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Declaration of Originality

I declare that the project report here submitted is original except for the source materials explicitly acknowledged and that this report as a whole, or any part of this report has not been previously submitted for the same degree or for a different degree.

I also acknowledge that I have read and understood the Rules on Handling Student Academic Dishonesty and the Regulations of the Student Discipline of the University of Macau.

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Abstract

With the expansion of the trend of globalization of economic development, science and technology plays an increasingly important role in the stage of economic globalization. Innovation in science and technology is an inherent driving force for economic development. Therefore, all countries are speeding up the pace of technological reform and innovation, supporting relevant laws and policies to protect the exercise of intellectual property rights, and focusing on protecting the rights and interests of intellectual property rights holders, so as to stimulate market vitality and promote market competition. With the rapid development of communication technology, patents and technical standards have gradually become more and more intertwined, and Standard Essential Patents have come into being. The combination of patents with private attributes and technical standards with public attributes has triggered conflicting interests at different levels, and the disputes arising from these conflicting interests often trigger the effect of hindering market competition. As the main battleground of the patent war in the EU and has been striving to build a European single market, how to reconcile the balance of interests brought by standard essential patents under the regulation of EU competition law is the focus of this project. The first part of this project elaborates the meaning and characteristics of Standard Essential Patents, which are prone to conflict of interests due to their monopolistic and public interests attributes. So the second part starts from the conflict of interests. It's about studying and researching the historical process and legislative exploration of the EU competition law on the regulation of intellectual property rights, and analyzing how the EU competition law on the regulation of Standard Essential Patents reconciles the issue of balance of interests. In order to understand the conflicting interests in a more concrete way, the third part is going to

summarize three cases, from the introduction of the antitrust defense in the Orange Book Standard case to the expansion of the *Motorola v. Apple* case to address the circumstances under which the antitrust defense can be proposed, and then the *Huawei v. ZTE* case, which attempts to build a specific framework for coordinating the balance of interests. This part is about analyzing the changes in the European Union's thinking on the resolution of conflicting interests issues in justice and the exploration of the intermediate path. The fourth part is a reflection and discussion on the European Court of Justice's decision, followed by some thoughts on Standard Essential Patents in the 5G field.

Key words: European Union; Competition Law; Standard Essential Patent; Balance of interests

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List of Abbreviations

CD-R	Compact Disk-Recordable
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
CJEU	Court of Justice of the European Union
ETSI	European Telecommunication Standards Institute
EU	European Union
FRAND	Fair, Reasonable, and Non-Discriminatory
GPRS	General Packet Radio Service
IP	Intellectual Property
IPR	Intellectual Property Right
SEP	Standard Essential Patent
SSO	Standard Setting Organization
TFEU	Treaty on the Functioning of the European Union
TTBER	Technology Transfer Block Exemption Regulation

Chapter 1 Introduction

1.1 General background

Technological innovation and compatibility between products have all contributed to the process of global economic integration in varying degrees. The rapid renewal of technology reflects the high demand for efficiency, and the combination of standards and patents precisely promotes the efficiency and universal applicability of technology. The compatibility between products also facilitates the maximization of the social value of new technologies, eliminating unnecessary duplication of resources and waste of resources, thus better protecting the interests of consumers and the public. The development and promotion of the standardization process of patented technologies has brought new challenges. As the industry adopts the technical standard, it deepens the exclusivity and monopoly of the patent in that technical standard. The conflict of interests that exists between patents and technical standards has gradually become apparent, and with the development of communication technology, this conflict is increasingly reflected in disputes in various cases. Because of the special nature of the combination of patented technology and standards, more and more countries are seeking a new solution - the regulation of antitrust. From the Orange Book standard case to the *Huawei v. ZTE* case, legislation and justice are constantly exploring the path to solve the problem, and the role of competition law in regulating standard essential patents is increasing. As the main battlefield of patent disputes, the EU has rich experience in solving the contradictory issues between

standard essential patents and competition law, so it is necessary to study the standard essential patents under the EU competition law regulation.

1.2 Specific background

When standards and patents meet to form a standard essential patent, the standard essential patent owner is in an advantageous bargaining position due to the exclusivity of the patent and the general utility of the standard. In this case, the implementer who wants to adopt a standard must use the patent of the standard essential patent owner, and the use of the patent must be agreed by the standard essential patent owner, and the implementer is in a passive position. Mark A. Lemley and Carl Shapiro were among the early scholars to raise the issue of patent holdup. Some scholars argue that in reviewing FRAND commitments in different disputes, courts' understanding of FRAND should draw conclusions from focusing on the behavior of the standard-essential patent owner and implementer, rather than just the surface meaning. In judicial practice, the decision of the case *Huawei v. ZTE* provides a more complete and clear idea for the EU to use competition law to regulate Intellectual Property Rights disputes, and provides a reference for the resolution of subsequent cases. At the same time, the publication of the EU Approach proposed to create a predictable implementation environment for standard essential patents, and also put forward many new guiding suggestions, such as the creation of a new dispute resolution method and regulations on licensing rates, which provide ideas for judicial practice to solve the problem.

1.3 Research goals and objectives

As a pioneer in patent standardization, the EU has certain experience in dealing with the competition law defense of standard essential patents at the legislative and judicial levels. It is worthwhile to analyze and study the EU standard essential patent prohibition rules and the competition law defense system, and explore whether there is a better solution path under the competition law system.

1.4 Research methodology and design

This project report mainly adopts the following research methods:

1.The Empirical analysis method, through the relevant jurisprudence of the German courts and the European Court of Justice to summarize the judicial trends in Germany and the EU for the antitrust defense of standard essential patents.

2.Using the literature research method, this report searches for key words such as "EU, standard essential patents" and summarizes the ways to deal with the standardization of patents in the European Union.

1.5 Potential contributions

Through the study of cases and following the hot spots of judicial practice, this report argues the feasibility of competition law regulation of standard essential patents in judicial practice. Combining the European Union's standardization organizations' intellectual property policies, the EU standardization legislation and the European

Commission's decisions, this report combines theory and practice to analyze how the EU uses competition law to regulate standard essential patents. It is noted that reconciling the potential balance of interests between the two sides of essential standard patents and competition law is key.

Chapter 2 Overview of standard essential patents and conflicting interests

2.1 Overview of standard essential patents

2.1.1 Introduction of standards

Before understanding the concept of Standard Essential Patents, it is important to first understand what a standard is. The term 'standard' is defined as a: "document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context."¹

In simple terms, a standard is a document that is agreed upon by a certain procedure, used by common consent, established together and approved by an institution, typically such as what technology is used for a product, etc.

This document is normative and its goal is to achieve the best economic order and social efficiency within a certain range. Standards provide rules for the common use of the product's manufacturing process and production methods, etc. More

¹ The term 'standard' is defined in EN 45020:2006 Standardization and related activities – General vocabulary (ISO/IEC Guide 2:2004).

specifically, standards are in fact similar to a market entry threshold, and to enter a certain market it is necessary to ensure that these standards are met, so standards are norms as well as guidelines. The scope of standards in a broad sense covers many fields, while standards in a narrow sense generally refer to technical standards, which are smaller in scope than standards, and technical standards are generally related to emerging technology industries such as information and energy. Technical standards are created through the negotiation of standards in individual cases by members of standardization organizations that set product, service, technical or quality requirements in an institutionalized process. For example, products and services such as electronic products and mobile communications that we use every day contain a large number of technical standards, without which different brands and models of electronic products would not be compatible with each other, and mobile communications could not develop so rapidly.

