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Amanda Brock

Amanda Brock is General Counsel of Canonical, the commercial sponsor of the Ubuntu project. Having graduated with Honours from Glasgow University, Amanda went on to obtain a Masters in Comparative Jurisprudence from New York Uni- versity Law School and a LLM in IT and IP law from Queen Mary and Westfield, University of London. She is author of E:Business; The Practical Guide to the Laws and has written extensively on commercial and IT law.

Andrew Katz

Andrew Katz studied Natural Sciences and Law at Cambridge University where he graduated with honours in 1989. In 1991 he was called to the Bar, and in 1993 requalified as a solicitor. He moonlighted as a programmer during his studies at Bar School, programming in Turbo Pascal. He has released software under the GPL. He is currently a partner at Moorcrofts LLP, a boutique law firm in England's Thames Valley and advises a wide range of businesses on free and open source related issues. He has lectured and published widely on the subject.

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Tomasz Rychlicki

Tomasz Rychlicki graduated from the University of Gdańsk, the Faculty of Law, Center of European Law. He also studied at Chicago-Kent College of Law in the LL.M. Program in International Intellectual Property Law. Tomasz currently works for PATPOL, Warsaw. He is a member of the Editorial Board at the Journal of Intellectual Property Law & Practice published by Oxford University Press, Oxford.

Brendan Scott

Brendan runs a legal practice based in Sydney, Australia. Brendan is a founding member and a director of Open Source Industry Australia Limited. He is a past president of the NSW Society for Computers and the Law and a past editor of its journal. He has over 15 years of experience in Technology and Telecommunications law and has a special interest in open source and the law related to it.

Ywein Van den Brande

Ywein Van den Brande (b. 1977) studied law, information science and economics at the Catholic University of Leuven and Groep T (Leuven, Belgium), the Université de Rouen (Rouen, France) and U.C.L.A. (Los Angeles, USA). Ywein is an active member of the Free Software Foundation Europe and is a member of workgroups on information architecture and usability. Ywein is the author of several legal contributions on law and technology, and regularly speaks at conferences. He is a guest lecturer at Groep T and blogs on the CIF blog of the journal www.tijd.be.

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Partner, HH Partners Attorneys-at-law; Chairman, Validos Association, Chairman, Finnish IT law Association; Managing Director, Inventors Factory Association. Martin is a Finnish technology lawyer with particular specialisation in the areas of copyright, licensing and open source. He has authored and co-authored books on legal aspects of e-commerce, and has introduced collaborative models for delivering legal and other services.

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The editors wish to thank the Editorial Coordinators for their hard work and contribution to making the Review happen.

Hugo Roy (hugo@fsfe.org)

Hugo is Student in Economic Law at SciencesPo. School of Law, France Coordinator of the Free Software Foundation Europe where he studies study Economical Law, with a focus on the law of patents, copyright and trademarks. Currently he is also legal intern at Hewlett Packard's Open Source Competency Center

Shane Martin Coughlan (shane@opendawn.com)

Shane's academic background is in linguistics and politics, and his postgraduate research focused on cybernetic warfare. He founded FSFE's legal department in 2006, established the European Legal Network in 2007, and today focuses on improving efficiency in international technology markets.

Kari Kärkkäinen (kari_karkkainen@yahoo.com)

Kari is a software professional with close to 20 years of experience primarily in wireless telecommunications and embedded space, having successfully contributed to the development of pioneering technology solutions (e.g. the first Nokia communicator, and the first KJava (J2ME) implementation in a GSM phone). Besides being an MBA graduate, he has recently also obtained an LLM degree, as he has always been very interested in the legal matters related to software, especially open source software, and IT in general.

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The Editorial Committee wishes to thank the work of the many referees and peer reviewers whose professional expertise and dedication to high standards have made the publication of this issue possible.

Contact

All administrative, bibliographic and pre-publication enquiries should be directed to the Editorial Coordinators via email at:

admin@ifosslr.org

The Editorial Committee can be contacted via email at:

ed-com@ifosslr.org

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Editorial

Amanda Brock, General Counsel, Canonical

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Keywords
Law; information technology; Free and Open Source Software

I have the privilege of writing the editorial for this issue. I made the mistake of not going off on holiday in August and by default drew the short straw. So, lets start by saying happy October, yes, its October already not July. Some of you, our dear readers may have been disappointed not to have their copy of the journal to enjoy on their sun lounger this summer. All editorial committees find receiving the promised copy by the due date, a difficult task. In our enthusiasm to publish the first edition and our desire for a structured cadence of publication, we jumped to a 6 monthly publication cycle (remind you of any popular Linux distro), which revolved around publication in July and January.

With the benefit of hindsight, this was slightly naïve. We have been pushing people to deliver articles, as their business peaks, just before their summer and Christmas holidays. This is a difficult task for the brave souls who write for publication and those who review and edit and one which has frankly become unsustainable.

With that in mind, as an editorial committee, we have made the decision to move our publication dates starting from this issue, going forwards. We will in future publish in September/October and then in March, thus avoiding the holiday panic and receiving articles from holiday refreshed contributors.

We accept contributions of a legal and academic nature in the form of articles, platform or opinion pieces re the state of our industry etc., and of course technical contributions. In all instances the journal is independent and the views expressed are those of our esteemed authors and not our overworked and underpaid editorial committee. In the case of the platform pieces, this is an opportunity for contributors to have their views heard. The committee believes that this is a useful reference to both the well versed in open source matters and new entrants. We have to date had both general editions and – starting with this issue of the publication - themed editions, the latter approach continuing in Spring 2012 with an exploration of issues around GPLv3 licensing.

If you would like to contribute to the next GPLv3 themed issue, we are looking for contributions towards the end of November. Simply contact the editorial committee with a 100 word synposis of your proposed article for consideration – ed-com@ifosslr.org

But back to this edition. Iain G. Mitchell QC and Stephen Mason, Barrister have pulled together a significant piece of thought,[1] which along side the articles by Simone Aliprandi and Avi Freeman, delve deep into some of the knotty issues of patents, standards and interoperability. In a world of patent wars, this unprecedented depth of analysis and study has provided the perfect basis for our first coordinated discussion.

Having spent only 4 years in Canonical, dealing with the delights of open source I am still a relative Newbie in this industry. The great and the good of our profession have spent 10 and in some cases 10s of years, advising on the issues around this. We all have different experiences in our open worlds, whether these relate to open data or code and it would be great to have articles from a wide pool of people with varied experience and knowledge levels. So, please consider making a contribution, to our community of lawyers.

1 The full text of the Opinion, along with Andrew Katz's brief is available on the IFOSSLR website.

About the author

Amanda Brock *has been General Counsel of Canonical – lead sponsor of Ubuntu - since early 2008. She is a lawyer with over 15 years experience of commercial and IT law, more than 10 of these years being in-house working in commercial organisations including as European Manager at DSG International (Europe's biggest computer retailer) and UK Legal Director with Aramark. Whilst working for DSGi she was the first lawyer at the ISP, Freeserve and as a member of the management team, dealt with all legal aspects of the set up and operation of the business through to its IPO in 1999.*

Amanda gained a masters degree (LLM) with merit in Intellectual Property and IT Law at Queen Mary and Westfield college, University of London (1999) and a Masters in Comparative Jurisprudence (MCJ) from New York University (1992- Rotary International Scholarship). Having studied for her first degree, LLB (Hons) at the University of Glasgow, Amanda is admitted as a solicitor in both England and Scotland.

She has presented extensively internationally in businesses, conferences and universities, has published many articles relating to commercial, e-commerce, open source and IP law. She is the author of the book "E-business – the practical guide to the laws" 3rd edition,2012 (Spiramus) and is co-authoring a book on Open Source Law with Andrew Katz.

