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COMPETITION COMMITTEE**

INTELLECTUAL PROPERTY AND STANDARD SETTING

-- Note by Nuno Pires de Carvalho (World Intellectual Property Organization) --

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STANDARDS, PATENT RIGHTS AND COMPETITION

*Note by Nuno Pires de Carvalho**

1. Introduction. The uneasy relationship between intellectual property and technical standards

1. The relationship between technical standards and intellectual property (IP) is not always easy. Once an intangible differentiating asset is included in or covers a standard, restrictions as to its acquisition and use as IP subject matter may arise. In general, the problem is one of irreconcilable objectives. Whereas the main purpose of IP is to differentiate products and services, as well as the businesses that produce and sell them, the objective of standards is to harmonize products, services and processes. In order to accomplish its primary objective, IP ensures exclusivity (expressed in the right to say ‘no’ to those who wish to use the protected intangible assets) and alternativeness (i.e. the possibility of rivals, when confronted by IP rights (IPRs) owned by competitors, to create their own non-infringing intangible assets)—so that each rival may introduce his/her own differentiating features in products and services. By contrast, standards imply generalized and uniform obedience. It follows that standardization may inhibit the free operation of IPRs, namely by impacting on its acquisition and use.¹

2. Actually, the problems of the relationship between IP and technical standards are explained by a more general and basic notion that stems from the economic organization of society. Standards are the result of regulation, be it government regulation or industry self-regulation. Standards impinge on the operation of the free market, because they reduce the various possible ways of manufacturing and/or producing services, and therefore they reduce consumer choices. Standards may be justified by numerous and relevant reasons of economic efficiency, cost reduction, quality improvement, and even innovation—when they facilitate the interoperability of new products and services—but they nevertheless impose constraints on the ability of businesses and consumers to choose. IP operates in an opposite direction. It also results from regulation, in the sense that exclusive rights are granted or acknowledged by the intervention of parliaments and/or courts.² But it is a fundamental foundation of free markets, in which rivals struggle to lure clients and the latter have consequently a right of choice. It can be said that, paradoxically, IP is the product of market regulation—in the sense that the acquisition, use and loss of IPRs are established by law—for the sake of market freedom, whereas, by a vivid contrast, standardization is the product of market regulation (and, more frequently, of self-regulation) that to a large extent curtails rivalry in invention and in offering competing products and services to consumers.

* The author serves the Secretariat of the World Intellectual Property Organization (WIPO), Geneva, Switzerland, as Director of the Intellectual Property and Competition Policy Division. All views and opinions are the author’s exclusively and do not necessarily coincide with the views of the Secretariat or of WIPO Member States.

¹ “Use” of IPRs means their enforcement against third parties. It means also, as a corollary of the right to say ‘no’, the right to say ‘yes’, by means of their licensing and assigning. See art. 28 of the TRIPS Agreement.

² However, some differentiating intangible assets emerge spontaneously and precede – and may even prescind from – normal IP protection, such as trade secrets and business reputation.

3. At the outset, it is important to clarify that the mandatory or voluntary nature of technical standards impacts IPRs differently. For the purposes of this note, mandatory standards are those that are established by a statute, a regulation, a directive, or any other written norm emanated from a law making public body, such as a parliament, a government, or a governmental agency vested with the authority to impose a certain behavior. In other words, mandatory standards are those with which citizens and firms must comply, under penalties for non-compliance. Voluntary standards (sometimes designated as “voluntary consensus standards”) are those that are established by the industry, directly (through arrangements between businesses), or indirectly (when elaborated by standard setting organizations (SSOs), also known as standard developing organization (SDOs)). Many voluntary standards are elaborated per the initiative of SSOs, which subsequently persuade businesses to adopt them. But there are also voluntary standards that are elaborated by companies that decide to collaborate in order to harmonize patterns of production so as to reduce costs and facilitate the creation of interoperable products and services.

2. Patents and standards³

2.1 *Mandatory standards*

4. The mandatory nature of technical standards has no special impact on the acquisition of patent rights. There is no single statute in the world that excludes standard essential inventions from patentability, even if they are mandatory. The reason is obvious: it is not the fact that an invention becomes part of a mandatory standard that makes it inconvenient to society. On the contrary, inventions that are part of mandatory standards have perhaps more social utility than those that are not. So it would be irresponsible to deny patentability to those inventions.