There are several concepts that need to be clarified. Technical standards are a technology specific implementation or detailed technical program of the prescribed documents, used to measure whether the relevant products or services meet certain safety requirements or market access requirements, with a certain mandatory and guiding function. Usually a good technical standard should be able to be universally applied by the society. Thus, it can be seen that technical standards have a strong public interests and are a kind of social public resource, and they are formulated to promote public interests. The patent right, on the other hand, has always existed as an

exclusive right, and its main feature is monopoly. By disclosing its patented technology, the patentee is granted monopoly rights in the technology for a certain period of time and in a certain geographical scope and conditions by law.

In other words, a technical standard is to bring technology into the public domain, while a patent is to make technology private property, which is a mutually exclusive pair of contradictions. However, it is clear from the definition of technical standards that the essence of making technical standards is to promote public interests and obtain social benefits, so immature and backward technologies cannot be included in technical standards. With the development of high-tech and the advent of the knowledge economy, most of the masters of new technologies have a strong sense of intellectual property protection, so it is increasingly difficult to avoid patented technologies when formulating technical standards. This has led to the emergence of standard essential patents.

2.1.2 Introduction of standard essential patents

With the continuous progress and development of science and technology, the phenomenon of convergence of standards and patents has started to appear in many industries, especially in the information and communication technology industry. In order to have a deeper understanding of the concept of standard essential patents, it is necessary to first clarify the definition of patents and technical standards respectively. In accordance with the organization: “A patent is an exclusive right granted for an

invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem”.² Patent is the invention creation itself protected by the patent law, which means that the competent state patent authority, upon the application of the inventor, grants him/her the exclusive right to implement the invention for a certain period of time after the invention has been examined and qualified according to the law. A technical standard, on the other hand, is a normative document that specifies a specific implementation method and requirement scheme for a technology and is used to measure whether the relevant product or service meets certain safety requirements or market access requirements. According to European Commission: "Standard Essential Patents are patents essential to implement a specific industry standard".³ This indicates that standard essential patents are the product of a combination of technical standards and patents.

2.2 Characteristics of standard essential patents

2.2.1 Standard essential patents have monopolistic nature

The patent right is a private right, which is exclusive in nature. By disclosing its patented technology, the patentee is given the monopoly right in the technology under

² Definition of ‘Patent’ given by World International Property Organization is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application.

³ European Commission, Antitrust decisions on standard essential patents (SEPs) - Motorola Mobility and Samsung Electronics - Frequently asked questions.

certain circumstances. Therefore, the patent right has always existed as an exclusive right, it is monopolistic. The purpose of the patent system is to encourage inventions, protect the patent rights of inventions and thus promote scientific and technological progress and innovation. The patent owner may decide to use his invention or authorize others to use it, and no one else may use the invention without the patent owner's permission. The patent owner's rights and his achievements are protected by law and in such a way as to generate revenue. In this way, this special monopolistic nature serves as an incentive and guide for market participants.

In addition, it also stimulates market competition in the field of innovation and stimulates innovation. If a patent is infringed, the infringing party is required to stop the production and sale of such products and to assume the liability for the infringement. The special nature of essential standard patents leads to the fact that, on the one hand, other market participants must design and produce products in accordance with the existing standards, and "in accordance with the standards" means using the patented technology regarded as the standards, and due to the monopoly, the use of essential standard patents requires the permission of the patent owner. This makes other participants in the market vulnerable to the disadvantage of -- in commercial negotiations.

On the other hand, one might wonder whether one could turn to seeking other alternative technologies. However such an approach would require more substantial

costs and time, and furthermore, there are alternative technologies to standard essential patents that are difficult to develop. For most market participants, they would rather pay for a patent license than spend a lot of time and cost to develop alternative technologies. This will be further elaborated in the following section on the irreplaceability of essential standard patents. Generally speaking, the standard essential patent naturally has the monopoly and exclusivity.

2.2.2 Standard essential patents have public nature

According to the definition of standards, it can be known that it has certain mandatory and guiding functions. Because the standard is open, the technology license related to the standard essential patent is public in nature and involves the public interests of society. Technological innovation is directly related to the reform of social productivity, and the standardization of technology has the function and role of simplifying, unifying and systematizing technology. The mutual movement of standards and innovative technologies can improve efficiency, achieve faster diffusion of innovation and technological innovation in related technology fields, bring incentive economic benefits to innovative enterprises, and cause a chain effect of related industries upstream and downstream, thus promoting the adjustment of industrial structure. Thus, it can be seen that essence of technical standards is a kind of social public resources. Technical standards are formulated to promote public interests and obtain social benefits. This makes standard essential patents different from ordinary patent rights and have a social public nature.

2.2.3 Standard essential patents are irreplaceable

Since standard essential patents were originally developed by standard-setting organizations, the combination of standards and patents reinforces the monopoly of intellectual property rights that they originally had. It also creates its irreplaceability. Irreplaceability is reflected in two aspects. One is based on technical factors, there is no other technology that can replace the standard essential patent. The other is based on commercial considerations, although there are technologies that can replace the standard essential patents, but because of the high cost of conversion of technical solutions or the difficulty of mass production according to the standard, the alternative technical solutions do not have the value of utilization and cannot reach general industry and consumer acceptance.

Because the purpose of industry-established standards is to allow the entire industry to adopt a specific technological solution and abandon other alternative technologies. And this is one of the reasons why the creation of standards can lead to increased efficiency. When an industry implements a specific technology standard, other technology developers in that industry can innovate and develop new technologies based on the existing ones, avoiding the waste of resources and increasing the speed and efficiency of research and development. Coupled with the fact that technologies that have been selected for inclusion in standards are generally superior to other technologies in terms of completeness and sophistication, when a patented technology

becomes a standard essential patent, it means that it has irreplaceability. It's not allowed to rely on the standard but does not use the teaching of patent, which also means that there is no substitute for each standard essential patent.

2.3 FRAND principle of standard essential patents

2.3.1 Presentation of FRAND principle

Basically, standards organizations will make some restrictions on the rights of standard essential patent owners, typically such as requiring patent owners to disclose information about standard essential patents and requiring patent owners to make FRAND (Fair, Reasonable, Non-Discriminatory)⁴ licensing statements. As more and more patents are incorporated into standards, in the process of licensing and enforcing standard essential patents, standardization organization imposes an obligation on the patentee to make the patent available for enforcement under fair, reasonable and non-discriminatory licensing conditions. In order to qualify for the incorporation of patents into technical standards, the patentee commits to the standardization organization that it will license the patents on terms that are consistent with the FRAND principle. Thus, the FRAND principle has become one of the important rules for standard essential patents.

