approach that what has been achieved through consensus in the recent market is a good indicator of what may be considered FRAND between the parties to the litigation.

## **How can an aggregate royalty be calculated by a company wishing to integrate standardized technology into its products or services?**

Only UK, US, and China courts have made FRAND determinations so far. Such courts do not generally assess an aggregate royalty in order to determine FRAND terms. But they may use a “bottom up” approach for assessing a likely aggregate in order to check whether the result they have obtained by looking at comparable licenses is within a broadly acceptable range. When doing this, the court has to approximate the share of the technology held by each company that routinely seeks to license its SEPs. This can be done by looking at declarations made to SDOs. (Note: many companies have a relatively small number of patents and do not seek to license, using these for defensive purposes only.)

A company wishing to use standardized technology can find out from commercially available reports which SEP owners routinely seek to license their patents, and what proportion of the declared patents for that standard each company holds. There is also available online discussion and analysis of the likely aggregate royalty for various cellular radio standards (generally considered to be no more than a single digit percentage). A company that develops a successful product using these standards will generally have a sufficient profit margin to accommodate the necessary licensing costs. It is questionable whether a single aggregate royalty could be applied to all “use cases” for a particular standard. One reason is that some uses rely on more

advanced technical features of the standard compared to others.

## **What is a patent pool and are there patent pools for SEPs?**

A patent pool is an agreement between participating patent owners that they will offer a joint license for all their patents. Nevertheless, competition law requires that they must each also offer bilateral licenses for their patents. So, a licensee has a choice to take the pool license (which is usually on publicly available terms) or to negotiate individual licenses with each owner. The significance of the pool depends on the proportion of the declared patents that are covered by its license (i.e. which owners choose to participate). Pools are dynamic and a pool license may cover patents that belong to companies choosing to participate at a later date (but within the license period).

Pools may have advantages in markets where many more companies are developing products than just the mobile phone and laptop manufacturers, and this aspect is developing. For instance, the Avanci platform is an innovative initiative that offers licenses to auto makers and has the participation of most large SEP owners. This organization is also developing new pool licenses for other sectors in the IoT, such as for smart meters.

## **Dispute Resolution**

### **What happens in the event that an SEP owner and licensee cannot reach agreement on licensing terms?**

The only recourse that an SEP owner has against an unlicensed user of its patented technology is to bring a patent infringement claim based on a national patent in a national court. This may be an EU court, but it may also be a court in the UK, US, India, or any other country where the owner holds patent rights, and the user sells products. This may bring pressure to bear on the user in the context of license negotiations because the court may issue an injunction preventing the user from selling its infringing product (provided the patent is held to be valid and infringed and the owner has made a FRAND licensing offer)– but it does not solve the problem of trying to come to a global license agreement for many different patents. Any damages awarded by the court will only be for the infringement of a single patent in a single country.



In the UK court, if the user argues in the proceedings that it is entitled to a FRAND license and therefore should not be enjoined, and if the patent has been held valid and infringed, then the court offers an alternative approach. The court offers a choice between a determination of terms for a FRAND license, to which the user must commit, or a national injunction (to which the patent owner is entitled, since the patent is valid and infringed). In this way the UK court has been asked to determine FRAND terms in several recent SEP cases.

It is also possible for a user to bring a claim in the UK court asking it to determine FRAND terms between it and a SEP owner. However, the user must commit to abide by the outcome. This is a recent development and the case involving this approach has not yet been heard.

The Chinese court is willing to determine FRAND rates upon request by either party. It is generally believed that the Chinese court is likely to set lower rates than other courts, doing so in a manner which ultimately benefits the Chinese user of the standard.

The US court is in principle able to determine FRAND rates, but only where both parties agree that it should do so.

The ability of EU Member State courts to determine FRAND rates and other terms has not yet been considered, although the German court reviews rates offered when considering whether a FRAND offer has been made before deciding whether to grant an injunction.

## Is “alternative dispute resolution” used in SEP disputes?

The only alternative to court proceedings would be a consensual process, such as binding arbitration, or non-binding mediation, to arrive at FRAND terms of a license. This obviously requires that a user is willing to agree to engage in the process and (for arbitration) to be bound by the result.