She is an active participant in the FSFE's European Legal Network, is one of the co-authors of its Contract Risk Grid, Chair of its App Store Special interest group and has been very involved in the Linux Foundation's Member's Counsel. She led the FOSS Contribution Agreement Standardisation project, Project Harmony to Phase 1. Amanda is a member of the Board of the QMW, University of London Open Source Centre . She never sleeps.

Interoperability And Open Standards: The Key To True Openness And Innovation

Simone Aliprandi,[a]

(a) Lead of the Copyleft-Italia.it Project,
member of Array (Arraylaw.eu) and
Ph.D. Candidate at Bicocca University of Milan

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Abstract
Most people agree that providing a shared set of standards produces a broad advantage for all actors involved in the ICT market. First of all, it's an advantage for active operators in that market (companies, developers, designers), but also for users of computer technologies, simple observers and scholars as well.
However, if on one hand the same concept of standard appears to be quite intuitive and broadly known, on the other hand not so many people are aware of the complex dynamics behind the standard definition process, particularly in relation to today's globalized and technology-savvy world. Even fewer people seem aware that, when a standard definition process is not being carried with true transparency and care, this procedure could even become counterproductive for the innovation itself. Therefore, in recent years, a new approach for the standard definition process has been emerging, with the aim of producing standards based on the broadest level of openness and interoperability: the so-called open standards.
This essay will start by addressing the broad concept of standards, with specific reference to the world of technology; later, it will focus on the drafting process of standards, highlighting major problems regarding its legal, economic and technology aspects. The final section will concentrate on the very concept of an open standard.

Keywords
Free Libre and Open Source Software; Innovation; Open standard; Open format; Standardization; Standard-setting process; Standard-setting organizations; Interoperability; Copyright; Royalty-free; Patent.

1. The crucial role of interoperability

Many sources consider interoperability one of the key features pertaining to freedom of information in a broader sense. Indeed, the lack of this "interoperable by default" feature threatens to crumble the whole FLOSS (Free Libre and Open Source Software) system.

According to its general definition, interoperability is the intentional design of a technology product or system, which allows it to cooperate with other products or systems without restriction or difficulty, thus producing a reliable outcome and resource optimization. The main goal of an interoperable system is to facilitate interaction between different software applications and to enable sharing and re-use of information among non-homogenous systems.

Based on this definition and given the current evolution and state of the mass computer market, it is clear that interoperability plays a pivotal role in ensuring competition between all of the actors involved. Major computer companies with large market shares can easily control and limit the competitive power of their rivals with intentional product design, a conduct defined by the competition law as "abuse of dominant position".

Let's consider a typical scenario of a global corporation that produces the most common operating system, while, taking advantage of the basic tools provided by the industrial trade law (industrial secret, copyright, patent), effectively prevents other companies from accessing the data needed to develop applications fully compatible with their operating system. In this fashion, the corporation would also effectively appropriate the application market, given the competitive edge provided by the internal availability of their data. Similar practices should be (and, fortunately, actually are) monitored and properly sanctioned by the Antitrust Authorities.

The complexity and importance of those aspects within the current economy put the spotlight on the central role of interoperability. Indeed, during the last few years this issue has gained particular relevance in public opinion and in International policy bodies as well. As a result, today, we have a more articulate and adequate definition of interoperability, promoted by a research study launched and concluded in 2004 by the IDABC (Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens) on behalf of the European Commission. The study focused on the implication of e-government and the relationship between citizens and public Administrations. In the final report, this research includes a detailed definition of the interoperability concept and a list of major objectives pertaining to the EU States. The document title is "European Interoperability Framework for pan-European eGovernment Services", also known by its acronym EIF. Paragraph 1.1.2. provides the following introduction to the actual definition of interoperability:

> *"Interoperability means the ability of information and communication technology (ICT) systems and of the business processes they support to exchange data and to enable the sharing of information and knowledge."*

Later on, the EIF document delves into the practical issues of this concept by detailing its three different levels, that is: organizational, semantic and technical interoperability:

- **Organizational interoperability**. This aspect of interoperability is concerned with defining business goals, modelling business processes and bringing about the collaboration of administrations that wish to exchange information and may have different internal structures and processes. Moreover, organisational interoperability aims at addressing the requirements of the user community by making services available, easily identifiable, accessible and user-oriented.
- **Semantic interoperability**. This aspect of interoperability is concerned with ensuring

that the precise meaning of exchanged information is understandable by any other application that was not initially developed for this purpose. Semantic interoperability enables systems to combine received information with other information resources and to process it in a meaningful manner. Semantic interoperability is therefore a prerequisite for the front-end multilingual delivery of services to the user.

- **Technical interoperability**. This aspect of interoperability covers the technical issues of linking computer systems and services. It includes key aspects, such as open interfaces, interconnection services, data integration and middleware, data presentation and exchange, and accessibility and security services.[1]

Here, it is useful to quote a tip by computer adviser Bob Sutor, who recommends avoiding any confusion with the "intraoperability" concept — some kind of fake interoperability where a single product or standard or platform remains still predominant in regards to other comparable items.

> *"I think the word 'interoperability' is being similarly abused. When a single vendor or software provider makes it easier to connect primarily to his or her software, this is more properly called intraoperability. In the intraoperability situation, one product is somehow central and dominant, either by marketshare, attitude, or acquiescence. The connectivity is supported by protocols and data formats that favor the central software, and those are often prescribed by the provider. […] Compare this with real interoperability. In this situation, we use truly open standards that do not favor any one software provider. They work to allow two pieces of software to work together as they do any two others. Certainly one of the providers might have a superior market position, but it is not given or maintained by the asymmetrical intraoperable situation."*[2]

2. The "standard" concept

Within the context of interoperability, the concept of "standard" emerges as a common but often overlooked feature. Any generic dictionary could provide the following definitions for the term standard:

> *Something, such as a practice or a product, that is widely recognized or employed, especially because of its excellence.*[3]

> *A pattern or model that is generally accepted.*[4]

Both definitions make clear that this concept does not refer exclusively to the technology field, but more in general to the manufacturing and industrial markets.

However, by limiting our analysis to the technology field, it becomes easy to understand how the standard concept pairs perfectly with the interoperability concept. Indeed, a broadly recognized

1 http://ec.europa.eu/idabc/en/document/3473.html
2 Sutor, Bob (2006) 'Interoperability vs. intraoperability: your open choice', http://www.sutor.com/newsite/blog-open/?p=1260
3 http://www.thefreedictionary.com/standard
4 http://dictionary.cambridge.org/dictionary/british/standard_2

standard, whose features are publicly available, fosters the development of adequate technology solutions along two directions: by accessing such information, designers and developers can avoid wasting resources and have more opportunities to see their product succeed in the market; since the products designed are based on shared standards, the final users will have assurance that such products will actually perform seamlessly together.

This approach is also confirmed by an interesting definition to be found in the online encyclopedia Webopedia:

> *"[A standard is] a definition or format that has been approved by a recognized standards organization or is accepted as a* de facto *standard by the industry. Standards exist for programming languages, operating systems, data formats, communications protocols, and electrical interface. From a user's standpoint, standards are extremely important in the computer industry because they allow the combination of products from different manufacturers to create a customized system. Without standards, only hardware and software from the same company could be used together. In addition, standard user interfaces can make it much easier to learn how to use new applications."*[5]

3. Differences between *de jure* and *de facto* standards

A traditional distinction pertaining to the standard field lists two major categories — here below sketched in a simple way just to provide a general introduction, while a deeper analysis will follow in further sections of this essay. These two categories are: *de jure* standard and *de facto* standard. *De jure* refers to a standard ensuing after a fair technical analysis and definition process, carried out by the appropriate organizations, and based on a formal definition and description drafted in a specific document. As a result, the organizations in charge of these tasks are known as "standard-setting organizations" (or more generically, "standardization bodies").