Since the patentee has spent a lot of costs for the patent, it is likely to take the

⁴ European Commission, Introductory remarks on Motorola and Samsung decisions on standard essential patents, press conference, Brussels, 29 April 2014. "FRAND" terms – or "Fair, Reasonable and Non-Discriminatory".

opportunity to propose unreasonable conditions and license fees by relying on its advantageous position after the patent is incorporated into the standard in order to obtain considerable benefits, resulting in the phenomenon of patent hold-up⁵ and thus hindering competition in the market. In order to prevent patent owners from abusing their dominant market position, major international standardization organizations, when formulating intellectual property policies, usually require their members to sign a commitment to license third parties to use patents based on a fair, reasonable and non-discriminatory statement, and this commitment is known as the FRAND commitment. In order to prevent patent owners from abusing their dominant market position, major international standardization organizations, when formulating IP policies, usually require their members to sign a commitment to license third parties to use patents based on a fair, reasonable and non-discriminatory statement, and this commitment is known as the FRAND commitment.

2.3.2 Components of FRAND Principle

The FRAND principle has three components: the principle of fairness, the principle of reasonableness and the principle of non-discrimination.

The principle of fairness means that both parties should be on an equal footing in the negotiation, and it is a violation of the principle of fairness for the patentee to threaten

⁵ Mark A. Lemley. Ten Things to Do about Patent Holdup of Standards (and One Not to), Boston College Law Review, vol. 48, 1, 2007, p. 155.

the implementer with unequal licensing terms by refusing to license. Unlike ordinary patents, standard essential patents are irreplaceable. When the patent owned by the owner of the standard essential patent is incorporated into the standard, other market participants engaged in production and business activities in the relevant field must obtain the license from the owner of the standard essential patent in order to implement the technical standard if they do not want to be excluded from competition in the relevant market. Obviously, the licensee is in a passive and disadvantageous position in the license negotiation. The special nature of the standard essential patent determines that the owner of the standard essential patent has an advantageous position in the license negotiation. Taking advantage of the advantageous position to demand unreasonable license fees is called patent holdup, and patent holdup is obviously not in line with the principle of fairness. The principle of fairness applies to both the patent owner and the licensee. Therefore, in talking about the fairness principle in standard essential patent licensing, for the patentee, it is a commitment not to use its own bargaining position to demand unreasonably high prices and to maximize the licensee's bargaining position. For the licensee, it is to prevent the licensee from taking advantage of the difference in understanding of the FRAND principle between the two parties to deliberately delay the license negotiation time and pay the license fee. Balancing the interests of both parties in the licensing of standard essential patents is the key to the principle of fairness.

The principle of reasonableness means that the patent license fee needs to be

reasonable. In many cases, the key to balancing the interests of the patentee and the licensee is the license fee. Patent license fees need to be considered in various aspects, and how to determine the license fee rate has always been a complex problem that needs to be analyzed on a case-by-case basis. To summarize, if the license fee is to comply with the principle of reasonableness, it cannot be an excessive price demanded by the standard essential patent owner who threatens the licensee with its own superior bargaining position, nor can it be an excessive low price demanded by the licensee who delays the payment to hold out the patent owner in reverse.

The principle of non-discrimination requires that similar license terms be granted to similarly situated licensees⁶ without discrimination. When entering into a licensing contract, the principle of non-discrimination means that there is no discrimination, at least literally, in terms of price or otherwise. However, because the same patent does not create the same value in different fields of technology, this strict definition does not give the best effect to the "non-discrimination" principle. The "non-discrimination" principle does not mean that all implementers pay the same license fee, but rather that "if similarly situated implementers pay the same license fee".

In general, the purpose of the FRAND principle is to prevent patent hold-up and to balance the interests of all parties in order to achieve a balance in the public interests.

⁶ The term "similarly situated licensees" refers to companies in a similar industry with a competitive relationship.

2.4 Conflicting interests between standard essential patents and competition

2.4.1 Summarizing the conflicting interests

It is undeniable that since both intellectual property and competition law have the same goal - to stimulate innovation - they are in fact complementary. However, on the other hand, there are conflicts and contradictions between them.

First, from the definition of standards to the characteristics of standard essential patents, and then to the purpose of maintaining market competition, it is obvious that there is a conflict of interests, which could be summarized in several aspects. First of all, there is a conflict in the concept of SEP per se - the public interests attribute of standards and the private right attribute of patents. The development of technical standards allows society to use the technology in common, saving costs and avoiding waste of resources. The development of widely used standards for industry use enables competitors to compete at the same level and maintains a fair order of market competition, so as to safeguard the development of the public interests of society. Patent rights, on the other hand, create a positive environment and atmosphere for technological innovation by protecting private rights and encouraging technological reform and innovation. A standard essential patent has two attributes at the same time - the nature of private right and the nature of public interests. This conflict makes standard essential patents special in the field of patent rights, and the path of regulation and resolution is different from that of ordinary infringement of private

rights of patents.

Furthermore, the cost of inventing a patent, from research and development, manufacturing to patent application, is significant, so the patentee often hopes to get high revenue by virtue of the patent. However, high patent licensing fees may affect the potential licensees' entry into the competitive market, thereby affecting the order of competition in the market. Lack of competition will make it difficult for the market to continue to stimulate new creativity. It is not friendly to the development of the market. Even if the licensee accepts the high license fee, the final result will only be an increase in the price of the product, thus transferring the high fee to the consumer, which will harm the rights and interests of the consumer.

It follows that the second conflict exists between the owner of the standard essential patent and the licensee. In the process of determining whether the abuse of patent rights constitutes a competition violation, if the threshold for determination is set too high, it means that the conduct of the standard essential patent owner will in most cases not be found to be anti-competitive. As a result, licensees would be in a more passive position, and would have to comply with the patentee's unreasonable licensing requirements in order to obtain a license. The patentee would then have an advantage in commercial negotiations, which would undoubtedly amplify the "patent holdup" scenario. The scale tilts excessively to the patentee's side, causing damage to market competition and not conducive to the achievement of the goal of stimulating

innovation.

On the other hand, if the restrictions on the rights of the owners of standard essential patents are too harsh, it may lead to reverse patent holdup. Reverse patent holdup is manifested by the fact that the licensee does not have a real intention to conclude a contract, nor does it have a willingness to negotiate the license terms, license rates, and other issues. The licensee delays the negotiations by claiming that the patentee's license terms are contrary to the FRAND principle in order to reduce or delay the payment of royalties. The patentee, in turn, waives its rights in order not to be dragged into lengthy litigation. The reverse patent holdup makes the patentee face the possibility of being sued for violating the competition law even if it meets the licensing requirements of FRAND. In this way, not only the rights of the patentee are greatly damaged, but also the innovation vitality of the market is reduced, and the increase of litigation costs eventually causes the price of products to rise, which ultimately damages the rights and interests of consumers.

In fact, whether it is the patentee taking advantage of a dominant negotiating position and thus causing the phenomenon of patent hold-up, or the licensee taking advantage of the constraints and restrictions imposed on the patentee by the rules, refusing to negotiate and delaying payment to cause reverse patent hold-up⁷, both hinder the

⁷ Gregor Langus & Damien Neven. Standard Essential Patents: Who is Really Holding up (and When) ? *Journal of Competition Law & Economics*, vol.9, 2, 2007, p.253.

development of the market. Therefore, it is important to develop appropriate standards for determining competition violations. And this reflects the importance of reconciling the incentives for innovation with the preservation of competition. The logic behind taking into account the incentive for innovation while focusing on competition is to coordinate the various characteristics of standard essential patents, balance the conflicting interests of patentees and licensees, and maintain the balance of the scales in order to get out of the dilemma of anti-competitive disputes over standard essential patents.