5. However, in the face of patented inventions that are essential to the operation of mandatory standards, competitors of the patent holder have no manner to find non-infringing technical solutions around the claimed matter. The exercise of the exclusive rights by the holder, albeit in perfect conformity with the letter and the spirit of patent laws, would run against—and actually contradict—the public policy that is behind the setting of mandatory standards because it would make it exclusive to the patent holder. According to that public policy, it is in the public interest that all manufacturers of the products that are covered by the standard obey precisely to its instructions. To this extent, the invention as claimed and protected by the patent becomes an *essential facility* for patent holder’s competitors.

6. The inclusion of one or more of the patents of a certain manufacturer in a mandatory standard gives that manufacturer a competitive advantage, which does not arise from superior technical efficiency or other business merit, but rather from governmental intervention. Therefore, in the case the patent holder refuses to license the standard essential patent(s) on reasonable commercial terms to any competitor who must apply the standard and solicits authorization to use the claimed invention(s), a compulsory license ensues. This is the solution provided by section 308 of the Clean Air Act (42 U.S.C. 7608).

³ Reference is made here to patents, but the discussion that follows also applies to other areas of intellectual property that may generate exclusive rights in ideas that are part of a standard. In general, those ideas are of a technical nature, so reference is also made to utility models, layout-designs of integrated circuits and plant varieties. Where the standards incorporate esthetical elements, industrial designs may be also relevant. However, industrial property rights do not generate identical prerogatives and burdens. Therefore, even if the interaction of standards with patents may have an impact very similar to the one it has on other titles in technical ideas, there may also be significant disparities. These, however, are beyond this note.

7. Even though it seems that Section 308 has no parallel in the statutes of other WTO or WIPO Members, in other countries the same solution—a mandatory or compulsory license—would apply, in the same circumstances, on grounds of public interest.

8. This means that, when it comes to the elaboration of mandatory standards, it does not matter whether the patent holder was in good faith or not. His/her duty to inform the SSO about the existence of a patent (or of a patent application) on some essential part of the standard in the course of its elaboration phase has no impact on the future use of the standard by the industry. Any attempt by the patent holder to hold-up SSO participants with excessive royalty demands or to sue potential users will be sanctioned by a compulsory license, whose terms are primarily defined by a governmental authority and, eventually, by a court. Because of the mandatory nature of the standard in question, and in view of the absence of alternativeness, standard essential patents owned by companies that do not participate in the SSO are subject to the same treatment.

2.2 *Voluntary standards*

9. Like mandatory standards, voluntary standards do not impose particular constraints on the acquisition of patent rights. But, as far as enforceability is concerned, the situation of patent rights in the face of voluntary standards is different. Because of their voluntary nature, any company or group of companies not interested in using the standards in question may resort to competing techniques to make substitute products. They may also create other standards. It is not uncommon that several standards compete in the same field of industry and in regard of the same product. This means that in the case of voluntary standards the essential facility doctrine does not necessarily apply to justify compulsory licenses.

10. In regard of voluntary standards, a distinction must be made between situations in which the voluntary standard essential patent (VSEP) holder participates in the SSO and situations in which he/she does not.

11. There is a presiding principle that rules over the conduct of SSO participants: good faith. Here good faith means: not holding information on the actual or potential existence of conflicting patent rights; not acquiring (artificially and unduly) rights in VSEPs; and full and unreserved compliance with the FRAND terms established by the SSO and to which the patent holder has adhered. The first element of good faith translates into a duty of transparency. Failure to inform the SSO gives rise to a potential problem of ambushing, to the extent that the existence of VSEPs to which the holder denies access makes the standard impossible to be put to practice unless users accept to submit to any demands imposed by the patentee, no matter how unreasonable they may be. The second element is a variation of the first. It may happen that a member of an SSO amends patent claims or files new patent applications after the standard setting has started, with the purpose of expanding the scope of enforceable rights and thus cover certain parts of the standard that would be otherwise non-proprietary.⁴ The third element manifests when SSO participants take advantage of VSEP rights to impose unreasonably high royalty and other licensing terms upon users (hold-ups). Moreover, dishonest participants, who have concealed their patent claims/rights upon inventions that are essential to the implementation of standards, may take other SSO participants by

⁴ This particular issue was the subject of analysis by the Court of Appeals for the District of Columbia in *Rambus v. FTC*. The court dismissed an FTC order against Rambus on two grounds: the FTC failed to give evidence that Rambus' concealment of its intent to file for patent applications was an act of monopolization for the purposes of the Sherman Act; and that Rambus had committed itself to disclose patent rights already obtained and applications already filed, but not future patent applications for subject matter that, before the applications were filed, constituted trade secrets. See *Rambus v. FTC*, 522 F.3d 456, at 466-467 and 468-469 (CADC, 2008).

