

Patents in Standards & Interoperability

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Introduction

This paper explores the current debate around perceived shortcomings in the patent regime as it pertains to standardisation, specifically concerning the situation of unwilling (or unreasonable) licensors and licensees from the policy standpoint of ensuring access to standard-related patents for interoperability purposes, so that - in the public interest - standards remain open and commercially viable and are not blocked. It looks at possible approaches from both a legislative and a self-regulatory perspective.

From a legislative viewpoint the paper argues that the conventional approach of a permissive patent regime with checks and balances provided in external legislation may no longer be sufficient, and that – at least in the case of standards and interoperability – there is a case for “internal” checks and balances, i.e. within the patent law domain itself.

From the self-regulatory viewpoint, the paper provides an overview of the current project in ETSI which is reviewing its own internal IPR Policy.

Interoperability

Interoperability is the cornerstone of the information and communications technology (ICT) sector, and has an ever-growing role in the era of digital convergence, where the traditional boundaries between distinct computing and communications products are becoming increasingly blurred. More and more electronic products need to be able to “talk” to each other and interoperate.

Interoperability has been defined by the European Information & Communications Technology Industry Association (EICTA) broadly as “the ability of two or more networks, systems, devices, applications or components to exchange information between them and to use the information so exchanged”¹.

Standards

The purpose of interoperability standards (as opposed to standards for public safety or some other public purpose) is to provide interoperability in areas such as telecommunications, so that products of one manufacturer can interoperate seamlessly with products from a different manufacturer.

In practice a standard may evolve as a formal standard, an ad-hoc standard, or a de facto standard as discussed in more detail below.

¹ EICTA Interoperability White Paper – see www.eicta.org/press.asp?level2=41&level1=6&level0=1&year=2004&docid=132

1. Formal standards

European, U.S. and international standards are commonly set by formal or “official” standardisation bodies that have some governmental or quasi-governmental control.

Patents play a pivotal role in the framework for achieving open standards². This is because patents enable the participants in the standard setting process to openly share their knowledge and make technical contributions to the standard, confident that their technology is protected by a patent application.

The rules of standards bodies generally impose an obligation to license, usually on reasonable and non-discriminatory (RAND) terms or, in some cases, on royalty-free (RF) (and otherwise reasonable and non-discriminatory) terms. Access to the standardised technology is the backbone of open standards.

The companies participating in standardisation activities generally expect to see some return on the investments they make in developing standardised interoperable solutions accessible to all, which is why RAND tends to be a more prevalent model than RF. Put another way, requiring royalty free terms may discourage important technology owners from contributing to and supporting the standard, which may lead to fragmentation of the market and a resulting lack of interoperability. Also, reluctance of important patent holders to contribute may detract from the state of the art reflected in the standard. In other words the specification may turn out to be technically inferior.

If patent rights did not apply to standards contributions at all, innovators would have to rely on trade secrets to protect their inventions resulting in more proprietary – and less open – standards. The framework underpinning open standards would be lost and the number of initiatives to create open standards would decrease.

Interestingly the bigger challenge to interoperability in the standards context is not from patent owners who are contributing to the standard, but from owners of relevant patents who are not a member of the standards body. There is currently no mechanism for ensuring that third parties have a right of access to non-members’ patented technology. Such an outside patent owner could therefore, at least theoretically, use their standard-related (or so-called “essential”) patent to block the standard. This is because third parties are not signatories to the IPR policies of the standard-setting body developing the standard and so are not bound to offer licences on RAND or on any other terms promoted by the standard-setting body.

2. Ad-hoc standards

There is an increasing trend in all areas of digital technology for the establishment of informal, unofficial, or “ad-hoc” standardisation organisations formed by industry groupings, who come together voluntarily to define standards and set their own patent rules. Usually the patent rules of ad-hoc standards groups require licences to standards-related patents to be available either on RAND or RF terms. From the point of view of interoperability and patents, therefore, similar policy considerations apply to ad-hoc standards as to formal standards.

² In this context “open” means that a standard is accessible to others apart from the patent owner to develop interoperating competitive products and services.

3. De facto proprietary standards

Solutions may become the industry norm without any standardisation process at all and, as such, any patents will not be subject to obligatory licensing terms. If relevant patents exist they could prevent access to what has become a *de facto* proprietary standard. The patents may be owned by one or very few proprietors. Different policy considerations may apply, therefore, to *de facto* proprietary standards as to formal and ad hoc standards.