Chapter 3 Legislative regulatory framework on SEP and competition

3.1 Regulation of EU competition law

3.1.1 The basis for regulating the abuse of standard essential patents

Articles 101 to 109 of the Treaty on the Functioning of the European Union (TFEU)⁸ are the rules governing competition, providing for both substantive and procedural norms governing competition conduct. The EU has made many attempts in its pursuit of integration. The EU was initially committed to the establishment of a customs union, the purpose of which was to establish a common market and improve economic efficiency. Therefore, it is necessary to ensure fair and effective competition among enterprises. The establishment of the competition law framework, from the customs union to the establishment of the single market, has maintained the

⁸ Consolidated version of the treaty on the functioning of the European Union

development of EU integration to a certain extent. The Treaty on the Functioning of the EU, as the basis of the EU competition law, defines the basic principles and the basic framework of the EU competition law.

In the EU competition law system, the provisions of the TFEU on competition are the first level legislative norms. Article 101 prohibits cartel⁹ and regulates agreements that have the effect of restricting competition, but also proposes exceptions, and these exceptions revolve around two cores - the promotion of efficiency and the protection of consumer rights, from which it can be concluded that the ultimate goal of competition law is to point to the protection of consumer rights, that provides the basis and direction for subsequent guidelines, decisions, etc. Article 102 prohibits the abuse of market position and provides for the relevant market, the dominant market position, the abuse of dominant market position and the effect of restricting competition. In fact, it can be summarized from the provisions that the ultimate object of the regulation of the article is not the operator with a dominant market position, but the operator who abuses the dominant market position. It is because of the abuse that causes the effect of preventing competition. Although the relevant provisions of the TFEU seem to be not specific enough, the actual regulation of the above two major areas has laid down the basic legal framework of EU competition law.

⁹ A cartel is a group of independent companies which join together to fix prices, to limit production or to share markets or customers between them.

3.1.2 Legislative regulation of IPR by competition law

The European Commission issued Regulation 316/2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements. (Regulation 316/2014)¹⁰ The Regulation clarifies the restrictions and exemption conditions for intellectual property-related technology license transfer agreements, reflecting the advanced nature of the European Union's intellectual property antitrust policy. It is regulated by means of a "safe harbor". According to the safe harbor system, technology license agreements that fall into the safe harbor cannot contain prohibited or excluded provisions. In other words, if a technology transfer agreement includes the core restrictive provisions of the Regulation, the agreement will be deemed to have the purpose of restricting competition, which is prohibited by Article 101 of TFEU, and the block exemption will not apply to the entire technology agreement. At the same time, the Regulation on Block Exemptions for Technology Transfer Agreements focuses more on the analysis and assessment of individual cases. The four types of restrictive clauses specified in the Regulation that do not apply to block exemptions do not automatically apply to exclude block exemptions, but require an analysis of the effects of competition, rather than a generalized categorization to determine whether they can be exempted.

This Regulation adopts a more stringent standard review for restrictive provisions; on

¹⁰ Commission Regulation (EU) No 316/2014 of 21 March 2014 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of technology transfer agreements.

the other hand, some provisions no longer automatically apply the safe harbor principle, but are subject to case-by-case evaluation, which also makes the application of the Regulation more flexible. The Regulation reflects the European Commission's adoption of more stringent and flexible rules for examining the competition effects of IPR transfers, licenses and enforcement.

3.1.3 Guidelines for the assessment of horizontal cooperation agreements

The Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements (the Guidelines on Horizontal Cooperation Agreements) ¹¹give clear rules for standardization agreements. The Guidelines also mention that in the framework of Articles 101 and 102 of the TFEU, when an EU standardization body is considered as an enterprise or a federation of enterprises, its standardization activities shall be subject to competition law.

The first is an exploration of the potential for standardized agreements and standard clauses to restrict competition. The anti-competitive potential of technical standards is mentioned. When a technology is incorporated into a standard, the technology becomes irreplaceable and other operators must use the standard in order to produce the relevant product or to enter the relevant market, which restricts potential

¹¹ Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements

competitors from entering the relevant market and affects the development of innovation. And the way to restrict competition can be that standardization agreements may have the effect and impact of restricting competition by denying specific enterprises access to the standard. On the other hand, for the above-mentioned standardization agreements and standard provisions may restrict competition, the guidelines also give the exclusion of circumstances as a reference, that is, to meet what conditions will not have the effect of restricting competition. From ensuring that all potential competitors in the relevant market can participate in the development of the negotiated standard, to ensuring that the development process should be open and transparent, and finally to the need to commit to licensing with the principle of FRAND, guidance is given to exclude the restriction of competition from these three aspects.

There are two highlights in the guide, one is the "pass-on to consumers" factor, if a standardized agreement facilitates the compatibility between technologies, the standard can be considered to be in the interests of consumers. The analysis of this new factor makes the evaluation of standardized agreements clearer and more complete, reflecting the importance and necessity of considering the interests of consumers and the protection of the public interests. The consideration of the interests of the consumer is actually a concern for the public interests, and is a reflection of the guidelines for the coordination of conflicting interests. Secondly, the guidelines emphasize the "principle of reasonableness" and take a rather cautious approach to

interfere with standardized activities. The principle of reasonableness reflects that in the process of regulating a certain act under the competition law, a balanced consideration of various factors and interests of all parties should be made to make the judgment more reasonable and appropriate. It can be said that this guideline provides a preliminary framework for the balance of interests from the legislative level, focusing on the protection of the public interests of the society, and also reflects the protection of the autonomy of standardization activities.

3.1.4 The role of EU organizations

In order to eliminate trade barriers arising from different standards, the European Union has made a lot of exploration and efforts. The EU issued the Directive 98/34/EC in 1998¹², which legally recognized the three major EU standardization organizations.¹³ The directive provides that the EU is responsible for the development of basic rules and requirements, the three organizations are responsible for the development of specific standards applicable to the entire EU. Starting from the harmonization of the standard-setting organizations to deal with the complex and different technical standards situation in each member state, so as to promote the development of the EU single market.

¹² Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

¹³ Directive 98/34/EC, Annex I “European Standardisation Bodies-

CEN- European Committee for Standardisation

Cenelec- European Committee for Electrotechnical Standardisation

ETSI- European Telecommunications Standards Institute”

In order to avoid disputes between patentees and licensees during the implementation of the standards, the three organizations have formulated policies and guidelines to provide for the disclosure of essential patent information and patent licensing commitments. The CEN-CENELEC Guides¹⁴ explains what is an essential patent and highlights the importance and protection of patent rights. The ETSI Intellectual Property Rights Policy¹⁵ focuses more on the protection of licensees' rights and interests and ensures that licensees obtain patent licenses while ensuring that patentees do not take advantage of their dominant position to obtain unreasonable licensing conditions. These IPR-related policies and guidelines all aim to reconcile the balance of interests between patentees and licensees, as well as between intellectual property and technical standards.