surprise and sue or threat to sue them on grounds of infringement. This is a practice generally known as *patent ambush*.⁵

12. Of course, the observations above concern patent holders (or applicants) that participate in the elaboration of a standard. However, it is not uncommon that the elaboration of a standard requires a choice among several equivalent technologies.⁶ Sometimes it is the very existence of several competing technologies that recommends the elaboration of the standard, so as to facilitate the invention of new interoperable products. Standardization keeps the manufacturers of interoperable products focused on a limited scope of technology. This increases the chances of success in inventing interoperable products and ensures a larger market. When the VSEP holder is not a member of the SSO team that elaborates the standard, he/she has no duty whatsoever of informing about the existence of patents. It may also happen that the VSEP holder does not even know about the elaboration of a voluntary standard by part of the industry or by a private SSO.

13. When a VSEP holder breaches the duty of good faith, in general the solution is the denial of injunctions against patent infringement and the compulsory application of FRAND terms. In this regard, U.S. and EU laws diverge in their approach, but the solution ends up being the same.⁷ However, the solution depends on a finding of breach of the duty to inform as well on the anticompetitive consequences of that breach. In general, it is understood that an SSO participant must disclose eventual patent interests in technologies that are essential to the standard so that the SSO may make an informed decision about the use of the claimed inventions. In view of such information, the SSO may decide to use a different, unclaimed technology. But it may also require the patent holder (or applicant) to commit to FRAND licensing terms once the standard setting work is done. With this the SSO would avoid overcharging of royalties on other users locked-in to the standard, i.e., whose costs of exiting the standard would be higher than those of remaining in it. Another aspect that was discussed in *Rambus v. FTC* (CADDC, 2008) was the eventual impact of new claims added to pending patent applications after the SSO work started. In the absence of a clear commitment by the VSEP holder—or in the face of less than clear SSO regulations—no company should be held liable for failing to disclose trade secrets. After all, patentable subject matter constitutes a trade secret until it is disclosed by the publication of the application. As the CADDC reminded, agreements among competitors to set standards, aside their positive aspects, are nevertheless agreements among competitors, and as such they should be examined with circumspection. Where patent rights are involved, the situation may be less worrying because of the inherent disclosure of the technology involved. But the sharing of trade secrets among competitors may lower the threshold of the unlawfulness and thus provoke the blame of anticompetitive behavior.

⁵ Patent ambush has been explained in the following terms:

“[Patent ambush] deals with a member of an SSO that omits to transfer the information to the SSO of an SEP, and when the standard has been adopted, and the members and other firms have invested in it, the patentee emerges and, knowing the exit cost will be large, charges a royalty rate that reflects both the exit costs and the value of the standard as such, while the patent may only cover a small part of the standardized technology.”

Björn Lundqvist, *Standardization under EU Competition Rules and US Antitrust Laws—The Rise and the Limits of Self-Regulation*, at 300-301 (Edward Elgar, Cheltenham, 2014).

⁶ In fact, as the Court of Appeals for the District of Columbia acknowledged in *Rambus v. FTC*, “Before an SSO adopts a standard, there is often vigorous competition among different technologies for incorporation into that standard.” *Rambus v. FTC*, 522 F.3d 456, 459 (CADDC, 2008).

⁷ For an overview of the availability of injunctions under FRAND terms in various jurisdictions, see AIPPI, *Availability of injunctive relief for FRAND-committed standard essential patents, incl. FRAND-defence in patent infringement proceedings*, March 2014, available at <www.aippi.org/download/committees/222/Report222AIPPI+report+on+the+availability+of+injunctive+relief+for+FRAND-committed+standard+essential+patentsEnglish.pdf> (accessed on August 7, 2014).