The advantage of binding arbitration is that it will definitely result in a license; non-binding mediation may also do so, but it is not guaranteed. Other important advantages are that these procedures are usually agreed to be strictly confidential, binding arbitration is not usually subject to appeal, and an arbitration decision can be enforced in almost any country worldwide (under the New York Convention).

The World Intellectual Property Organisation (WIPO) offers FRAND mediation and arbitration services. The organization has a proven track record of helping parties to resolve FRAND disagreements using mediation, with a rapidly growing case load.

## What approaches do courts use in relation to FRAND disputes?

Courts in the EU (and, historically, the UK) apply the judgment of the CJEU in *Huawei v ZTE* to assess whether a patent owner is breaching competition law by bringing an infringement claim based on a standard essential patent. This involves considering whether the parties are negotiating in good faith or not. The burden of good faith is on both parties because negotiation has no meaning unless it is mutual. This test has been used by the German court, in particular, when considering whether to grant injunctions on SEPs.

In the past the Chinese court has issued exceptionally broad “anti-suit injunctions” (ASIs) that sought to restrict the exercise of a patent owner’s rights in every other country worldwide. ASIs block the patent owner from starting or continuing proceedings in another jurisdiction in relation to the same SEP dispute. That practice has ceased for the present, possibly as a consequence of the formal complaint brought by the EU at the World Trade Organization under the TRIPS Agreement.

When determining FRAND terms, the UK court takes a contractual approach based on the FRAND commitment to the SDO in question (for cellular radio standards that SDO is ETSI) and uses the comparable license approach to make its assessment, backed up by a consideration of the consequences for an aggregate royalty if it were to extrapolate from the FRAND rate it has determined. Speaking very broadly, the Chinese court tends to take a regulatory approach based on competition law principles and assesses rates by applying a “top down” methodology based on a target aggregate royalty.

# SECTION TWO: ELEMENTS OF THE PROPOSED SEP REGULATION

## 1. Scope of the SEP Regulation

- What is the scope of application of the proposed SEP Regulation. Does it apply to all SEPs and technology standards, existing and future? [\(view\)](#)
- What is the process for excluding standards from the scope of the Regulation? [\(view\)](#)
- Does the SEP Regulation identify problems in SEP licensing that give rise to “significant inefficiencies affecting the internal market”? [\(view\)](#)
- Many standards predate the Regulation. How will these standards be affected by the Regulation? [\(view\)](#)
- What could be the impact of retroactive application of the SEP Regulation? [\(view\)](#)

## 2. Aggregate Royalty Assessment

- How are procedures for assessing aggregate royalties carried out? [\(view\)](#)
- How will confidentiality be managed in relation to the EUIPO aggregate royalty assessment? [\(view\)](#)
- The Regulation proposes that “conciliators” be appointed. What skills should they have? [\(view\)](#)
- How might the EUIPO’s aggregate royalty assessment be used in the real economy? [\(view\)](#)
- How might the aggregate royalty assessment impact the value chain and innovation incentives? [\(view\)](#)

## 3. Essentiality and the SEP Registry

- Where do registries of SEPs already exist? [\(view\)](#)
- What is random sampling to assess the essentiality of patents notified to the registry? [\(view\)](#)
- What approaches are typically used to conduct essentiality assessments? [\(view\)](#)
- What standards will be included in the registry? [\(view\)](#)

- How might the EUIPO assessment be used in the real economy? [\(view\)](#)
- Is there any downside to the SEP registry and essentiality assessment procedures? [\(view\)](#)
- What incentives does the Regulation create in relation to the notification of SEPs for inclusion in the registry? [\(view\)](#)

## 4. FRAND Determinations

- How will confidential information be managed by EUIPO in relation to FRAND determinations? [\(view\)](#)
- The SEP Regulation provides for a FRAND determination procedure. Who else might conduct a FRAND determination and in what context? [\(view\)](#)
- A “conciliator” may be appointed to carry out a FRAND determination. What skills should this person have? [\(view\)](#)
- How binding is the EUIPO FRAND determination? [\(view\)](#)
- How might the FRAND determination be used in the real economy? [\(view\)](#)