3.1.5 Response of the EU approach to the balance of interests

The EU Approach¹⁶, published by the European Commission, suggests that in the current market context, there is an urgent need to provide a balanced, effective and predictable framework for standard essential patents. From improving the quality and

¹⁴ The CEN-CENELEC Guides are reference documents published by CEN-CENELEC to give orientation, advice or recommendations on standardization principles and policies and guidance to standards writers.

¹⁵ ETSI regulations related to intellectual property are published in ETSI directives, one being the 2017 revision of the ETSI Intellectual Property Policy in the form of Appendix 6. Annex 6: ETSI Intellectual Property Rights Policy.

¹⁶ Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee Setting out the EU approach to Standard

accessibility of databases to enhancing necessity review, the EU Approach proposes more specific guidance to enhance the transparency of SEPs in different aspects, providing a predictable environment for negotiation between the parties.

The EU Approach focuses on protecting the right owner by holding that the patentee has the right to refuse a license if the license fee is unreasonable and unfair, rather than a blanket rejection of the patentee's right to refuse a license. The EU Approach specifies the conditions for the patentee to file injunctive relief, indicating that the signing of a FRAND statement is not an indication that injunctive relief cannot be filed, but that certain conditions need to be met. In other words, the EU Approach confirms the feasibility of the injunctive relief rule. The EU approach proposes to avoid the abuse of injunctive relief by the patentee which causes patent holdup by allowing the implementer to prevent the injunction from being issued by way of providing a security deposit.

The EU Approach imposes requirements on the amount of the security deposit, which should be sufficient and not excessively lower than a reasonable rate resulting in a so-called reverse patent holdup situation. The EU Approach gives sufficient consideration to both the avoidance of patent holdup problem and reverse patent holdup problem to prevent any imbalance of interests.

Indeed, such a guiding method of working to reconcile issues of balance of interests is reflected in all aspects of the EU Approach. To balance the issue of conflicting interests is the core and key of the Approach. Through the balance of interests, it promotes the stability of market order and the development of the industry.

Chapter 4 Judicial path of SEP under the EU competition

4.1 The orange book standard case introduces competition law defense

4.1.1 Facts of the case

The plaintiff, the Philips Company, owns the patent for Compact Disk-Recordable (CD-R), which is called the orange book standard because its content is documented in an orange-skinned book. Any implementer wishing to use and produce CD-Rs under this standard had to obtain a license from the Philips Company, the patent owner. In 2009 Philips Company sued several CD-R manufacturers in German courts for unauthorized use of its patent, and Philips Company applied to the court for an injunction and damages. One of the defendants defended against the plaintiff's application for an injunction, and the defendant argued that this application for an injunction by Philips Company was an abuse of a dominant market position.

4.1.2 Injunctive relief

Injunctive remedies are mainly for ex ante prevention, which are taken to prevent the occurrence of future infringement. In contrast, monetary damages tend to be ex post compensation, mainly to compensate for the infringement losses incurred. Therefore,

injunctive relief, as a way to reduce ex post prevention, means that the patentee can use the right of injunctive relief to have the market expectation benefit that can be obtained alone. In judicial cases relating to standard essential patents, the patentee is required not to force the licensee to enter into unfair and unreasonable licensing agreements.

An injunction can lead to a backlog of manufacturer's goods and products, missed prime sales time, making the implementer's upfront investment in production, projected revenue and reputation take a heavy hit. The patentee to take injunctive relief to maintain its patent rights from infringement, which is the patent law gives the patentee the legal right, but combined with the characteristics of the standard essential patents, its irreplaceability leads to the patentee to take advantage of the market, with better negotiating conditions, easier and more likely to use the patent rights to monopolize and disrupt normal competition in the market. Therefore, restrictions on injunction applications are needed.

Standard essential patents belong to the scope of patents, so injunctive relief is originally a remedy for the owner of a standard essential patent to apply for court protection of its patent rights in accordance with the patent law. Normally, whether to grant injunctive relief only requires consideration of elements such as whether the implementer is actually infringing its patent rights.

However, based on the definition of a standard essential patent, it is a patent that must be used to implement a particular standard. There is no substitute for a standard essential patent. Therefore, when judging whether to grant injunctive relief in standard essential patent-related cases, courts also need to consider whether the enforcement of injunctive relief will reinforce the effect of excluding or restricting competition.

In the Orange Book case, the objective facts of the negotiations between the parties were used as the basis for whether injunctive relief should be granted for standard essential patents. The court considered both whether the standard essential patent owner had a dominant market position and whether the standard essential patent owner had reasonably and fairly refused to license. It also examined whether the offer made by the implementer was genuine and reasonable, and whether there were possible license fees reserved in an account, all of which could be judged and analyzed from an objective level. These are the factors that the court in this case took into consideration when determining whether to grant injunctive relief to the standard essential patent owner.

4.1.3 Competition law defense and limitations

Competition law plays an important role in regulating the issue of standard essential patents not only by playing the role of a gatekeeper, but also by being used directly as a defense for standard implementers in frequent case decisions. In the Orange Book

Standard decision, the German Federal Supreme Court held that an implementer could raise an antitrust defense, or called a competition law defense, to an injunction action brought by the patentee, even though the implementer had used the patent without the patentee's authorization.

In fact, the German court in the previous Spundfass case¹⁷ established two conditions for satisfying the competition law defense, that the patent license is an indispensable condition for entering the relevant market, and that the plaintiff refused to license without justification. However, such a defense is not complete and comprehensive, and in practice, the practice of the licensee in the license negotiation process should be taken into account, so that the balance of interests between the licensee and the patentee can be more properly handled and coordinated. In its decision, the German Federal Supreme Court added a new condition for the establishment of a competition law defense system - the requirement for the licensee. It refers to the need for the licensee to negotiate with the patentee and to make an unconditional, genuine, reasonable and acceptable license offer. The unconditional offer cannot be conditioned on the validity of the patent and the requirement to prove the actual existence of infringement. In other words, if the licensee's offer to license is conditional on the validity of the patent or on a judgment proving infringement, it is a conditional offer, and such a conditional offer does not reflect that the licensee is a

¹⁷ Federal Supreme Court, judgment of 13 July 2004, KZR 40/02, Standard-Spundfass. On the differences between a compulsory licence based on Section 24 of the Patent Act and a competition law-based compulsory licence, see also BPatG, judgment of 31 August 2016, 3 LiQ 1/16 (EP), Isentress.

bona fide licensee and makes the licensee suspect of delaying payment. Secondly, if the implementer uses the patent before the patent owner accepts the offer, which is so often the case in practice, the implementer in this case has to fulfill its obligation first, also called anticipatory performance, which requires the implementer to submit its information on use to the patentee and, at the same time, to take the initiative to provide the patentee with its financial situation to prove that it has the ability to pay the license fee. Further, the relevant fees should be paid or withdrawn. This requirement is to ensure that the legitimate rights and interests of the patentee are protected to a certain extent, and also to prevent the damage to the patentee's rights caused by the implementer's delay in payment.