The Tension between Patents and (interoperability) Standards

Although, as said, patents play a pivotal role in standardisation, there is an innate tension between patents and interoperability because patents could be used to hinder interoperability and prevent others from developing new solutions that can talk to existing solutions.

An essential patent confers market power on the patent owner because, by definition, it is not possible to provide a standard-compliant product without using the patented invention, i.e. infringement of the patent is an inevitable consequence.

The challenge from a policy standpoint, in the case of an essential patent, is to strike the proper balance between:

- the rights of the patent owner (licensor) to enjoy the full benefits of the patent,
- the rights of third parties (licensees) to make and sell standard-compliant products, as well as
- the public interest not to lock users into specific technology platforms, while recognizing that in daily life society benefits enormously from the advanced technology that standards can bring.

Standards-setting bodies generally seek to relieve this tension by obliging Members to undertake to license their essential patents on reasonable and non-discriminatory (RAND) terms thus ensuring access to essential patents so that the standard is not blocked, but can be implemented in a commercially viable manner by all interested parties, including new entrants. However, there is growing concern in the market whether the standard-setting bodies' IPR regimes can be potent enough to relieve that tension in the case of an unwilling – or indeed an unreasonable – licensor (or licensee). In any case, they cannot address the situation of patent owners who are not standard body members.

This paper explores ways of avoiding, or at least minimising, the risk of unwilling licensors blocking standards, from the perspective of both (1) legislative measures, and (2) self-regulation, i.e. within the rules of the standard setting body itself.

Interoperability Safeguards – “external” legislation: Competition Law

Competition law provides checks and balances that are “external” to the patent law domain for addressing misuse of patents in the context of standardisation.

The drawback of relying on competition law principles in patent ‘misuse’ cases is that broadly speaking sanctions only apply if the patent owner is (a) a *dominant* supplier, and (b) has *abused* the dominant position, e.g. by refusing a licence. It is established that merely owning a patent does not automatically put the patent owner in a dominant position³, nor is mere refusal to licence automatically an abuse.

³ Most recently: the US Supreme Court in *Illinois Tool Works, Inc. v. Independent Ink, Inc.*, (Mar. 1, 2006)

Absent a dominant position, there is no mechanism in the current legal regime to adequately address the situation where a patent owner may be using a patent to block a technical standard or otherwise hinder interoperability, for example by charging excessive royalties.

The safety net that competition law currently provides therefore has only a limited application for resolving patent misuse cases in practice.

Interoperability Safeguards – possible “internal” legislative measures

There appear to be at least three different approaches by which the legislature could provide enhanced interoperability safeguards that would fall under the patent law domain itself, and as such would constitute “internal” checks and balances. The three approaches are (1) Limited Exception, (2) Compulsory Licensing, (3) Patent Misuse; each of which is discussed in more detail below.

1. Limited Exception

One approach might be to provide a narrow, well-defined and clear exception to the exclusive rights of the patent owner.

Specifically, this could permit the use of patented technology without the need for a licence, but only to the extent that it is indispensable for the development and sale of products that interoperate with other products where there is a patented interface to the outside world.

This would have an advantage for third parties because it will give clarity and certainty that they can legitimately develop and sell new solutions that interoperate with existing proprietary platforms, even if the interfaces to those platforms are protected by patents, and at no cost. There would be no need to negotiate with a patent owner. This would have clear benefits especially for small and medium size enterprises (SMEs) and new entrants needing access to patented interfaces.

The disadvantage is that owners of relevant interface patents would forego the potential for royalty revenue, and indeed the possibility of enforcing their patents as regards the interface solution. Arguably this would act as a disincentive for companies to invest further in developing interface technologies.

One refinement to this approach might be that patents already subject to obligatory license terms under the rules of a standardization body could be exempt from the exception. Such a provision would have the important advantage of encouraging owners of standards-related patents to participate in the standardization process, thus making the technology accessible under the rules of the relevant standardization body. The consequence of not participating in the standard would result in the exception applying.

Note, however, that de facto standards would remain outside this exemption, and hence still subject to the exception provisions. This could lead to what some would regard as unfair access to proprietary standards in some situations.