## 5. Confidential Information

- In general, what concerns might there be in relation to management of confidential information under the SEP Regulation? [\(view\)](#)
- Is it possible to provide “non-confidential versions” of documents? [\(view\)](#)
- How will SEP owners submit information about the outcomes of mediation or arbitration proceedings? [\(view\)](#)

## 6. EUIPO: Practical Considerations

- How will EUIPO recruit the necessary expertise to carry out the procedures under the Regulation? [\(view\)](#)
- What costs are associated with carrying out the types of procedures set forth in the SEP Regulation? [\(view\)](#)
- What can we expect from the EUIPO with respect to recruitment, timeline, and costs? [\(view\)](#)

## 7. Micro, Small and Medium-sized Enterprises

- How might the SEP Regulation help MSMEs to navigate the SEP marketplace in Europe? ([view](#))
- Does the SEP Regulation encourage SEP owners to give preferential licensing terms to MSMEs? ([view](#))
- How do SEP owners usually engage with MSMEs in the marketplace? ([view](#))

## 8. Impact of the Regulation

- How might the SEP Regulation affect decision-making by SEP owners? ([view](#))
- What is the evidence base for the SEP Regulation? ([view](#))
- Why has the Regulation been criticized as denying access to justice for SEP owners? ([view](#))

## Scope and Expected Impact of the SEP Regulation

### What is the scope of application of the SEP Regulation? Does it apply to all Standard Essential Patents and standards, existing and future?

The SEP Regulation will apply to all future technology standards in relation to which SEPs exist, in every field and sector, irrespective of whether there are any licensing “difficulties or inefficiencies affecting the functioning of the internal market”. Based on the Regulation text, particular standards and use cases (that is, applications of the standardized technology) that do not create such inefficiencies may be excluded in the future through Delegated Acts, as explained below.

The SEP Regulation will also apply retroactively to existing technology standards and use cases. These will be identified by the Commission in a Delegated Act after the SEP Regulation has taken effect.

### What is the process for excluding future standards and use cases from the scope of the SEP Regulation?

Through Delegated Acts, the Commission will, in the future, identify standards and use cases in relation to which SEP licensing negotiations do not create “significant difficulties or inefficiencies affecting the functioning of the internal market”. In relation to these standards and use cases, the SEP Regulation will only partially apply. They will not be totally excluded from the Regulation, despite being identified as non-problematic.

### Does the SEP Regulation identify problems in SEP licensing that “give rise to” significant difficulties or inefficiencies affecting the functioning of the internal market”?

Neither the proposed SEP Regulation, nor the relevant impact assessment and empirical studies, identify any specific use case or SEP licensing negotiation(s) that currently affect the proper functioning of the internal market.

## **Many standards predate the SEP Regulation. How will these standards' inclusion or exclusion be managed?**

It will be up to the Commission to decide what will be included, after the Regulation has taken effect. This causes uncertainty and could therefore have a significant negative effect on all stakeholders, especially the EUIPO.

## **What could be the impact of retroactive application of the SEP Regulation?**

Legislation with retroactive effect is exceptionally rare, and it must be justified under EU law principles in relation to both equity and legal certainty.

The scale of licensing in cellular technology (3G, 4G, 5G) and the number of patents involved is very large. If every published cellular technology standard is included by Delegated Act within the scope of the SEP Regulation, this will have a very significant effect on the scale of the resources required – both for the EUIPO and for SEP owners. Currently it is not known what published standards will be included.

## **Aggregate Royalty Assessment**

### **The SEP Regulation introduces procedures for assessing aggregate royalties. How can this assessment be carried out?**

To assess a fair aggregate royalty, one needs to understand what profit may be available (from which the royalty may be paid), and what contribution the standardized technology makes to the value of the product or service concerned. This will vary by standard and by use case.