These norms are being drafted through a complex mechanism that includes consultation and analysis stages carried by the regulatory body, along with experts in the specific industrial sector and the so-called stakeholders, that is, all actors potentially interested in the emerging standard. Obviously, a specific norm becomes more authoritative when relying, in particular, on the quantity of stakeholders involved in the definition process and on the transparency and precision of the final standard description. The following sections will further investigate the dynamics of the regulatory process.

It should be noted here, however, that not always does any given model raise to the *de jure* standard status. In fact, while some reference models are commonly considered 'standard' simply because of their widespread dissemination, they have never actually been recognized as such by the appropriate organizations through a regular standardization process. In these instances, we have a *de facto* standard.[6]

5 http://www.webopedia.com/TERM/S/standard.html

6 Here is the "*de facto* standard" entry on the Webopedia Computer Dictionary: *A format, language, or protocol that has become a standard not because it has been approved by a standards organization but because it is widely used and recognized by the industry as being standard* (available at: http://www.webopedia.com/TERM/D/de_facto_standard.html)

Therefore, we should focus our attention on the generic definition just mentioned above, where a major role is played by an unspoken "agreement". Indeed, any definition implies a unifying element upon which a technical model could easily be considered a standard by virtue of a general agreement, that is, based on a more or less explicit acceptance.

In this context, it is worth taking into account another definition for the term 'standard', included in the "Frequently asked questions" section of the International Organization for Standardization (ISO) website:

> *"[A standard is] a documented agreement containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics to ensure that materials, products, processes and services are fit for their purpose."*[7]

For comparison purposes, here is the definition included in the document drafted by ISO/IEC and called 'Rules for the structure and drafting of International Standards':

> *"[A standard is] 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 (note: Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits)."*[8]

4. The standardization process

As mentioned earlier, the path leading to an actual standard definition is called a standardization (or regulatory) process: it involves several stages, relies on the conventional features defining the standard itself and is carried out by specialized bodies whose authority and credibility are widely recognized.

Defining a standard differs from the creation of a typical legal norm. The standard refers essentially to the idea of a "norm" intended as a "kind" or "model" to which operators of a specified market should adhere to in order to be part of the "game", to avoid risking the exclusion from the game itself (or at least a tougher participation). In other words, in the common meaning (legal norm) the founding idea is based on a social group whose individuals are all bound to abide by certain rules and where any violation leads to a judicial sanction. Instead, the other instance (standard definition) implies a reference model defined by conventional dynamics, and any interested party (market operators) can choose whether to accept them — keeping in mind, though, that the choice of non-acceptance will lead to serious difficulties in its market operations.
The regulatory process, further detailed below, is one of the key points of today's innovation in a world more and more permeated by technology. Accordingly, this is a very sensitive and complex step, involving several issues of legal, economic, political and ethical nature — well beyond technology itself and requires a multi-faceted approach.

7 http://www.iso.org/iso/support/faqs/faqs_standards.htm
8 http://www.iec.ch/tiss/iec/Directives-Part2-Ed5.pdf

4.1. Major principles of the standard-setting activity

The standard-setting activity is based on a few general principles whose compliance is essential to provide reliability and authority to the final standard. Those principles are:

- A **consensual agreement**, that is, reaching the maximum consensus possible between all parties involved in the regulatory process. This is a pillar feature for the credibility of the entire process and the overall standard stability;
- A **democratic procedure**, given that a process based on democratic mechanisms ensures that "all parties are being represented in each stage […] and that they can concur in a leveled way to a project consensual approval";
- **Transparency**, given the importance of ensuring that along the standard-setting process all involved parties have "the right, and the duty as well, to understand the 'rules of the game', that is, the regulations governing the activities of the various committees and working groups and their areas of expertise, along with full access to any documentation detailing the very regulatory process in progress".[9]

Of course, these are mostly ideal principles that "should" give shape to the standard-setting process. In fact, we shall see that not all standard setting organizations follow these principles in a consistent and regular way.

4.2. The stages of a standard-setting process

Each standardization body issues its own norms, adopts its own procedures and follows its own practices for the standardization process. However, in almost any standardization process there is bound to be a shared paradigm upon which our analysis can rely. According to the model proposed by ISO[10], each process develops along three general stages:

- The need for a standard is usually expressed by an industry sector, which communicates this need to a national member body. The latter proposes the new work item to ISO as a whole. Once the need for an International Standard has been recognized and formally agreed, the first phase involves definition of the technical scope of the future standard. This phase is usually carried out in working groups, which comprise technical experts from countries interested in the subject matter.
- Once agreement has been reached on which technical aspects are to be covered in the standard, a second phase is entered, during which countries negotiate the detailed specifications within the standard. This is the consensus-building phase.
- The final phase comprises the formal approval of the resulting draft International Standard (the acceptance criteria stipulate approval by two-thirds of the ISO members that have participated actively in the standards development process, and approval by 75% of all members that vote), following which the agreed text is published as an ISO International Standard.

9 These three principles are listed in UNI (eds.) (2006) 'Le regole del gioco', UNI (p. 22), available online at: http://www.uni.com/uni/controller/it/chi_siamo/regole_gioco.htm

10 http://www.iso.org/iso/standards_development/processes_and_procedures/how_are_standards_developed.htm

According to another source,[11] the definition of an International Standard could also pursue the following steps:

- Proposal and necessity evaluation about the standard itself;
- Putting together a first draft;
- Consensus seeking based on that draft;
- A broader inquiry stage, with the project being disseminated outside the circle of interested parties to gather comments, suggestions, criticism or support;
- Approval of the final draft by the standard-setting organization;
- Publication of the official standard;
- A possible revision stage, in case of specific requests or needs emerging after its publication.

It is clear that this second scheme is just a more detailed version of the previous procedure. In most cases, the drafting of the standard technical language is being managed by internal committees and working groups, including experts representing all interested economic and social stakeholders (producers, suppliers, customers, final users, distributors, research centers, consumers, public administration officials, etc.). Therefore, the standardization body exerts mostly a working coordination role and makes its own organizational structure available.

Finally, it should be noted that there has been an increasing trend where international standardization bodies decide to adopt a standard already formalized by other regulatory bodies: in these instances, we have a so-called “second degree standardization”.

This trend is particularly evident in complex application areas (such as, indeed, the ICT sector), where the standardization process requires long and articulated technical evaluations and could result in a better outcome if managed by a specialized body. This way, such body could address the standard at an advanced stage for a final revision and ratification.

4.3. Standard publication and usage

The standardization process produces a final text or hypertext document, including all necessary information to follow and reproduce the model described there — the so-called standard specifications. Therefore, companies interested in developing a product according to that standard must have full access to those specifications.

With few exceptions, as explained below, at this stage the major standardization bodies see the documentation produced as content covered by industrial trade law (secret, copyright). As a consequence, usually those standardization bodies do not distribute their documentation free of charge (except for a few particular instances) and, in order to access it, the interested operators must pay a royalty and acquire the necessary permission.

11 UNI (eds.) (2006) 'Le regole del gioco', UNI (p.108), available online at: http://www.uni.com/uni/controller/it/chi_siamo/regole_gioco.htm

Relying on such rights, the standardization body could even decide to regulate access and use (and, indirectly, the implementation) of that standard by the customer. It is important to point out, however, that these considerations essentially pertain to the standard documentation access, rather than to the subsequent stage of its implementation. In fact, in addition to legal protection to access the standard documentation, there could also be some industrial property rights (that is, patents) on the technical solutions included and described in the standard itself. Therefore whoever acquires such documentation could still be prevented from adopting and implementing the standard, unless by paying another royalty to the possible patent holders.[12]

This is a crucial distinction to fully understand the legal intricacies related to regulatory and development issues within the technology sector. On the other hand, as we will soon illustrate, intellectual property management — i.e., the licensing of patents — is indeed one of the most sensitive matters in the field of standardization.