2. Compulsory Licensing

An alternative approach might be to provide a compulsory licensing framework for interoperability purposes. A compulsory license regime would mean that licenses to use standard-related patents for interoperability purposes would be available as a matter of right to third parties.

The challenge then is to establish terms on which licences would be available. An approach which would be in line with the standardization model, and which would also seem to be consistent with the recent decision of the European Commission in the *Microsoft* competition case, would be to make licences available on reasonable and non-discriminatory (RAND) terms.

This would ensure that the patent owner is not deprived of license revenue.

In this context it is noted that there is no authoritative interpretation of RAND nor is there any mechanism to resolve issues when multiple licenses are needed for the same product (because multiple patent owners own essential patents for the same standard) which can have the effect of increasing cumulative royalties, a risk which appears to be currently of concern in the industry with the growing complexity and multi-functionality of the technology and product offerings. In practical terms, the question is whether existing industry practices (RAND IPR rules of standards bodies etc.) are sufficient, as discussed in more detail below.

3. Misuse (*abuse*)

The patent misuse (or *abuse*) approach is an alternative to the exception, compulsory licensing and competition law approaches. Under the misuse approach, a patent would become unenforceable under certain specific circumstances. Whereas, under the exception approach, a patent covering an interface is, in effect, always unenforceable, under the compulsory licensing approach there is a requirement to license an interface patent (without any study into the merits of a particular case), and under the competition law approach a remedy is tied to a dominant position *and* an abuse, misuse provides a concept under which there must be a causal connection between the patentee's behaviour when using its interface patent and the potential impact on the market place, although the patent holder need not have a dominant position, at least as interpreted within the context of competition law.

A misuse rule would render a patent unenforceable if a certain set of criteria is met. For instance, an essential patent would become unenforceable for interoperability purposes if the patentee's behaviour (e.g. refusal to license or request for high royalties) would make it either technically or commercially unattractive for potential licensees to make an independent but interoperable product, taking into account the total cost of all necessary patent licenses from all relevant patent owners, and the typical operating margin for a particular line of business, having regard to the public interest in ensuring access to the patented interface.

The benefit of the misuse approach is that it can be tailored (by the courts) to meet the individual circumstances of each case.

Scope of derogation

In either the Limited Exception or Compulsory Licensing approaches and (but maybe to a lesser extent) the Misuse approach, the challenge for the legislature would be to define the scope of interoperability sufficiently narrowly to cover the category of interoperable inventions where - from a policy standpoint - there needs to be a derogation from the normal patent rights, but without unduly and unnecessarily impacting huge swathes of standards-related and non-standardized interface patents.

TRIPS

Any legislative solution which derogates from the patent right would have to comply with international treaty obligations under TRIPS (Agreement on Trade-Related Aspects of Intellectual Property Rights).

Specifically, under Article 30, the derogation (limited exception) must not (1) conflict with normal exploitation of the patent, nor (2) unreasonably prejudice legitimate rights of the patent owner, and (3) take account of legitimate third party interests.

Article 31 TRIPS allows for other use without the authorization of the right holder, and can be used as basis for granting compulsory licenses.

Interoperability Safeguards - self-regulation measures

Recent developments in the European Telecommunications Standards Institute (ETSI)

ETSI is an independent, non-profit organisation organised under French law whose mission is to produce telecommunication standards for Europe. ETSI also plays a major role in international standardization. ETSI comprises 654 members from 59 countries inside and outside Europe representing all stakeholders including manufacturers, network operators, administrations, service providers, research bodies and users, representing all the key players in the telecommunication arena.

ETSI IPR Policy

The ETSI IPR policy was first adopted as an interim policy in November 1994, and confirmed as a permanent policy in November 1997, after protracted negotiations among the membership over many years, and ultimately achieving approval of the competition authorities in Europe, US and Japan.

The IPR Policy is premised on two fundamental principles. First, that members are obliged to inform ETSI of essential patents in a timely fashion⁴, and second, that members ordinarily undertake to make licences available for disclosed patents on fair, reasonable and non-discriminatory (FRAND) terms (subject to reciprocity)⁵.

It is permissible for members to affirmatively derogate from the FRAND license commitment, and in that case ETSI can consider alternative technology solutions for the standard⁶.