The above two conditions provide an idea and reference for the subsequent cases, and demonstrate that in judicial practice, more and more attention is paid to the harmonization and balancing of conflicting interests. However, there are limitations to the Orange Book Standard rules. The Orange Book rule does not include FRAND licensing rules. Neither the membership of the standard organization of the owner of the standard essential patent, nor the FRAND license statement is an important element for the court to consider. However, according to the basic framework of competition law, when analyzing whether an actor has abused its dominant position, it is necessary to analyze whether the actor possesses a dominant position, and then to analyze whether it has abused its dominant position and whether the act has had the effect of restricting competition, which is a progressive step. In judicial practice, it is

difficult to accurately analyze whether the patentee possesses a dominant market position without considering whether the patentee is a member of standard organization and whether there is a FRAND commitment. Furthermore, this approach effectively nullifies the significance of a FRAND license statement. If the FRAND license statement made by the patentee is not actually bound by any law, then the FRAND license statement required by standard organization seems to be of little significance.

In this way, it is clear that this decision is slightly less binding on the patentee than the strict requirements for the licensee. It does not seem to be in line with the principle of fairness, and the balance of interests seems to be tilted in favor of the patentee. Although the case introduced an antitrust defense system, the two conditions proposed by the German court were too harsh for the implementer, and the German Supreme Court in the Orange Book Standard case did not succeed in constructing a balanced system of competition law regulation.

4.2 The Motorola case establishes the security threshold for licensees

4.2.1 Determination of market dominance

Motorola is the essential patent owner of the GPRS standard and has signed a FRAND commitment to the ETSI. Motorola filed a lawsuit in the German courts to exclude Apple from continuing to infringe its patent rights. Apple reported Motorola to the European Commission for violating Article 102 of the TFEU, and the European

Commission investigated and made a decision that Motorola's act of issuing an injunction to Apple was contrary to the FRAND commitment and constituted an abuse of a dominant market position¹⁸.

To determine whether an operator has abused its dominant market position in a specific case, it is necessary to first clarify that the operator has a dominant market position. In the relevant market, when a standard essential patent is indispensable to a potential licensee for the production of the relevant product, it cannot be avoided and no substitute can be found for it. For the potential licensee, it is obviously impractical and unworkable to develop a new patented technology at a greater cost. Then the standard essential patent is irreplaceable. This is coupled with the fact that the relevant industry sector has locked into the standard due to the long term habits and reliance of consumers and standardization organizations.

In the EU review of Motorola's standard essential patent anti-competition case, the European Commission analyzed the irreplaceability of Motorola's standard essential patent from two aspects: demand substitution and supply substitution, and compared the relevant patent technology from the number of audience groups, audience scope and regional coverage to summarize the irreplaceability of the standard essential patent. From this, it can be summarized that the elements to be considered regarding the determination of market dominance include, from the proportion of the patent

¹⁸ Case AT.39985, Motorola - Enforcement of GPRS Standard Essential Patents Commission Decision.

owner's holding of the patent, to the determination of the target market, and then to the assessment that the standard essential patent is unavoidable, essential and irreplaceable in the production of the relevant industry and products. It provides more ideas and directions for the later judicial practice on how to specifically analyze the irreplaceability of a certain patent technology.

4.2.2 Determination of abuse of a dominant position

After determining that the subject has a dominant position in the relevant market, the next step is to analyze whether the subject has abused that dominant position in the context of EU competition law. EU competition law determines whether there has been an abuse of a dominant position by looking at the effects of competition. If operator's conduct has the negative effect of preventing competition, it may have abused its dominant position in violation of EU competition law. This analysis is applied to determine the abuse of standard essential patents, taking into account the characteristics and specific rules of standard essential patents, mainly in terms of FRAND commitments and injunctive relief. In the analysis of the case, whether the owner of the right has, by virtue of its dominant position in the relevant market, offered an unreasonable license price or treated different licensees in a discriminatory manner, or whether the patentee has, by virtue of its dominant position, forced the licensee to accept unreasonable license conditions by means of applying for an injunction, forming an unfair bargaining position between the two parties. Once the means of applying for an injunction becomes a tool for the patentee to prevent

competitors from entering the market, the price of products in the relevant field may rise, which is not conducive to the protection of consumer rights. In the *Motorola v. Apple* case, Apple made several offers of licensing to Motorola, and the content of the offer showed that Apple was willing to accept the rates decided by the court, which, in the view of the European Commission, fully proved that Apple was a willing licensee, while Motorola still filed an application for injunction, and once the injunction was ruled, there was an exclusion of competition effect that prevented the licensee from entering the market, so the European Commission considered that Motorola abused its dominant market position.

The case was decided on the basis, most notably, of a detailed analysis of the conduct of the parties in negotiating the license agreement. The court used the information provided by the parties in the negotiation to determine that the FRAND principle of licensing was actually practiced by specific behaviors. Therefore, as mentioned above, in judicial practice, the determination of whether a legal act of licensing a standard essential patent complies with the FRAND principle requires a case-by-case analysis and a determination through the objective facts of the negotiation process between the parties in a specific case.

4.2.3 The non-challenge clause

In contrast to the *Orange Book* decision, the European Commission¹⁹ considers that

¹⁹ European Commission Press Release, Antitrust: Commission sends Statement of objects to Motorola Mobility on

the standard implementer can challenge the validity and necessity of the patent and the infringement, and that the existence of such a challenge does not mean that he is not a voluntary implementer. Whereas this gives the standard implementer a wider scope, the standard implementer is not prevented from expressing his true will by the challenge to validity, the European Commission's view is that the challenge to validity, necessity and the expression of willingness are two that can co-exist in a relationship, not in opposition to each other. When the owner of a standard-essential patent and the licensee negotiate the licensing conditions, if the owner of the standard essential patent requires that the licensing conditions have a "non-challenge clause", in other words, the owner of the standard essential patent requires that the licensee shall not challenge the validity and necessity of the patent, which is actually a manifestation of the violation of the principle of equity. According to the European Commission, the "non-challenge clause" may lead to abuse of a dominant market position. The attitude of the European Commission towards such clause is negative. In other words, the European Commission believes that as long as the implementer expresses its willingness to enter into a license agreement under the FRAND clause, the patentee cannot apply for an injunction against it, otherwise it will violate the provisions of competition law and abuse its dominant position. In this case, Apple indicated in its offer that it was willing to enter into a contract under FRAND terms and accept a binding third-party decision on FRAND licensing terms. The European Commission considered this sufficient to demonstrate the implementer's willingness to negotiate.

potential misuse of mobile phone standard essential patents,06/05/2013.

The European Commission's statement amounts to a safety threshold for implementers who wish to avoid injunctive measures by the patentee by simply indicating their willingness to negotiate. For the requirement of willingness to negotiate, the European Commission did not give specific criteria. Combined with the issue of the "no challenge clause", it can be seen that the attitude of the European Commission, as long as the implementer indicates its willingness to enter into a license agreement under the FRAND principle or accept the FRAND license terms of a third party, the patentee cannot apply for an injunction against the implementer. Even if the implementer's behavior of objecting to the necessity, validity and infringement of the patent does not preclude the previous implementer's indication of willingness to negotiate.