Finally, we should keep in mind that most of the revenue for the standard-setting organizations — besides membership fees from associated or affiliated parties — comes from distributing the documentation related to those standards and from licensing the standard itself to be implemented by entities (companies and other professional operators) not actively involved in the standardization process itself.

5. The ICT sector: between *de facto* standards and network externalities

As mentioned earlier, the issues around interoperability and shared standard have particular relevance in the ICT sector. In this context, Massimiliano Granieri effectively points out that "the proliferation of rights and stakeholders involved in the standard definition of a certain product grew very large in the information and communication industry, featuring complex assets and system assets where interoperability becomes the basic condition for existence of the market".[13] Therefore, the direct link between this picture and the strong presence of network externalities makes the ICT sector more inclined than other fields to the affirmation of *de facto* standards and not-so-virtuous market dynamics, where the winner is not the best but rather the strongest and most determined actor.[14]

As illustrated in the previous chapter, in the past there have been some instances of successful *de facto* standards, that is, reference models able to force themselves and settle due to smart market strategies rather than on actual test of their features. It is safe to say that empirically the winner was not always the most effective and innovative standard.

Indeed, the most emblematic and often mentioned case of such a situation points directly to the technology world (specifically, about the home video-recording formats): the VHS format, proposed

12 According to some sources, this behaviour is a threat to the entire standardization process. For example, see this detailed report about the Rambus case provided by Carlo Piana: http://www.piana.eu/rambus_ce.

13 Calderini, M.; Giannaccari, A.; Granieri, M. (2005), 'Standard, proprietà intellettuale e logica antitrust nell'industria dell'informazione', Il Mulino (p. 34)

14 *The* de facto *standard solution relies on market dynamics, self-regulation effects and operator support. The actual selection of a* de facto *standard itself, which is not necessarily the best available, is exclusively or mostly due the power exerted by the specific actors (as in the case of the Microsoft operating system);* (*ibidem,* p. 45-46)

in 1976 by JVC, defeated its direct competitor, the Betamax format, developed in 1975 by Sony. A short summary of this story helps us to better understand the market dynamics behind similar practices:

> *"When home VCRs started to become popular in the UK, the main issue was one of availability and price. VHS machines were available through the high street rental chains such as Radio Rentals and DER (most of whom were owned by Ferguson Electronics, who were part-owned by JVC, the inventors of VHS), while Beta was seen as the more upmarket choice for people who wanted quality and were prepared to pay for it. By 1980, out of an estimated 100,000 homes with VCRs, 70% were rented, and the presence of three (the third being Video 2000) competing formats meant that renting was an even more attractive choice, since a small fortune (about £2000 or $3900 in today's prices) could be spent on a system which may become obsolete. By the time Betamax machines became easier to rent, VHS had already claimed 70% of the market."*[15]

These strategic mechanisms supporting a *de facto* standard affirmation in the market are being studied by economics theorists, particularly within the context of the so-called network economies addressed earlier in this article.

6. Major issues facing the standardization process

The following paragraphs will try to focus our reader's attention on the major issues highlighted by the scientific literature (particularly in the legal and economic fields) regarding the standardization process. More than a complete discussion, we will provide a general framework and 'food for thought', referring to other and more specialized sources for a deeper assessment.

6.1. Standard and technology innovation

The framework outlined so far seems to suggest a common virtuosity and desirability of the standardization itself. As a consequence, we could easily say that the existence of pre-defined reference standards is always beneficial to technology development. However, most careful observers underline that a much more complicated issue is at stake here.

When establishing a specific standard, even if under the most transparent and shared procedures, we try to crystallize a specific reference model dictating the future development of a certain technology. However, at the same, time we are fully aware that any development of technology relies on fast and steady evolution — knowing all too well that eventually any effort to crystallize will be overwhelmed by the current of this flooding river. In other words, a specific standard would only illustrate the current state of the art and the techniques pertinent to the moment of the standard setting, or just a bit beyond that.

Therefore, the standardization process should take into account these dynamics and maintain a fluid perspective in order to encourage rather than stifle innovation. The stakeholders involved in the standardization process should consider a long-medium range viewpoint, so that the standard would

15 http://en.wikipedia.org/wiki/Videotape_format_war

become a pillar and a foundation providing actual support to future technology solutions. This is the reason why in most cases a technology model, when it is relatively solid and well-known, gets recognized as a standard.

Mario Calderini points out a crucial issue when explaining that the standardization process comprises an implicit co-existence between two opposing forces that should be kept under a tightly controlled balance if our aim is to truly gain more neutrality and technological innovation:

> *On one hand, we have a typical problem related to the standardization process: ensuring that the convergence procedures come to fruition with efficient outcomes (selecting the best technology available) as soon as possible. On the other hand, we have to ensure a virtuous coexistence between platform openness and interoperability and the need to define a competitive context able to foster innovation.*[16]

As a consequence of this situation, another risk emerges: a badly structured standardization system could lead to a deadlock and hardening of the market, where the replacement of an obsolete standard with a more modern one could be stifled for purely strategic reasons. On the one hand, when a standard has taken roots -- that is, it is being widely adopted by companies and broadly used by consumers — it encourages a natural inertia, which makes it particularly difficult to replace with a new, innovative and technologically superior standard.

Addressing a key point within this framework, Andrea Giannaccari effectively underlines that "positive network features could become high entry barriers — wisely modeled by lock-in strategies — with the not-so-remote risk that such practice could even lead to an oligopolistic tunnel, thus putting offplay or delaying the entry of superior technologies".[17]

6.2. Regulatory activities and intellectual property management

The growing need for a standardization approach in today's ICT field, aimed more and more at technological convergence and integration, seriously calls into question some of the basic paradigms of intellectual property. This is because the very standard definition development feeds on an apparent contradiction: when a company gets involved in a standardization process, it is required to play in the open, it must share its own know-how with the other stakeholders about the very technology that is being considered in view of standardization. Obviously, in a broader sense, this know-how includes not only the business secrets typical of any technology design and development activity, but also (and foremost) industrial property rights such as patents and copyright.

The technical definition for this showdown is "IPR (Intellectual Property Rights) disclosure", and it represents one of the key points on the roadmap to standard definition. Indeed, the holders of industrial property rights should truly embrace a collaborative and transparent approach, by openly declaring their property rights on the technical solutions being considered for the standardization process and by agreeing not to make strategic use of these tools of legal protection. In fact, we could picture an instance (actually, not so rare), where one of the companies involved in the standardization

16 Calderini, M.; Giannaccari, A.; Granieri, M. (2005), 'Standard, proprietà intellettuale e logica antitrust nell'industria dell'informazione', Il Mulino (p. 17).

17 *ibidem* (p. 91)

process hides from the other stakeholders its own patent on part of the very technology that is becoming a standard. That company could even decide to disclose its exclusive rights only after the standard has been formalized and published, thus requiring a royalty fee or even threatening legal action against the other parties. This would be an unfair behavior from the ethical and competitive standpoint in the first place but also quite dangerous for the entire standardization system. This system could easily be stifled and could miss its essential goal of establishing a virtuous platform aimed at innovation and interoperability. This is the main reason behind transparent and consistent policies adopted by major standard-setting organization on intellectual property).[18]

In addition, we must consider that, as mentioned earlier, often after a standard has been formalized, it still might contain technical solutions covered by some sort of property rights. Therefore, it is crucial to avoid risking that the subsequent adoption of standards by operators foreign to the standardization process itself could become a "trap"[19] with heavy consequences from a legal point of view. Indeed, the discovery of a patent later on in the development stage of a product or application will put the same developer in an extremely weak contractual position.
According to some authors, the instrumental use of intellectual property rights gains primary importance for the functionality of standards and, if not properly monitored, it could even transform into some sort of "pathology" capable of degrading the entire standardization system.[20]

6.3. Standardization and competition issues

It is common knowledge that anti-trust bodies ensure fair market competition by closely monitoring the organizations where companies draft agreements on market development, exchanging information and establishing timetables, procedures and prices for their products and services. According to some sources, the standard-setting organizations could seize up on these competition dynamics due to their specific nature.