One also needs to know which SEP owners will seek to license their SEPs (as there is a long tail of owners that use SEPs for defensive purposes but do not seek licensing income).

One also needs to consider (as the Regulation recognizes) the need to maintain innovation incentives for all the stakeholders. This includes companies investing in research and contributing their inventions to the standardization process, as well as the

companies developing products and services that use the standardized technology, and their suppliers.

Lastly, there are other interests at stake too, for instance, the interests of consumers and industries that want to continue to benefit from the high rate of development of standardized technologies.

### **How will confidentiality be managed in relation to the EUIPO aggregate royalty assessment?**

The procedures foresee the submission of sensitive information, which is a delicate subject. The underlying commercial information that affects profitability and investment considerations is highly confidential, both for research investors and for product and service developers.

### **The SEP Regulation proposes that "conciliators" be appointed to provide an expert opinion on aggregate royalty. What skills should they have?**

The conciliators will need expert economic skills, combined with broad knowledge and understanding of the industries and technologies concerned. Since they will be required to handle a wide range of evidence and arguments, they will also need to be experienced in litigation and arbitration procedures, and capable of handling large volumes of information and complex legal and economic arguments.

### **How might the EUIPO's aggregate royalty assessment be used in the real economy?**

The assessment of an aggregate royalty by the EUIPO will likely be used in negotiations by implementers to calculate a ceiling on any offer they may make in negotiations. It is unlikely in the real world that implementers will accept and apply the assessment; they are more likely to negotiate down from it. In the event of court proceedings, the assessment is also likely to be used in argument by whichever party finds that it accords more closely with their own view of FRAND terms. A court is unlikely to place much reliance on the assessment, however, because that is a task that it will need to undertake for itself, in accordance with its own view of the applicable laws, principles, and evidence.

## **This part of the SEP Regulation calls for consideration of the impact on the value chain and on innovation incentives. How might the aggregate royalty assessment affect these?**

An aggregate royalty assessment may have an effect on the terms agreed in any license between the parties, thus affecting their respective revenues. Investment in research to further develop standardized technology (such as cellular radio standards) and investment in product development (such as mobile phones with new or enhanced functionality, and new connected devices) is driven in almost all cases by the profit motive. It should not be overlooked that all of the cellular radio technology deployed worldwide has been conceived and created through private investment, as have most of the products and services that make use of the technology. There are powerful societal interests at stake in any intervention in these markets. Price setting by the EUIPO at the aggregate royalty level is likely to have a pronounced effect.

## **Essentiality and the EUIPO SEP Registry**

### **Where do registries of SEPs exist?**

Some SDOs maintain registries of disclosed patents. Notably, ETSI maintains a very sophisticated and extensive database of patents that have been declared as potentially essential to standards under development.

More generally, highly detailed information on individual patents and patent applications is available from the European Patent Office's online database "espacenet", which is one of the most complete patent databases in the world.

### **The SEP Regulation proposes random sampling to assess the essentiality of patents that have been notified to the registry. Comments?**

More complete assessments of SEP portfolios are already available from commercial providers on subscription. The result for any one company will depend in part on its approach to registering patents at the EUIPO

(which ultimately is voluntary). The results for different companies will only be comparable to the extent they choose to take the same approach to registration. Companies that currently negotiate for licenses do not need this information, as they already have access to better, more complete information. Whether SMEs will need this information in the future remains to be seen, but it would only be useful in a bilateral negotiation with an SEP owner, if at all. Currently SMEs are not asked to engage in such negotiations.

### **What approaches are typically used to conduct essentiality assessments?**

To conduct an essentiality assessment requires a thorough knowledge of the standard itself, a good technical understanding of the technology involved at a very detailed level, and the legal skills to apply rules and concepts of patent infringement. Typically this requires a team of at least two people – an engineer and a lawyer – although some patent office examiners may combine the necessary skills in one person.

### **What standards will be included in the registry at EUIPO?**

The registry will include any standard, from any SDO worldwide, for which an EU SEP exists, and which is notified to the EUIPO by an SEP owner, implementer, or SDO in accordance with the SEP Regulation. This is a very uncertain scope and does not bear any relationship to the question of whether there is market distortion that requires regulatory intervention.