14. In the EU, the European Commission treats breaches of the duty of good faith as antitrust violations under article 102 of the Treaty on the Functioning of the European Union (TFEU).⁸ As Article 102 requires a finding of a dominant position, the European Commission understands that “an essential patent under a standard is a market in itself and the proprietor is that market’s sole supplier, thus a monopolist.”⁹ In the antitrust investigations against Motorola and Samsung, the Commission concluded that the refusal by an SEP holder to abide by previous FRAND commitments, and his/her attempt to enforce an injunction against a standard user willing to enter a voluntary license under FRAND terms, constituted an abuse of a dominant position.¹⁰

15. In the U.S., the Federal Trade Commission understands that patent hold-ups or ambushes do not need to constitute an antitrust violation in order to be deemed (and sanctioned as) unlawful. In other words, there is no need to find a dominant position in the relevant market in order to determine the unlawfulness of the enforcement of a VSEP. This understanding results from the particular language of section 5(a)(1) of the FTC Act (15 USC § 45), which provides that “Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful.” This text has two prongs. The second prong speaks to the traditional concept of unfair competition, as set in Article 10*bis* of the Paris Convention and footnote 10 of the TRIPS Agreement, which corresponds to the notion that the unlawfulness of the act results from its dishonest nature. The first prong goes beyond trade moralist considerations and extends the prohibition to any acts that are unlawful and that generate an anticompetitive advantage—of any size. The difference between the two prongs lies, therefore, in the presence or absence of deception. The first prong does not require courts to find morally blame conduct. The second does. The first prong demands that enforcement authorities find an effective competitive advantage—which, naturally, should have some significance (after all, courts are not supposed to bother with *de minimis* consequences),¹¹ but without necessarily reaching the level of a position of dominance. The second prong may be concerned with competitive advantages, as a matter of course, because it concerns practices in commerce, which naturally have an impact on rivals. But the second prong is not about *competition*, but rather about *competitors*—any advantage that one merchant gains vis-à-vis another that may have an adverse impact on consumers, and which does not result from superior efficiency, is unfair when practiced with dishonesty. Eventually, this dichotomist approach facilitates the task of competition authorities and puts pressure on SSO participants, because of the waiver of complex findings on market power. However, it is still necessary to find the anticompetitive effects of the unfair practice, and in this regard courts may be strict, as the CADC was in *Rambus v. FTC* (CADE 2008), when it held that royalty overcharging is, in principle, pro-competitive.

16. However, this discussion applies to FRAND commitments and their breach by SSO participants. The solutions of imposing FRAND licensing terms and withholding injunctions against third parties

⁸ Article 102 of the TFEU provides:

“Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.”

The TFEU is a consolidated and amended version of the Treaty of Rome, of 1958, that originated the European Community. The last amendment was introduced by the Treaty of Lisbon, of 2007.

⁹ Lundqvist, *supra* note 3, at 320.

¹⁰ See Janeth Strath, *Smartphone patent wars: European Commission adopts anti-trust decisions on enforcement by Motorola and Samsung of standard essential patents*, 20 Computer and Telecommunications L. Rev. 127 (2014). In a press conference, the competition commissioner said that under FRAND no licensee should be constrained to avoid challenging “the validity and infringement of the SEP.” *Id.* at 128.

¹¹ Unfair methods of competition are unlawful under Section 5 of the FTC Act when they produce substantial injury. See *FTC v. Raladam Co.*, 283 U.S. 643 (1931).

willing to take a license under those terms does not apply, in principle, to VSEP owners that did not participate in the standard setting and thus have no obligation of good faith.

17. It is undeniable that an issue of lock-in may also appear in these circumstances, this meaning that SSO participants may find more costly to exit the standard and adopt a different technology to avoid infringement than to submit to the conditions imposed by the non-SSO participant VSEP holder. It may also happen that, after being implemented, the standard in question becomes dominant in the market. So, the enforcement of the VSEP by a third party might disrupt the entire market or a large part of it.

18. These considerations may give food for thought to SSOs, and make them act with great care in searching for possible third parties' patent rights that might be infringed by the standard, but could not impair the validity and the enforceability of those rights. The reason is that, the standard being voluntary, and the patent owner not having concealed patent claims or rights, standard users may at any time switch to another technology as much costly as that can be. Denying the VSEP holder the right to enforce his/her exclusivity would be the same as denying the very nature and purpose of patent law. In other words, when it comes to voluntary standards, third parties' patent rights, as essential as they may be to the operation of a standard, are not essential facilities.

19. Moreover, it is the law in several jurisdictions that a monopolist is not obliged to share his/her dominance with competitors, provided the dominance has not been acquired in an illegal manner. To oblige holders of lawfully acquired dominant positions to assist competitors would actually be a disservice to free competition, because there would be no incentive for potential entrants to create their own competitive advantages.