Within the European context, the most apt regulation is Article 101 of the Treaty on the Functioning of the European Union[21], specifically addressing similar agreement practices among tech companies (also called "cartels"). The first two paragraphs appear to be quite strict in prohibiting similar

18 *While encouraging a simpler innovation process, the strategy of including technologies covered by intellectual property rights in a certain standard could also promote a specific agenda by the same property rights holders. […] The behaviour of standard-setting organizations becomes crucial in dealing with the various issues related to intellectual property rights.* (*ibidem*, p. 100)

19 Some sources define these instances as "patent ambushes". For more details on this issue, see: Hueschelrath (2008) 'Patent Ambushes in Standars Setting Organizations. Implications for Antitrust Policy and the Design of IP Rules', AEA, available at http://www.aea-eu.net/2008Tokyo/DOCUMENTS/Publication/Abstract/HUSCHELRATH.pdf. See also: Farrell, Hayes, Shapiro, Sullivan (2007) 'Standard Setting, Patents, and Hold-Up', 74 Antitrust Law Journal No. 3; or just the Wikipedia entry: http://en.wikipedia.org/wiki/Patent_ambush

20 See this excerpt from the Rambus case mentioned earlier: *Ghosts haunt the standardization process. They go by several names and come in different forms: "standards abuse", "standards hijacking", "patent ambush", "royalty ambush", "patent trolling". The standardization world has never been so much under fire. Some companies try to bend the standardization process to fit their own selfish interest, without any regard for the common weal. Some others just sit and wait until some of their patent claims are "necessarily infringed" by a standard, the industry is locked in, and then pass the hat to collect the high toll that standard-abiding companies are forced to pay, in spite of the licensing rules of the standard setting bodies (SSB) that would require Reasonable And Non Discriminatory conditions (RAND) as a prerequisite for inclusion of any patented contribution into the standard. Others do the same, but in addition they actively seek to seed the standards with their own patented technology.* Piana, Carlo (2009), 'Rambus and patents in standards', available at http://www.piana.eu/rambus_ce

21 The full text of the treaty is available at: http://eur-lex.europa.eu/en/treaties/index.htm

practices and many provisions seem to directly address the standard-setting organizations.

> *1. The following shall be prohibited as incompatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular those which:*
>
> *(a) directly or indirectly fix purchase or selling prices or any other trading conditions;*
>
> *(b) limit or control production, markets, technical development, or investment;*
>
> *(c) share markets or sources of supply;*
>
> *(d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;*
>
> *(e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.*
>
> *2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void.*

However, this prohibition gets less stringent in the third paragraph, whose provisions seem to protect exactly the existence of shared agreements among companies aimed at providing standardization definitions.

> *3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:*
>
> *- any agreement or category of agreements between undertakings,*
>
> *- any decision or category of decisions by associations of undertakings,*
>
> *- any concerted practice or category of concerted practices,*
>
> *which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit [omissis].*[22]

In other words, the EU could consider legitimate, on a case by case basis, the kind of business agreements that do not pose any danger to the balance of competition and, therefore, exempt them from the prohibition clauses listed in the first paragraph of Article 101 (ex 81).

22 For more details, see the EC recommendation N. 330/2010 of 20th April 2010, in regards to Article 101, paragraph 3, of the Treaty of EU guidelines about vertical cooperation agreements and shared practices.

In fact, the European Commission takes care of providing regular instructions about the application of Article 101 provisions in order to help companies choose and abide by the agreements compatible with the competition rules.[23]

Beyond this general framework about the application range of Article 101 (ex 81), we should also take into account more specific and complex problems, particularly those issues that entail the anti-trust regulation principles and the strategic use of industrial property rights within the standardization process itself (including, for example, the issue technically defined as "patent pooling"[24]) mentioned above.

According to some important authors, there are meaningful points of contact and contrast among the standardization process, industrial property rights and fair competition regulations. Indeed, any technology right does not refer just to the possibility of creating and marketing a certain technology, but also provides control over market competition options and related products that are based on or will use such technology.

In addition, we should keep in mind the differences existing between the US and the European models. As a consequence, the legal and economic approach differs in regards to the attrition between standardization and competition rights.

7. Open standards

Based on the general picture illustrated above, in recent years the technology world at large (manufacturers, user communities, scholars and observers) has been witnessing a lively debate on the need to come up with standards capable of ensuring the most transparency possible along their adoption process and to allow free access to the related documentation, in order to maximize the scope and range of interoperability. To better illustrate this state of affairs, here below we will highlight some definitions drafted by authoritative sources.

7.1. The Open Standard definition by Bruce Perens

As a renowned representative of the FLOSS community and author of several popular essays on the issue, Bruce Perens has been quick to provide a clear and exhaustive definition of open standards. In his personal website[25], Perens lists six essential requirements for the establishment of an open standard:

- **Availability**: Open Standards are available for all to read and implement;
- **Maximize end-user choice**: Open Standards create a fair, competitive market for implementations of the standard. They do not lock the customer in to a particular vendor or group;

23 See for example the 'Guidelines on horizontal cooperation agreements' available at http://europa.eu/legislation_summaries/competition/firms/l26062_en.htm

24 *In patent law, a patent pool is a consortium of at least two companies agreeing to cross-license patents relating to a particular technology* (http://en.wikipedia.org/wiki/Patent_pool)

25 http://perens.com/OpenStandards/Definition.html

- **No royalty**: Open Standards are free for all to implement, with no royalty or fee. Certification of compliance by the standards organization may involve a fee;
- **No discrimination**: Open Standards and the organizations that administer them do not favor one implementor over another for any reason other than the technical standards compliance of a vendor's implementation. Certification organizations must provide a path for low and zero-cost implementations to be validated, but may also provide enhanced certification services;
- **Extension or subset**: implementations of Open Standards may be extended, or offered in subset form. However, certification organizations may decline to certify subset implementations, and may place requirements upon extensions;
- **Predatory practices**: Open Standards may employ license terms that protect against subversion of the standard by embrace-and-extend tactics. The licenses attached to the standard may require the publication of reference information for extensions, and a license for all others to create, distribute, and sell software that is compatible with the extensions. An Open Standard may not otherwise prohibit extensions.

This definition has been applied in several frameworks, including a research study carried out in 2007 by UNDP (United Nations Development Programme) covering interoperability in e-government, under the title of "New Guidelines on e-Government Interoperability Developed by Governments for Governments". However, the document part of this research states the lack of general consensus on the requirements described by Perens, considered too restrictive by some sources. The controversial part is essentially the "no royalty" requirement: it seems excessive to impose a royalty-free model, given the possibility that a fee payment, even if based on reasonable and non-discriminatory conditions, could actually represent a major incentive to the standard development and management.

7.2. The Open Standard definition by the ITU-T

This latter position has been embraced, among others, by the Telecommunication Standardization Sector (ITU-T), the organization coordinating standards for telecommunications on behalf of the International Telecommunication Union (ITU) and based in Geneva, Switzerland. The ITU-T has taken a different stance on the Open Standard concept, providing first a broad encyclopedia-style definition and then listing a series of requirements. The following is the basic definition available on the ITU website:

> *"Open Standards are standards made available to the general public and are developed (or approved) and maintained via a collaborative and consensus driven process. Open Standards facilitate interoperability and data exchange among different products or services and are intended for widespread adoption."*[26]

The same page includes a list of the requirements proposed by ITU, with the notice that those are not obligations but rather some general and illustrative conditions:

- **Collaborative process**: voluntary and market-driven development (or approval) following a transparent consensus-driven process that is reasonably open to all

26 http://www.itu.int/ITU-T/othergroups/ipr-adhoc/openstandards.html

interested parties.