ETSI IPR review

In November 2005 the General Assembly of ETSI approved the creation of a new IPR ad hoc group to review the IPR policy and investigate issues like FRAND and cumulative royalties. The work of the ad hoc group officially started in January 2006.

⁴ Article 4.1, ETSI IPR Policy

⁵ Article 6.1, ETSI IPR Policy

⁶ Article 8.1.1, ETSI IPR Policy

Key aspects currently under review in ETSI

The ETSI IPR policy requires Members to undertake to license their essential patents on fair, reasonable and non-discriminatory terms (FRAND). However, currently no express definition or qualification of FRAND exists in the ETSI rules.

Consequently, each essential patent owner can develop its own idea of how FRAND should be applied in practice. This fragmented approach means that when there are many essential patents and many essential patent owners the overall license cost, i.e. the “cumulative royalties”, are more uncertain.

Also, the increasing tendency for multi-function, multi-technology products means there are ever more patents covering the end product, giving rise to the phenomenon of so-called “royalty stacking”.

Overall, cumulative royalties are perceived to be uncertain and often too high, possibly even prohibitive. The application of FRAND at the cumulative royalty level as well as at the individual patent owner level can be difficult to achieve.

Also open standardization is increasingly attracting participants who possess patents but do not themselves manufacture standard-compliant products. While attracting technical contributions from such entities is in itself to be encouraged it also poses a risk of pushing up royalties in an unlimited way because such patent owners are merely licensors and as such are not constrained in their royalty claims. Manufacturers, on the other hand, are generally both licensors *and* licensees and being on both sides of the licensing fence has a natural balancing effect in royalty setting.

Another trend is for entities who are not at all active in the technology field to hold essential patents, for example they may have acquired them, perhaps only for licensing purposes, and sometimes such entities (popularly called “patent trolls”) may seek extortionate royalties, thus undermining the viability of the standard leading to unreasonably high royalty levels and creating uncertainty that is harmful to the sound functioning of the markets.

As an overall principle, FRAND has to balance the interests of both the developers and users of the technology. The major contributors to standards invest significant amounts of money and resourcing to develop open standards for the benefit of the whole industry and consumers. IPR policies need to be formulated in a way that such contributors are not at a competitive disadvantage due to their high investment in technology development but rather can be compensated for their effort. At the same time the technology needs to be affordable for the whole industry and the consumers so that the public can benefit from advancing technology. It is this public interest point which attracts the attention of policy makers.

Additionally there is the point that disclosure of essential patents to ETSI is based on a company’s own judgment of its patents and the declaration policy of each individual company can significantly vary. False or misleading declarations of essentiality have the potential to distort the perception of royalty expectations in the market place.

Minimum Change Optimum Impact (MCOI) Approach:

Against this background three telecommunications equipment vendors (Ericsson, Motorola, and Nokia) jointly submitted a proposal for minimum change to the ETSI IPR Policy, but which the authors claim addresses what are commonly believed to be the most important and pressing issues. According to the co-authors, the proposed minimum changes to the current regime would promptly achieve maximum improvement in the commercial and competitive landscape.

At the heart of this so-called “Minimum Change Optimum Impact” (MCOI) approach, is the proposal to revise the ETSI IPR policy to confirm the meaning of FRAND in order to assist in the unhindered development of commercially viable standards, and hence commercially viable standard-compliant products.

The proposed clarification would codify the twin principles of AGGREGATED REASONABLE TERMS and PROPORTIONALITY into the FRAND definition, as follows:

1. AGGREGATED REASONABLE TERMS means that in the aggregate the terms are *objectively commercially reasonable* taking into account the generally prevailing business conditions relevant for the standard and applicable product, patents owned by others for the specific technology, and the estimated value of the specific technology in relation to the necessary technologies of the product.
2. PROPORTIONALITY. Compensation under FRAND must reflect the patent owner’s proportion of all essential patents. This is not simply a numeric equation but the compensation must, within reasonable bounds, reflect the contribution.

In short, this would confirm that cumulative royalties, and not just the terms offered by an individual licensee, have to be reasonable; and that each patent owner’s individual entitlement to royalties is benchmarked against all other patent owners’ entitlements for the same standard.