20. However, it is worth emphasizing that this discussion concerns only those uses of standards that must replicate the patent claimed matter. This, of course, does not concern the making of some interoperable products. Not all manufacturers of interoperable products need to use the standard—they only need to know it, so that they can adapt interoperable products to the instructions provided by the standard. When interoperable products do need to use patented instructions, the solution is two-fold: if manufacturers of interoperable products have also applied for patents, they may be entitled to a compulsory license (as well as obliged to grant a cross-license to the patent holder), if the second invention is technically and economically significant;¹² if they have not, the fact that the manufacturers of interoperable products wish to make new products available to consumers, and that those products are not substitutes of the patented products, courts may deem that the patent holder has no business justification to refuse to license. This line of reasoning has been followed by the European Court of Justice.¹³

21. On the other hand, an SSO participant who owns a VSEP may, for the same reason of alternativeness, enforce his patent against non-SSO participants. But two reasons may justify that the VSEP holder be compelled to license the patent (or that a compulsory license be granted): one, as explained, may be invoked when the non-SSO participants wish to make products that do not compete with the patented products, for which there is consumer's demand and which would not be available to consumers otherwise;¹⁴ the other is that in some jurisdictions, in the absence of reasonable commercial motives, such a refusal would be deemed discriminatory against non-SSO participants vis-à-vis SSO participants.

¹² See Article 31(l) of the TRIPS Agreement.

¹³ The European Court of Justice (ECJ) stated this understanding in *Radio Telefis Eireann (RTE) and Independent Television Publications Ltd (ITP) v Commission*, Joined cases C-241/91 P and C-242/91 P, Judgment of the Court of 6 April 1995, and confirmed it in *IMS Health GmbH & Co.*, Case C-418/01, judgment of the Fifth Chamber of the European Court of Justice on April 29, 2004.

¹⁴ *Id.*

22. As said, absent mandatory standardization, the essential facility doctrine does not apply to patents because of the alternativeness condition. This was the reasoning of the District Court in *Data General Corp. v. Grumman Systems Support Corp.*¹⁵ In this relevant opinion, the District Court assumed that one of the patent system's goals is to lead business rivals to produce competing technical solutions. That assumption, however, is only possible when one understands that competing solutions are always obtainable. A better mousetrap is not an essential facility because there is always a worse mousetrap to compete with it. Consumers may prefer to acquire the latter if the price or other commercial conditions are more appealing than the technical advance of the former. Therefore, mandatory standards aside, it is impossible, as a matter of law, to apply the essential facilities doctrine to patents, because a certain technical solution may never be deemed incapable of being duplicated by being invented around or re-invented.

23. However, it should be noted that under some national statutes the solution would be different in the event a certain standard, albeit voluntary, has been adopted by a large part of the industry and a non-SSO participant who holds a VSEP refuses to license it to the SSO participants. In that case, provisions of national statutes that order a compulsory license of patents where the refusal to license is seen as an embarrassment to the whole industry could apply.¹⁶ This means that the solution may depend on the stage of maturity of the industry that uses the standard. At its incipiency, it is possible that courts might not see the exercise of exclusive rights in the patent as an embarrassment. But once the industry is set and thriving, and the products disseminated, the patent could be seen as an inconvenient obstacle. Compulsory licenses would then ensue. However, in other countries, where the enforcement of rights in VSEPs may be deemed a hindrance to the establishment of a new industry, compulsory licenses may be granted even at a stage of incipiency of that industry.

3. Technical Standards and other IPRs

24. Discussions on the impact of technical standards on intellectual property rights tend generally to focus on patents. However, that impact is also felt in other areas of intellectual property, including copyrights and trademarks. Because this note is about patents and standards, I will not visit those other areas of intellectual property. Nevertheless, it is important not to forget that

- - As far as copyrights are concerned, their interface with technical standards has been discussed in two different scenarios. One scenario is the impossibility (or possibility) of recognizing copyrights in technical standards given the inexistence (or existence) of originality and creativity. The second scenario is related to both the acquisition and the enforcement of copyrights. It has been argued that copyright exclusivity creates a problem of dissemination of the texts containing standards, and therefore it is in direct conflict with public policies that favor

¹⁵ *Data Gen. Corp. v. Grumman Sys. Support Corp.*, 761 F. Supp. 185 (D. Mass. 1991), *aff'd*, 36 F.3d 1147 (1st Cir. 1994). See Gregory V.S. McCurdy, *Intellectual Property and Competition: Does the Essential Facilities Doctrine Shed Any New Light*, 25 Eur. Intell. Prop. Rev. 472, 475–76 (2003).