- **Reasonably balanced**: ensures that the process is not dominated by any one interest group.
- **Due process**: includes consideration of and response to comments by interested parties.
- **Intellectual property rights (IPRs)**: IPRs essential to implement the standard to be licensed to all applicants on a worldwide, non-discriminatory basis, either (1) for free and under other reasonable terms and conditions or (2) on reasonable terms and conditions (which may include monetary compensation). Negotiations are left to the parties concerned and are performed outside the SDO.[27]
- **Quality and level of detail**: sufficient to permit the development of a variety of competing implementations of interoperable products or services. Standardized interfaces are not hidden or controlled other than by the SDO promulgating the standard.
- **Publicly available**: easily available for implementation and use, at a reasonable price. Publication of the text of a standard by others is permitted only with the prior approval of the SDO.
- **On-going support**: maintained and supported over a long period of time.

7.3. The Open Standard definition by the IDABC

Finally, here is a less articulated, but concise and clear, definition which today main institutional bodies consider the most reliable one. This definition is included in the above-mentioned European Interoperability Framework (EIF) and has been adopted by several standardization organization and public institutions, particularly in their regulations and recommendations related to e-government. According to the definition drafted by the IDABC[28], a standard is considered "open" when:

- The standard is adopted and will be maintained by a not-for-profit organisation, and its ongoing development occurs on the basis of an open decision-making procedure available to all interested parties (consensus or majority decision etc.).
- The standard has been published and the standard specification document is available either freely or at a nominal charge. It must be permissible to all to copy, distribute and use it for no fee or at a nominal fee.
- The intellectual property — i.e. patents possibly present — of (parts of) the standard is made irrevocably available on a royalty-free basis.
- There are no constraints on the re-use of the standard.

27 Standard Developing Organization

28 This EIF definition is based on the Italian version available here: http://www.uni.com/uni/controller/it/comunicare/articoli/2007_1/odf_26300.htm

8. Classification criteria of Open Standards

The affirmation of the new entry of the 'open standard' opens up the framework of the standard category regarding the two macro-categories mentioned earlier. In order to better illustrate this expansion of the standard concept and related classification, we will quote directly the opinion of Alfonso Fuggetta, Italian professor and scholar on issues concerning technology and innovation.[29]

According to Fuggetta, a new classification based on the standard openness degree includes five levels:[30]

- **level 0**: undisclosed/proprietary;[31]
- **level 1**: disclosed. The standard is owned by a company and is made "available" in some form to other companies and users. The owner controls the evolution of the standard;
- **level 2**: concerted. There is a consultation, but the admission to the consultation process and the management of the process itself is controlled by the company or by the association of companies that emits the standard;
- **level 3**: open concerted. There is an open participation process through which the standard is defined and managed;
- **level 4**: open *de jure*. Standards are owned and managed by official international and national standard-setting organizations.

In turn, this classification leads to the following four kinds of standards:

- **proprietary standards**, further differentiated in non-disclosed and disclosed proprietary standards;
- **concerted standard**;
- **concerted open standard**;
- ***de jure* open standard**.

Prof. Fuggetta is careful in pointing out that only the last two categories can be rightfully considered "open standard", and that despite the lack of universal consensus on the interpretation of this term, a true open standard should also be royalty-free.[32]

29 See the research paper 'Open standard, Open Formats, and Open Source', co-auhored by Davide Cerri and available at http://www.davidecerri.org/sites/default/files/art-openness-jss07.pdf. The same ideas are also proposed in a post on Fuggetta's personal blog: http://www.alfonsofuggetta.org/?p=539.

30 Actually Fuggetta does not include the *level 0*, added here for clarity and completeness purposes.

31 This refers to a case when the standard specifications are not publicly available and the standard itself is being owned by an organization imposing its property rights.

32 Another interesting classification is presented by Dolmans, Marurits (2010) 'A Tale of Two Tragedies —A plea for open standards, and some comments on the RAND report', IFOSS L. Rev., 2(2), pp 115 —138 , DOI: 10.5033/ifosslr.v2i2.46

9. The web as an interoperable technology and the role of the W3C

Let's imagine for a moment to strip today's World Wide Web of its interoperability features. Probably the Web as we know it would cease to exist, or at least it will not be able to match the current evolution level. It is true that a general agreement on the *de jure* standard on the Web has been reached only in a relatively recent time — particularly with the broad diffusion of the standard developed by the World Wide Web Consortium (W3C). Nevertheless, since its inception, the whole Internet has taken off and grew exponentially thanks to widely shared protocols and standards. This trend enabled the penetration and worldwide success of the Internet in an unsurpassed way for any other technology model yet.

The Internet, and more specifically the Web, as a successful instance of an interoperable technology has received attention in many research and analysis. As an example of this literature, here would suffice to briefly quote from the document "The Internet Standards Process", drafted by Scott O. Bradner at Harvard University:

> *"The Internet, a loosely-organized international collaboration of autonomous, interconnected networks, supports host-to-host communication through voluntary adherence to open protocols and procedures defined by Internet Standards. There are also many isolated interconnected networks, which are not connected to the global Internet but use the Internet Standards."*[33]

The W3C is an international community where member organizations, a full-time staff and the public work together to develop Web standards. W3C's mission is "to lead the World Wide Web to its full potential by developing protocols and guidelines that ensure the long-term growth of the Web".[34] Founded in 1994 and still led by Sir Tim Berners-Lee, the WC3 comprises more than 350 members, including tech and telecom companies, non-profit organizations and research institutions, both private and public. The W3C official website lists in seven items[35] its main objectives and strategic principles:

- Universal access to web resources;[36]
- Research and development to build the so-called Semantic Web;[37]
- Promotion of a Web of Trust, an environment based on reciprocal collaboration, trust, privacy and responsibility;[38]

33 Bradner, S.O., 'The Internet Standards Process' (par. 1.1), available at: http://www.ietf.org/rfc/rfc2026.txt

34 http://www.w3.org/Consortium/mission

35 http://www.w3.org/Consortium/Points/

36 *The W3C defines the Web as the universe of network-accessible information (available through your computer, phone, television, or networked refrigerator...). Today this universe benefits society by enabling new forms of human communication and opportunities to share knowledge. One of W3C's primary goals is to make these benefits available to all people, whatever their hardware, software, network infrastructure, native language, culture, geographical location, or physical or mental ability. W3C's Internationalization Activity, Device Independence Activity, Voice Browser Activity, and Web Accessibility Initiative all illustrate our commitment to universal access;* (ibidem)

37 *People currently share their knowledge on the Web in language intended for other people. On the Semantic Web ("semantic" means "having to do with meaning"), we will be able to express ourselves in terms that our computers can interpret and exchange. By doing so, we will enable them to solve problems that we find tedious, to help us find quickly what we're looking for: medical information, a movie review, a book purchase order, etc. The W3C languages RDF, XML, XML Schema, and XML signatures are the building blocks of the Semantic Web;* (ibidem)

38 *The Web is a collaborative medium, not read-only like a magazine. In fact, the first Web browser was also an editor, though most people today think of browsing as primarily viewing, not interacting. To promote a more collaborative environment, we*

- Promotion of interoperability and open standards;[39]
- Fostering the Consortium evolution in accordance with the continuum of technology development;[40]
- Decentralizing the architecture and organization of the Web itself developing cool multimedia, that is, a Web more and more close to the user needs and able to provide a richer interaction also for entertainment purposes.[41]

10. The OASIS approach to the standardization activity

Launched in 1993, the non-profit consortium Organization for the Advancement of Structured Information Standards (better known by its acronym OASIS) is mostly focused on promoting research and formalization of open standards in the world of ICT. According to the organization website, its mission is to lead "development, convergence and adoption of open standards for the global Information Society".[42]