### **How might the EUIPO essentiality assessment be used?**

At court the question of essentiality determines the question of infringement. Together with validity, this is a central question in any patent claim, and so the court will conduct its own assessment. Both parties will submit detailed expert engineering evidence, which the court will then investigate (in the UK, this is done through cross examination of expert witnesses). The parties will also argue questions of legal interpretation of the patent claims. The cost of such proceedings will be in the order of many millions of euros. Accordingly, the relatively brief essentiality assessment conducted by the EUIPO may provide some useful information, but it will not be of any persuasive force in court proceedings.

Essentiality can only ever be conclusively determined by a court, given that the meaning of “essential” means that if a patent is deemed essential to a standard, and a company is using the standard, then infringement is held to occur. Parties will therefore always argue about the essentiality of particular patents in the course of a negotiation. In a negotiation for a multi-million euro global portfolio license, parties will not treat the EUIPO’s assessment as persuasive or definitive, although it may provide useful information. This is also the case with court proceedings. Ultimately a license may relate to hundreds or even thousands of patents, so essentiality assessments of individual patents can only form part of the picture.

### **Is there any downside to the SEP registry and essentiality assessment procedures?**

The additional cost of these procedures ultimately will be borne by consumers. It is questionable whether the procedures add anything to the existing services available to negotiating parties, or that they enhance the parties’ own capabilities, in the current landscape of large licenses between large companies for mainstream products. The shift towards licensing in the auto industry has the same characteristics, save that a dedicated SEP licensing platform (Avanci) has been made available. This has the potential to relieve companies of bilateral license negotiations (most auto makers have chosen the Avanci route as being more efficient). The more numerous the prospective licensees are within any product sector the more likely it is that successful pool arrangements will be developed. Currently these procedures are aimed at assisting in a hypothetical market situation that has yet to arise.

### **What incentives does the SEP Regulation create, in relation to the notification of SEPs for inclusion in the registry?**

Because there are penalties for not registering a patent within a set period, the Regulation incentivises patent owners to register more, rather than fewer, patents. There is also a disincentive, in the form of the statistical reporting of essentiality “rates”, based on the random sampling approach. This may drive the opposite behavior, that is, registering only a few patents. If the register is to be compiled based on patent owners’ good faith efforts to

assess essentiality for themselves, then trying to manipulate that behavior through incentives (in either direction) is likely to backfire. The idea that the registry will have a large part to play in assisting negotiations in the real economy is misconceived, as explained above.

## **FRAND Determinations**

### **How is confidential information managed in relation to FRAND determinations under the SEP Regulation?**

In the current landscape of bilateral licensing (as opposed to pool licensing) manufacturers seek to gain competitive advantage by reducing the input costs of licensing. The percentages are small but, because of the volumes involved, the sums are large. The exact terms of bilateral licenses are therefore regarded by manufacturers as commercially very sensitive and highly confidential. Courts go to a great deal of procedural trouble to protect this confidentiality in proceedings so that they are able to look at and consider comparable licenses. The third parties concerned in those licenses are represented at court and always seek to protect their confidentiality interests.

In this context the confidentiality provisions of the proposed SEP Regulation are exceptionally brief and provide little reassurance.

The Regulation also supposes that this difficulty can be addressed by providing that a “non-confidential version” of documents should be offered that still conveys necessary information. However, this is not possible where the information that is needed largely comprises numerical values such as lump sum amounts, percentage rates, dates for payment, volumes of product and the period for the license. There can be no meaningful “non-confidential version” of such information.

## **The SEP Regulation provides for a FRAND determination procedure. Do courts conduct FRAND determinations? Who else might conduct a FRAND determination and in what context?**

Yes, some courts do (see above).

FRAND determinations can always be conducted based on contractual agreement between the parties, as for instance in the context of an arbitration or expert determination. In those circumstances, it would be up to the parties to choose who should do that work. In the case of disagreement, there are rules governing this in the procedures of arbitral institutions.