¹⁶ For example, the patent statute of Australia (Patents Act 1990, consolidated as of January 1, 2011) provides that compulsory licenses may be granted when “the reasonable requirements of the public with respect to the patented invention have not been satisfied” (Section 133(2)(ii)). Section 135 provides that “(1) For the purposes of sections 133 and 134, the reasonable requirements of the public with respect to a patented invention are to be taken not to have been satisfied if: (a) an existing trade or industry in Australia, or the establishment of a new trade or industry in Australia, is unfairly prejudiced, or the demand in Australia for the patented product, or for a product resulting from the patented process, is not reasonably met, because of the patentee's failure: ... (iv) to grant licences on reasonable terms ...”. The United Kingdom Patents Act 1977, as revised in 1999, has a very similar provision (see Section 48A.1(a)(ii)). Article 42 of the industrial property statute of the Dominican Republic (Law 20-00, of 2000) provides for compulsory licenses as remedies for anti-competitive uses of patent rights. Specifically, it provides: “For the purposes of this law, the following practices, among others, are considered to be anti-competitive: ... (c) Hindrance of commercial or productive activities.”

the unencumbered access to standards. It goes without saying that the solution given to these apparent conflicts may significantly affect the revenue of SSOs. Moreover, the outright denial of copyright enforceability in the field of standards may be a powerful disincentive for the elaboration and dissemination of technically sophisticated and clearly expressed standards. There are powerful reasons to accept the exclusion of mandatory standards from copyright protection—after all, copyright does not cover statutory language—but voluntary standards are different. Besides, the conversion of voluntary standards into mandatory ones may raise a takings problem, if the SSO is not duly compensated.

- - As far as the interface between trademarks and standards is concerned, it emerges in no less than five different contexts: (a) names given to technical standards; (b) third parties' trademarks mentioned in technical standards; (c) designation of SSOs' standardization services; (d) designation of services of certification of compliance with standards; and (e) marking and labelling standardized requirements. Each one of these five contexts raises particular issues and calls for specific legal solutions.

25. The table that follows offers a bird's eye view of the impact of standardization on the acquisition and enforcement of IPRs (namely, patents, copyrights and trademarks), as well as, in the field of trademarks, on the use of the signs themselves. It is a table, and therefore it is afflicted by the shortcomings of all tables that attempt to condense complex information in confined cells. However, it is useful as an illustration of the complexity of the relation between IP and standards, with various solutions being possible in the face of identical or similar circumstances depending on the specific IPRs affected.

Technical Standards and Patents, Copyrights, and Trademarks			
		Restrictions to acquisition	Restrictions to enforcement
Patents and Copyrights in works of a technical nature	Mandatory	No.	Yes. Compulsory licenses.
	Voluntary		
	regarding their elaboration	No.	Yes. FRANDS, hold ups, limitations to injunctions.
	regarding their use	No.	Yes. FRANDS, ambushes, limitations to injunctions.
Copyrights	Mandatory	Yes, but protection against confiscation.	Yes.
	Voluntary	No.	No.
Trademarks	Names of standards	No.	Yes, fair use.
	Third parties' marks	No.	Yes, fair use.
	Service marks	No.	No.
	Certification marks	No, but there may be encumbrances to use by their holders	Yes. Compulsory licenses.
	Marking and labelling requirements	No, but there may be encumbrances to use by their holders	No.

4. Conclusion

26. In general, it can be said that the impact of standardization on intellectual property is dictated by the interference of regulation in free markets. Because intellectual property is about differentiation, and because free markets thrive on differentiation—and succumb to its absence—market regulation, in distorting free markets, naturally distorts intellectual property. It follows that the fact that standardization distorts intellectual property should not come as a surprise. In concrete, standardization affects the manner in which intellectual property rights are acquired (copyright in particular) and used (patents and trademarks in general). In a very narrow sense, standardization may also affect the way the subject matter of intellectual property rights is used (in the field of trademarks).

27. Also in general, the main impact that standards cause on intellectual property takes place when they are mandatory, and thus acquire the nature of legally binding norms of conduct. As far as voluntary standards are concerned, the impact on intellectual property is much less considerable, but it can occur nevertheless in certain special circumstances.

28. Anyway, the tension between intellectual property and standards is one of public policies. However, because the public policies that preside over standards are oriented towards reducing the freedom of markets, it is not a surprise that they are accompanied by an orientation towards reducing product and service differentiation—hence the constraints on the acquisition and use of IPRs. It is, however, a limited reduction, because standards are frequently adopted for the sake of technical and economic efficiency, which has a positive effect, albeit downstream, on competition. That is why intellectual property does not vanish completely even in the presence of mandatory standards and remains (or should remain) almost untouched in the context of voluntary ones.