In comparison, the German Orange Book standard case establishes a harmonized framework with strict requirements for implementers in favor of the patentee, while the European Commission's statement puts the focus of protection on the implementer. The European Commission's decision is more favorable to licensees. As long as the licensee expresses its willingness to negotiate by indicating that it is willing to follow the license rate determined by a binding third party, the standard essential patent owner's application for an injunction constitutes an abuse of market dominance. This actually tends to lead to delayed payment of license fees by the implementer, resulting in losses to the patentee and the phenomenon of reverse patent holdup.

4.3 The Huawei case proposes a mature framework for balancing interests

4.3.1 FRAND commitment

Huawei is the essential patent owner of the LTE technology standard. A FRAND declaration was made to ETSI. In 2011, Huawei filed a lawsuit²⁰ with the court in Düsseldorf, Germany, demanding that ZTE stop infringing, provide sales data and recall the infringing products sold, and compensate Huawei for its lost. The case submitted a request for a preliminary ruling to the CJEU, requesting the CJEU to interpret the conditions for the application of Article 102 of the Treaty on the Functioning of the EU and its specific content. The CJEU took full account of the FRAND license statement when talking about restricting injunctive relief. This is different from the rule in the Orange Book standard case. The FRAND license statement contains cooperative reliance protection as the entry point to analyze the necessity of injunctive restriction. The standard patent owner makes a FRAND license statement, promising to license on the FRAND principle, and it is this statement that gives the implementing subject a certain expectable interests. Therefore, the European Court of Justice constrains the standard essential patent owner to the corresponding obligations.

4.3.2 Conditions for injunction applications

The German court applied to the CJEU for a "Preliminary ruling" on five preliminary

²⁰ CaseC-170/13, Huawei Technologies Co. Ltd v ZTE Corp. and ZTE Deutschland GmbH.,

questions to determine the circumstances under which a standard essential patent owner with a FRAND commitment and a dominant market position may bring an action against an infringer to exclude infringement or recall a product based on that patent right, which constitutes an abuse of Article 102 of TFEU. The CJEU's prior decision refers to the obligations and requirements that both the patentee and the implementer need to meet.

With respect to the patentee, after discovering the infringement, the patentee has to give a written warning and specify the infringed patent and the type of infringement. And then make a written offer to the other party in compliance with the FRAND principle, and the license fee and the relevant rate calculation should be specified in the offer. While for the implementer, it has to show its willingness to conclude the agreement in accordance with FRAND, and to do so in accordance with business customs, in good faith and to respond seriously and promptly. If the implementer does not accept the offer, he must immediately submit a counter-offer in writing that meets the objective interests of both parties and is in accordance with FRAND principles, and provide a guarantee in accordance with commercial practice. If the parties are still unable to reach agreement on a new offer, both parties must comply with the agreement that an independent third party will decide on the issue of the license fee. For the patentee, applying for injunctive relief must be a last resort, and if the above requirements are not fulfilled, the patentee files an injunction action, which may be considered as an abuse of dominant position. On the other hand, when

the patentee fulfills the above obligations and the implementer does not, i.e., the implementer does not sufficiently demonstrate its effective willingness to prove that it is a willing licensee and may be viewed as a delaying tactic, then the right owner has the opportunity to request an injunction without violating Article 102 of TFEU.

When a right is infringed, the patentee has the right to apply for injunctive relief to preclude the infringement. It is only in this area of standard essential patents that the exercise of this right is restricted. The CJEU emphasized that a patentee seeking injunctive relief would only constitute an abuse in "exceptional circumstances" and made it clear that even if the patentee's application for injunctive relief was barred, he could still seek other legitimate remedies such as damages.

The preliminary ruling took into account the rights and obligations of both parties, taking into account both the legitimate interests of the right holder and the expectation of the implementer that the right holder would be authorized in accordance with the FRAND principle after making a FRAND license statement, trying to keep the balance of the scales. With the case *Huawei v. ZTE*, the CJEU established a new set of rules for the reasonable regulation of injunctions by essential patent owners through a combination of EU competition law and the FRAND principle, which has been applied in practice in various countries. The case *Huawei v. ZTE* provides a framework for assessing whether to grant an injunction in the future.

Chapter 5 Application and development

5.1 Application of the EU competition law regulatory path

5.1.1 Identification of implementers' willingness

The issue of standard essential patents is complex and, many rules and systems have to be evaluated specifically in each different case. The case *Huawei v. ZTE* code of conduct alone can hardly cope with the complex and changing reality of the case. Among them, the determination of willingness is an issue worth discussing in the context of actual cases.

In *Sisvel v. Haier*²¹, for example, the plaintiff, as the owner of the standard essential patent in question, sued the defendant for infringement of its standard essential patent rights and applied to the court for an injunction. In response to the question of whether the plaintiff had abused its dominant market position, the district court's decision emphasized the protection of the patentee's legal rights and rejected the defendant's defense. The court found that the implementer had not acted in good faith to show its willingness to enter into the licensing agreement, for example without providing a secured account to ensure that the patentee received a reasonable return on its patent, and without reporting its specific implementation of the SEP to the owner. Providing accounts, reporting on SEP performance, and submitting financial statements to demonstrate their ability to pay licensing fees are exactly the behaviors that are guided by the EU approach - are conditions that implementers need to meet -

²¹ Federal Supreme Court, judgment of 5 May 2020, KZR 36/17, FRAND-Einwand.

are key to demonstrating their sufficient willingness to conclude agreement. On the other hand, the federal court also referred to the need for implementers to respond to offers made by the patentee in a timely manner, as well as to give the patentee a valid counter-offer in a timely manner in case of disagreement to further facilitate negotiations. These practices are the efforts required by the implementer to prove its willingness. These efforts are necessary.

In fact, willingness can be said to be abstract, and how to prove this willingness is a question worth exploring. The Huawei case does not reflect the resolution of this issue. The decision only mentions the need to "in accordance with recognized commercial practices in the field and in a good faith and without delaying tactics."²²

This also leads to some thoughts on determining willingness. To determine whether the patentee and the implementer are willing to make a license agreement, it is necessary to evaluate their behavior and whether they have made efforts to facilitate the negotiation. And how does the implementer express his initial willingness to acquire license? In other words, how can determine whether the implementer's willingness is sincere or just a delaying tactic? The judgment on the willingness of the implementer can affect the determination of the patent owner's abuse of the injunction in the decision. In fact, this willingness needs to be demonstrated by specific actions before the license is granted and throughout the negotiation process. As for the patent

²² *Huawei v. ZTE* (supra note 2), para. 65.

holder, he needs to show his willingness to license under FRAND, so his offer needs to be in compliance with FRAND principles. Likewise, the implementer needs to give a prompt and timely response to the patent holder's offer. Such a response is sufficiently timely, and the "timely" here needs to be "timely" in accordance with the expectations of the parties.