## **Under the SEP Regulation a “conciliator” may be appointed by EUIPO to carry out a FRAND determination process. What skills should this person have?**

If you view the process as arriving at an expert view of the appropriate terms, then the conciliator needs the same skills as the evaluator of an aggregate royalty (see above). If you view the task as being to mediate between parties that are failing to negotiate successfully for some reason, then the skills needed are to do with understanding, communication, respect for the individual – in other words mediation and negotiation skills.

## **How binding is the FRAND determination on the SEP owner or implementer, under the process set out in the SEP Regulation?**

Even though the Regulation provides that a party must commit to comply with the outcome if a FRAND determination is to proceed, the procedure remains non-binding. It could not be otherwise, unless the EUIPO were to be given the powers of a court of law. This means that it is possible for a party to cause significant delay and disadvantage to another party by committing to the outcome and then withdrawing that commitment or refusing to accept the reasoned proposal at the end of the process. This is made worse by the fact that one party can proceed with the determination even where the other party does not agree to

participate. Because the legal effect of making a “commitment” that is non-binding is unclear, parties that are well advised are unlikely to make such a “commitment”. (Note: SEP owners cannot go to court without first having gone through this FRAND determination procedure, which delays access to the courts by as much as 10 months.)

## **How might the EUIPO’s FRAND determination be used later?**

It would likely be used in negotiation to set a ceiling from which a licensee would seek to negotiate downwards. It might eventually be used as evidence in litigation, although a court would still conduct its own assessment.

## **Confidential Information**

### **What concerns might there be about the SEP Regulation, overall, in relation to the provision and management of confidential information?**

The processes in the SEP Regulation are geared towards developing the largest possible confidential database of market data concerning SEP licenses, to be held by the EUIPO. All parties involved in SEP licensing (including SDOs) worldwide are required by the Regulation to provide this information to the EUIPO. The confidential information will be made available to conciliators and evaluators appointed by the EUIPO, to member state courts, and to other EU public bodies. The value of that information is literally incalculable, and the likelihood that bad faith attempts will be made to access the confidential database for private purposes is high (for instance by applying to be appointed as an evaluator or conciliator, or by requesting information through another EU public body). It is not possible to be confident of the arrangements to operate and secure the database without detailed rules and procedures, including provision for their enforcement or for effective recourse if such arrangements fail.

## **Is it possible to provide “non-confidential versions” of documents under all processes created under the SEP Regulation?**

Not really, because the relevant information comprises numerical values – for example lump sum amounts, royalty rates, payment dates, product volumes, and the period of the license. See above.

## **The Regulation requires owners of SEPs that are in force in EU Member States to submit information about the outcome of alternative dispute resolution (ADR) proceedings related to those SEPs, including licensing terms and methodologies employed. Comments?**

To the extent this requirement purports to bind non-EU companies in respect of ADR procedures conducted outside the EU, it is unclear whether it is legally effective. In ADR procedures it is almost universal practice to agree strict confidentiality provisions. This requirement under the Regulation therefore purports to bind all parties to ADR procedures (including those based in the EU) to breach their contractual obligations of confidentiality, made expressly under whichever laws govern the ADR procedure in question. It is questionable whether this can be legally effective. If in fact it is effective it will greatly reduce the attractiveness of ADR procedures for all parties, since the EUIPO database will present a risk to all concerned.

## **EUIPO: Practical Considerations**

### **How will EUIPO need to recruit to secure the right expertise to carry out the procedures under the SEP Regulation?**

See above. The only personnel who may combine the necessary engineering knowledge, knowledge of the standards, and legal knowledge are possibly patent office examiners (although their knowledge of the details of

technology standards may be quite limited). Usually, essentiality checking and debate over FRAND terms is conducted by a team of professionals working for the companies concerned and in private practice firms of advisers.

### **What costs are associated with carrying out the types of procedures set forth in the SEP Regulation?**

To provide one example: to review a patent for suitability for litigation (including a thorough review of essentiality) usually costs at least 10,000 euros. It can cost significantly more.