Enforceability of the principles of Aggregated Reasonable Terms and Proportionality

The MCOI proposal would continue to rely on bilateral licensing and legal enforceability of the rules against anyone violating them, rather than establishing any special resolution mechanisms. Once a few cases have been heard in the courts, for example, it would help to establish a common and authoritative precedent of how FRAND is to be applied. In the mean time the codified definition will greatly help parties set the parameters in bilateral negotiations, especially in a case where either party is seeking royalties which are orders of magnitude away from reasonable expectations or significantly out of step with other royalty requests, and consequently could give rise to prohibitive cumulative licensing costs. Importantly, the codified definition in the IPR policy will enable and signal to judges in patent litigation that they can and should look at what is reasonable in terms of the *overall* cumulative royalty costs for a given standard and not just to assess whether the terms being offered by one particular licensor are fair and reasonable *in vacuo*. In other words the courts will be directed to take into account the cumulative royalty effect in standards where there are potentially many royalty claims.

The authors of the MCOI proposal argue that it is not necessary to impose a concrete royalty cap (which some have suggested) as market forces will take care of that, but that the principle of Aggregated Reasonable Terms allows flexibility to accommodate different parameters and considerations applying in different standards, under different market conditions and at different times. It also promotes the continued benefits available from bilateral licensing, where overlapping R&D and alternative technologies can be traded without duplicative costs to the end user.

It is claimed that, by influencing industry norms and behaviour, this proposal would also indirectly influence essential patent owners (a) who are not members of ETSI, and (b) who are not themselves manufacturing standard-compliant products, including “patent trolls”.

Transparency of Essential Patents: More Robust Essentiality Declarations

In order that the principle of Proportionality can be applied fairly in practice it is important that voluntary declarations of essential patents are as robust and reliable as possible.

The MCOI approach proposes the following two measures to enhance the reliability of essentiality declarations:

1. Complete Declarations

It is argued that the ETSI database needs to distinguish more clearly between complete essentiality declarations, i.e. those which include a full reference to the standard and relevant part of the standard, and incomplete declarations which do not. So, it is proposed that the database should be modified to flag even more clearly patent declarations that are incomplete so they can be easily distinguished.

2. Evidence of Essentiality

The authors of the MCOI approach are also proposing that the ETSI IPR policy should be revised to supplement the existing obligation (in Article 4.1) to disclose essential patents with a new commitment that anyone disclosing an essential patent will also be obliged to provide supporting evidence of essentiality (such as claim charts) to a prospective licensee on request in bilateral negotiations.

To be clear, this would not be a requirement that this evidence of essentiality is placed in the public domain. What is proposed is that supporting evidence concerning the relevant standard *must* be supplied on a confidential basis to a bona fide prospective licensee if they request it, specifically during bilateral license negotiations.

The MCOI authors believe this would be a significant benefit for prospective licensees and an important basis for ensuring that the principle of Proportionality works properly in practice. Furthermore, it will act as a disincentive for patent owners to over-disclose patents when there are no grounds to believe they are essential, because there will be an overarching commitment to provide evidence of essentiality if asked to do so in bilateral negotiations.

SUMMARY:

This paper explores the current debate about the perceived shortcomings in the patent regime in the standardisation context, specifically concerning the policy question of ensuring access to essential patents for interoperability purposes in the public interest. It explores possible approaches that might be available from both a legislative and self-regulatory standpoint. From the legislative perspective the paper proposes a possible new solution based on introducing a Patent Misuse doctrine into the patent law domain. This would have the potential to render a patent unenforceable for interoperability purposes having regard to both the public interest in allowing access to the patent, and to the patent owner's behaviour in seeking to allow or block access. From a self-regulation perspective the paper discusses the current project in ETSI to review the ETSI IPR policy, and specifically presents the so-called Minimum Change Optimum Impact (MCOI) proposal jointly contributed by Ericsson, Motorola and Nokia. The heart of the MCOI proposal is to clarify the meaning of FRAND in the ETSI IPR Policy by codifying the two principles of Aggregated Reasonable Terms and Proportionality. It also proposes measures for enhanced transparency of essential patents. This, it is claimed, would help ensure cumulative royalties for standardised technologies are available at objectively commercially reasonable levels for prospective licensees, while licensors would receive their fair royalty entitlements.

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