5.1.2 The legal nature of the FRAND statement

Competition law requires operators who stand in a dominant market position to fulfill specific obligations - they cannot act in a way that harms competition and disrupts the market order by virtue of their dominant market position. An operator who fails to fulfill specific obligations under the competition law violates the competition law. The purpose of the specific obligation is to protect competition and prevent conduct that hinders competition, and is derived from the restrictions imposed by competition law on operators who occupy a dominant position. What is the logical relationship between whether a standard essential patent owner's refusal to license or seeking an injunction constitutes an abuse of a dominant position in violation of competition law and a violation of a FRAND undertaking? Before answering this question, it is crucial to determine the nature of FRAND statement.

In this report, it is considered that FRAND statement is a promise made by the patentee to the standard organization, and the promise will be licensed under the FRAND principle.

First of all, a FRAND statement is not the same as an offer by the patentee. The content of the offer must be specific, because once the implementer accepts the offer, the parties reach an agreement. Therefore, the content of the offer must contain the terms and conditions that should be included in the general agreement, while the FRAND statement only requires the declarant to grant the license according to fair, reasonable and non-discriminatory, so it is not reasonable to treat the FRAND statement as an offer.

Secondly, if the FRAND statement is regarded as an invitation to offer, after the other party accepts the invitation, it is necessary to make an offer, and if the offer does not meet the interests of the patentee, the patentee can reject the offer, withdraw the invitation to offer, and then prohibit the implementer from using the standard, which is in conflict with the irrevocable FRAND statement.

Therefore, it is most appropriate to regard the FRAND statement as a license commitment made by the patentee to the organization. When the patentee makes a FRAND license statement to the standard organization, it represents that the patentee will issue an offer containing FRAND terms to the implementer on behalf of the FRAND principle and obtain the adoption and inclusion of its patent in the standard by virtue of this FRAND commitment to the standard organization. In this way, standardized patents gain a more advantageous market position and bargaining

position due to the natural monopoly nature of technical standards. After the nature of the FRAND statement is clarified, the logic of the answer to the opening question should be as follows: the patentee, in order to obtain the standards organization to include its patent in the standard, needs to sign a FRAND commitment to the standards organization to undertake to FRAND principles for the licensing of the relevant standard essential patents. When the patentee's patent is included in the standard, the patentee refuses to license and files an injunction against the implementer, or the patentee does not reach an agreement with the implementer by virtue of its advantageous position in negotiations, the EU tends to use competition law to regulate the abusive behavior of the patentee.

It further leads to the relationship between FRAND commitments and injunctive relief, which does not necessarily exclude injunctive relief, but only restricts it. As mentioned earlier, the purpose of standards development is to promote the application of standards, in order to improve efficiency and compatibility between products. Unrestricted application for injunctive relief may easily result in monopoly due to the standard essential patents, therefore, when coordinating the conflicting interests, it is necessary to make reasonable restrictions on injunctive relief. The FRAND commitment is used as a tool to set a threshold of restriction for injunctive applications so as to avoid abuse of injunctive relief.

5.2 New path in the 5G field - building an ex ante competition model

From the perspective of judicial practice, the presence or absence of licensing in accordance with the FRAND principle affects the determination of whether there is an obstruction of market competition, and also affects the request for injunctive relief. To a certain extent, the FRAND principle is a vague and abstract concept, which needs to be concretized by some specific conditions and circumstances in individual cases. Whether a standard essential patent license rate is in compliance with the FRAND principle is the key to determine whether the party is abusing its dominant position in the market. When a patent is included in a standard, its irreplaceability often makes the value of the patent incremental. Inclusion in the standard gives the patent owner an advantage in negotiations. In this case, a reasonable royalty rate for a necessary patent should be the equilibrium price of the patent under open competition before the standard is set, rather than the price the patent user has to pay after the standard is set.

Unlike 3G and 4G, which are already mature and in use, many of the 5G standards are still under development, so there may be a new option and path for the upcoming conflicting interests issues in the 5G field to supplement the limitations and shortcomings of competition law regulation. The ex ante competition model²³ may provide a new avenue for coordination in the 5G space. When the standard development is not yet completed, some patent holders conduct ex ante licensing negotiations with implementers for the licensing of the patented technology portfolio

²³ In order to confirm reasonable patent value and calculate balanced FRAND royalty rate, Ex Ante Auction Model proposed by Swanson and Baumol can be applied to 5G SEP licensing to achieve the equilibrium between the royalty rate and the value of the patent before the formulation of the standard.

in order to obtain votes. At this stage, the holder is willing to offer a lower license rate in exchange for more votes and support to get adopted by the standard, which is the result of free negotiation between the two parties and there is no anti-competitive situation. In this way, the FRAND principle can be better reflected.

In other words, the patent holder sacrifices part of the licensing benefits to gain future voice in the standard, and makes compromises for competitive advantage. Take the initiative to make coordination and concessions on the issue of interests disputes before the completion of the standard, so as to better adjust the conflicting interests with the implementer. And ex ante negotiation can follow the principle of ex ante value balance²⁴, thus meeting the needs of both parties' interests-rights holders want to get more voting rights, while implementers want to get lower-priced licenses. After the standard is formed, the ex ante value balance principle can again be a strong basis for the holder to argue and conflict about the license rate issue under the FRAND principle, because as long as the license rate given by the holder after the standard is established is similar to the one before the standard is established, the holder can get more basis to respond to the lawsuit by saying that the license rate is in line with the FRAND principle. It can also avoid the risk of litigation similar to the *Unwired planet v. Huawei* case²⁵.

²⁴ The principle of equilibrium of value.

²⁵ *Unwired Planet v. Huawei*, High Court of Justice, 5 April 2017 HP-2014-000005, [2017] EWHC.

Chapter 6 Conclusions

6.1 Conclusions

In fact, the implementation of patent standardization has brought convenience and efficiency, however, along with it, there are concerns about patent holdup caused by patent standardization. A patentee commits to the standardization organization to license its patented technology under the FRAND principle for inclusion in the standard. When the patentee owns the standard essential patent rights, the patentee refuses to license and files an injunction lawsuit against the implementer, or the patentee does not reach a license agreement with the implementer on the FRAND principle by virtue of its dominant position in the negotiation, resulting in patent holdup. The consequence of patent holdup is that it hinders market competition and is detrimental to the development of the market, while effective competition is weakened, which ultimately affects the interests of consumers and the development of innovation. The restrictions on injunctive relief and the requirements on whether the offer is in compliance with the FRAND principle are all aimed at avoiding the phenomenon of patent holdup and thus maintaining effective competition in the market. However, while regulating patent holders, some norms are also set to prevent the other extreme phenomenon - reverse holdup. If the restriction on injunctive relief is to maintain market competition, then the requirements and restrictions on implementers are to protect the legitimate rights and interests of patent owners from stimulating the vitality of innovation. Both from the exploration history of legislation and the choice of judicial path, it can be seen that the EU is trying and looking for a

fairer and more balanced way to deal with and coordinate the problem of conflict of interests between patent and competition law. Therefore, it is crucial to coordinate the conflicting interests of both parties and construct a framework for balancing interests. As the development process of communication technology continues to accelerate, disputes arising from standard essential patents gradually increase, and it is necessary to improve the regulation of EU competition law. Meanwhile, with the exploration of judicial practice in the EU, there are new developments in the court's decision for the construction of a framework of balance of interests, which promotes the proper handling and resolution of standard essential patent infringement dispute cases handled by EU competition law.

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