### **What can we expect for the EUIPO with respect to recruitment, timeline, and costs?**

We do not know the scope of the SEP Regulation, in terms of its application to existing and future standards and use cases. Therefore any assessment of the required resources for the EUIPO is guesswork. If any significant published standards are to be included, then the proposed timeline will be very challenging and quite likely not feasible. The EUIPO will need to develop comprehensive and secure procedures (as there are none in the proposed Regulation) and it will be difficult to recruit experienced personnel. People with the necessary expertise are profitably employed already because standardized telecommunications technology is hugely successful (indeed, it has transformed the world) and expertise is therefore valuable.

## **Micro, Small and Medium-sized Enterprises**

### **How does the SEP Regulation, overall, improve the ability of MSMEs to understand and navigate the SEP marketplace in Europe?**

This question is irrelevant, because MSMEs do not have to navigate the SEP marketplace (unless, in rare cases, they are contributors to standardization). That said, the Regulation may result in a register that identifies the main SEP holders – although that cannot be certain, and the information is freely available elsewhere already. It may also identify at least some



essential patents – but there are thousands, and that information is commercially available already. It will also provide a mechanism whereby an MSME could obtain a non-binding determination of FRAND terms from the EUIPO, if that were necessary.

## **Does the SEP Regulation encourage SEP owners to give preferential licensing terms to MSMEs?**

The SEP Regulation encourages SEP owners to consider giving preferential licensing terms to MSMEs.

## **How do SEP owners engage with MSMEs normally in the marketplace?**

They do not engage with MSMEs, or indeed with SMEs more generally.

## **Impact of the SEP Regulation**

### **How might the SEP Regulation affect decision-making by SEP owners?**

Below are several examples of the expected impact on SEP owners:

- SEP owners would have to decide which patents to include in the new registry. There are penalties for not including patents so owners may register more, rather than fewer, patents.
- Any court proceedings in the EU will be delayed by the FRAND determination procedure for up to 10 months. There are also penalties for not “committing” to the outcome, even though this is non-binding. SEP owners may therefore choose to commence litigation outside the EU.
- The Regulation requires SEP owners to provide highly sensitive commercial information to the EUIPO if they engage in ADR (such as arbitration or mediation) anywhere in the world. SEP owners may therefore choose not to engage

in ADR, or to ignore the requirement in the SEP Regulation (which may in any event not be legally effective).

- Over the longer term, SEP owners will have to decide where to patent their inventions. If they do not litigate in the EU, they are less likely to apply for EU patents.
- In the event that an aggregate royalty assessment procedure is commenced at the EUIPO, most SEP holders will be obliged to participate, as will all the major stakeholders (device manufacturers, their suppliers, and even entire industries that use the standard such as car manufacturers, network service providers, and trade associations) because the sums at stake will be massive.

## **What is the evidence base for the SEP Regulation?**

There has been a very thorough investigation of the factual context by an independent team appointed by the Commission. Their conclusion was that there is no clear evidence of market conditions that would justify a regulatory intervention of this kind. The report *Empirical Assessment of Potential Challenges in SEP<sup>6</sup> Licensing* sets out useful background information for stakeholders seeking to better understand the debate.

## **Why has the SEP Regulation been criticized as denying access to justice for SEP owners?**

This critique relates to the enforced delay of up to 10 months for the FRAND determination procedure to be completed, a requirement before any SEP owner can seek injunctive relief. This occurs even if only one party participates in the process. Although the non-participating party cannot commence proceedings, the other party may do so in the meantime, which is also inequitable. Undue delays in access to IP enforcement proceedings constitutes a violation of the WTO TRIPS Agreement.

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<sup>6</sup> *Empirical Assessment of Potential Challenges in SEP Licensing*, by Dr. Justus Baron, Northwestern University, Prof. Dr. Pere Arque-Castells, University of Groningen, Prof. Dr. Amandine Leonard, University of Edinburgh, Dr. Tim Pohlmann, IPLytics, and Prof. Dr. Eric Sergheraert, Universite de Lille, April 2023, EU Commission.



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