Founded under the name of "SGML Open", the consortium was intended as a community of vendors and users devoted to developing guidelines for interoperability among products that support the Standard Generalized Markup Language (SGML). However, in 1998, the organization changed its name to "OASIS Open" to reflect an expanded scope of technical work and the increasing attention reserved by the ICT sector to technologies based on Extensible Markup Language (XML) and open standards in a broader sense. Today, OASIS has more than 5,000 participants representing over 600 organizations and individual members in 100 countries, with headquarters in the USA and major operative offices in Europe and Asia. As highlighted in its website, the consortium structure features several interesting aspects that outline the basic philosophy behind its internal power balance and its actual decision-making procedures. The OASIS approach is particularly oriented toward transparency, democracy and openness. Quoting directly from its "About" web page:

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must build a "Web of Trust" that offers confidentiality, instills confidence, and makes it possible for people to take responsibility for (or be accountable for) what they publish on the Web. These goals drive much of W3C's work around XML signatures, annotation mechanisms, group authoring, versioning, etc.; (ibidem)

39 *Twenty years ago, people bought software that only worked with other software from the same vendor. Today, people have more freedom to choose, and they rightly expect software components to be interchangeable. They also expect to be able to view Web content with their preferred software (graphical desktop browser, speech synthesizer, braille display, car phone...). W3C, a vendor-neutral organization, promotes interoperability by designing and promoting open (non-proprietary) computer languages and protocols that avoid the market fragmentation of the past. This is achieved through industry consensus and encouraging an open forum for discussion;* (ibidem)

40 *W3C aims for technical excellence but is well aware that what we know and need today may be insufficient to solve tomorrow's problems. We therefore strive to build a Web that can easily evolve into an even better Web, without disrupting what already works. The principles of simplicity, modularity, compatibility, and extensibility guide all of our designs*; (ibidem)

41 *Who wouldn't like more interactivity and richer media on the Web, including resizable images, quality sound, video, 3D effects, and animation? W3C's consensus process does not limit content provider creativity or mean boring browsing. Through its membership, W3C listens to end-users and works toward providing a solid framework for the development of the Cooler Web through languages such as the Scalable Vector Graphics (SVG) language and the Synchronized Multimedia Integration Language (SMIL)*; (ibidem)

42 According to the presentation page at http://www.oasis-open.org/who: *OASIS is a not-for-profit consortium that drives the development, convergence and adoption of open standards for the global information society. The consortium produces more Web services standards than any other organization along with standards for security, e-business, and standardization efforts in the public sector and for application-specific markets*

> *"OASIS is distinguished by its transparent governance and operating procedures. Members themselves set the OASIS technical agenda, using a lightweight process expressly designed to promote industry consensus and unite disparate efforts. Completed work is ratified by open ballot. Governance is accountable and unrestricted. Officers of both the OASIS Board of Directors and Technical Advisory Board are chosen by democratic election to serve two-year terms. Consortium leadership is based on individual merit and is not tied to financial contribution, corporate standing, or special appointment."*

Another meaningful aspect of the consortium *modus operandi* concerns the management of industrial property rights, an issue dealt with great attention and innovative strategy. In this regard, here is an answer to a specific question included in the FAQ section of its website:

> *"Most OASIS specifications are provided to the public on a royalty-free basis. The OASIS IPR Policy states that contributors of externally developed technical work must identify all IP claims (patents, trademarks, etc.) associated with that work, and must agree to grant use of this technology under reasonable and non-discriminatory (RAND) or royalty-free (RF) terms for purposes of implementing the OASIS specification."*[43]

Finally, OASIS embraces a pioneer approach to the whole standardization issue, encouraging a propagation toward positive mechanisms and trends. Indeed, it is not by chance that one of the most renowned standards — the *Open Document Format*, effectively recognized as an open standard — has undergone a standardization process carried out by the OASIS consortium.

Conclusion

This general overview on the issue of interoperability (and its relationship with standardization) highlights the importance of taking into consideration its many aspects in order to develop truly open and innovative technologies.

In fact, any FLOSS advancement within an eco-system polluted by market strategies still rigidly imposed by dominant players or *de facto* monopolies threatens to undermine much of the effort currently underway and to leave everything to a very abstract level.

On the other hand, the application of open standards in a broader context also means to build a transparent and fair foundation toward an effective and distributed technological innovation.

43 From the OASIS 'Frequently Asked Questions' page at http://www.oasis-open.org/who/faqs.php.
For further details about the IPR policies promoted by OASIS, see this specific section of their website: http://www.oasis-open.org/who/intellectualproperty.shtml

About the author

Simone Aliprandi *is an Italian attorney-at-law and researcher who is constantly engaged in writing, teaching and consulting in the field of copyright and ICT law. He has an additional degree in Public Administration Science and he is finishing a Ph.D. program in Information Society at the Bicocca University of Milan. He founded and still coordinates the Copyleft-Italia.it project and has published several books devoted to openculture and copyleft. He also collaborates as a legal consultant with Array (http://www.arraylaw.eu). More information about his activities: http://www.aliprandi.org.*

Compatibility Of The Licensing Of Embedded Patents With Open Source Licensing Terms

Iain G. Mitchell QC,[a] *Stephen Mason* [b]

(a) Advocate ; (b) Barrister

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Abstract

For many years software patenting has been an area of considerable contention, particularly in relation to whether it can, or should, be able to co-exist with Free and Open Source licenses. This issue has gained substantial additional impetus with the publication by the European Commission of the European Interoperability Framework, version 2, which, amongst other objectives, seeks to promote a level playing field for Free and Open Source Software in European public services. However, interoperability will often require the software to interact with a Standard which contains unavoidable patents.

The issues raised by this were of concern to a client of Andrew Katz[1], When the client sought the Opinion of Counsel on the matter, Andrew Katz prepared a brief setting out the client's concerns and, by way of illustration, providing the text of a cross-section of commonly-used Free and Open source Software Licences.

The Opinion was issued jointly by Iain G. Mitchell QC and Stephen Mason, Barrister.

The Client has now generously given permission for the Opinion to be published provided that the client's identity is not disclosed. What follows is a suitably edited version of that Opinion, which has been anonymised to respect the wishes of the client and which has been slightly shortened to allow for publication in the Review.[2]

Keywords

Law; information technology; Free and Open Source Software; Open Standards; European Interoperability Framework v.2

1 Andrew Katz, Solicitor, of Moorcrofts, Solicitors, James House, Mere Park, Dedmere Road, Marlow, Bucks SL7 1FJ http://www.moorcrofts.com

2 The full (though anonymised) texts of the Brief prepared by Andrew Katz and of the Opinion are available at http://www.ifosslr.org/ifosslr/article/view/57/7 and http://www.ifosslr.org/ifosslr/article/view/57/8 respectively.

1. The Context:

A form of lock-in may arise in the field of interoperability – the capacity of programs and of systems to operate with each other. For example, the keeping confidential of the Source Code relating to a platform, such as Windows, may be used to restrict the ability of other programs (whether themselves proprietary or Open Source) to be developed so as to operate on that platform, and, especially when combined with other practices such as bundling, can amount to abuse of a dominant position, restricting competition. (See, for example, *Microsoft Corp. v Commission case T-201/4* at §§1088 – 1090 of the Judgement dated 17th September, 2007).

Though most obvious in relation to interoperability between programs and platforms, the problem potentially exists to a greater or lesser degree in any situation involving interoperability of programs or systems, and it can readily been seen that a limitation on interoperability can have knock-on effects not only in the realm of competition policy, but also at a functional level where there may be a variety of different systems in different member states which are required to be able to work together.

In order to minimise such problems, at any rate at the level of the EU institutions and the member state governments, there was developed the original European Interoperability Framework (*EIF1*), published in 2004, which is more fully described in our Instructions, and to which we refer.

One particular problem recognised by EIF1 is the presence of unavoidable Patents in Open Standards (and, whilst noting the provisions of Directive 98/3, we give "standards" the same extended meaning in the present Opinion as is given in our instructions). This was sought to be addressed by the grammatically inelegant, and almost impenetrable formulation:

> *"The intellectual property – i.e. patents possibly present – of (parts of) the standard is made irrevocably available on a royalty free basis."*

Although the wording is obscure, this could be interpreted to mean that the minimum characteristics required for an Open Standard included that where there were unavoidable patents, licences to permit the programs or systems to utilise the standard should be made available on what is described in the Instructions (at paragraph 6) as "RAND-Z" terms.

This raises two problems in relation to Open Source software. The first, and obvious, problem is the compatibility of Open Source Licensing terms with any standard containing unavoidable patents and, broadly, upon that we are asked to advise. However, there may also be a problem which is inherent in the understanding of RAND terms, and to that we shall also direct our attention.

2. From EIF1 to EIF2:

The Instructions were prepared whilst discussions were still in train for the promulgation by the Commission of a new Interoperability Framework, which we refer to as EIF2.

EIF2 was published on 16th December, 2010, as Annex II to Commission Communication *Towards Interoperability for European Public Services* [COM (2010) 744 final]. So far as material to the

present issue, paragraph 5.2.1 of the Communication requires, *inter alia*:

> *"Intellectual property rights related to the specification are licensed on FRAND terms or on a royalty-free basis in a way that allows implementation in both proprietary and open source software."*

"FRAND" is defined in footnote 19 as "Fair, reasonable and non-discriminatory"; and this particular provision is justified in footnote 20 thus:

> *"This fosters competition since providers working under various business models may compete to deliver products, technologies and services based on such specification."*

The intent which lies behind the provision referred to in paragraph 5.2.1 could not be more clear: interoperability requires a level playing field between Proprietary and Open Source Software. What, however, may be in issue is the extent to which this intention has been translated into the working of the real world. It is to that question that the present Opinion is directed.

3. The Legal Standing of EIF2:

Whereas there was a sense that EIF1 was developed from the bottom up by individuals and bodies and at least elements from within the Commission, there is more of a sense of EIF2 being directed from the top. This reflects an acknowledgement by the Commission of the critical importance to the Union of efficient interoperable systems in the public sector across Europe, and may perhaps be seen as a winning of hearts and minds by the pioneers who developed EIF1.

This becomes clear in the opening paragraph of Commission Memo/10/689 of 16th December, 2010:

> *The need for effective interoperability is at the centre of the Digital Agenda for Europe (see IP/10/581, MEMO/10/199 and MEMO/10/200), one of the flagship initiatives in the Europe 2020 Strategy. In the case of public administrations, effective interoperability is vital to ensuring that they can provide efficient, effective cross-border eGovernment services, as reflected in the eGovernment Action Plan just adopted by the Commission (see IP/10/1718). As part of the Digital Agenda and the eGovernment Action Plan, the Commission committed itself to adopt in 2010 a Communication that introduces the European Interoperability Strategy (EIS) and the European Interoperability Framework (EIF), two key documents to focus our efforts and work via a common approach to achieve better interoperability for European public services. They complement the Digital Agenda for Europe in establishing a common approach for Member States' public administrations, to help citizens and businesses to profit fully from the single market.*

However, the European Union has no treaty competencies in the area of the organisation and delivery of public services (though the *procurement* of such services may engage Treaty and derived principles). Consequently, it is not possible for the EU to legislate (for example by way of Directive or Regulation) in the area of interoperability of systems for the provision of public services, and instead the Commission was required to promulgate the Strategy and Framework documents by way of a Commission Communication.

It is easy to focus on what a Communication is not – it is not law; it is not binding on anyone; it cannot be legally enforced; it does not, in its terms, extend beyond the public into the private law realm; it is not a formal standard. However, this is to underplay its moral authority – it is a communication proceeding from the Commission and has the full weight of the Commission behind it; it would be highly persuasive in the event that it comes to be considered by the courts, for example in a public procurement exercise and, as is apparent from the Memo, it is the result of intensive consultation amongst all of the parties at European and member state level. In short, it has considerable intellectual and moral authority, even if it lacks direct legal enforceability.

In these circumstances, though there is no legal imperative upon Member States to implement EIF2 so as to provide compatibility at national level within those States, this is the clear intention as confirmed in the Communication:

"Member States should.....align their national interoperability frameworks with the EIF".

This was endorsed in the Malmo Ministerial Declaration of 18th November 2009, and in the Communication accompanying the eGovernment Action Plan 2011-2015 of December 2010, when this action was formally targeted for achievement by 2013. It may also be hoped that there will come to be some "leakage" from the public to the private sphere. In short, EIF2 is immensely more authoritative than was EIF1.

4. Do existing Open Source Licences allow EIF2 to be given effect so as to allow Licensees to use the Licensed Software where unavoidable Patents are present, but Licences are available on RAND Terms?

(a) Context – A health warning:

Typically, Open Source Licences contain no choice of law provisions and, if and when a dispute arises, will fall to be interpreted by the court before which the litigation proceeds.

Given the international nature of most Open Source software, with, it may be, contributions from developers in multiple jurisdictions, and the possibility that the parties may each, themselves, be domiciled in different jurisdictions, ascertainment of the applicable law may be no easy question in any given case, quite apart from then applying that law, which may not be the same as the law of the forum.

Usually, and in the absence of the matter being focused by the parties, the court will either apply the domestic law of the forum, or if it is contended that the proper law of the contract is (say) the law of California, the court will apply the presumption that the law of the foreign state is the same as the domestic law, unless the parties aver (and, as a matter of fact, not law) prove otherwise.

To some extent the problem is masked since it is, of course, the words of the licence which govern its terms and, simplistically, one might think that the words would be interpreted in the same way, whatever the governing law, but this should by no means be assumed. Furthermore, even if the words

themselves receive a uniform interpretation, it does not follow that they will receive a uniform effect. For example, a common feature of Open Source Licences is a term purporting to exclude liability. It is not to be ruled out that, in a particular licence, technical words might be used having a different meaning in different jurisdictions, but, even assuming that it is clear what the words mean, the court might refuse to give effect to the provision excluding liability, or treat it as *pro non scripto* or even, in an extreme case, decline to enforce the entire licence – it all may depend on what the domestic law provides in respect of the validity and/or enforceability of clauses excluding liability.

It is understood, however, that the *omission of a choice* of law clause by the drafters of the GPL was deliberate.

Although a detailed consideration of this topic lies outside the scope of the present Opinion, it should be recognised that what we say about the meaning of the various licences and how they relate to the EIF2 is always subject to the *caveat* which we have just expressed.

(b) Interaction with Patent Licences:

Where there is an unavoidable patent embodied in a standard, then, if a software developer writes software to operate with the standard, that will give rise to an infringement of the patent, unless the patent owner grants permission for the patent to be used, which is to say, licences the patent to the developer.

How that is sought to be achieved we discuss more fully below when we come to discuss RAND licensing of patents, but for the present, we observe that, typically, the patent owner will licence the patent to an individual licensee who will not be allowed to sublicense or assign the benefit of the licence to another person. This is of some importance given the licensing models employed in Open Source software: Developer A creates the software, and owns the copyright in it; since it interacts with an unavoidable patent, he obtains a RAND licence for that patent from X, the patent owner. A then licenses the copyright in his program to developer B under an Open Source Licence, but will normally not be able to assign the licensee's rights under the patent Licence. Accordingly, developer B will require to obtain from X a separate patent licence. (Whether this is indeed the result will, of course, depend upon whether the original patent licence in favour of A is, in its terms, assignable).

In these circumstances, it is likely that licensing of software under Open Source Licences will not carry transferability of patent licences. Were it not for the analysis set out below of the particular terms of certain restrictive Open Source licences, this would have been little more than merely inconvenient, assuming (as EIF2 mandates) that patent licences would have been available to all comers on RAND terms.

(c) Permissive Licences:

As explained in the Brief, permissive licences are seldom concerned to do other than ensure that source code and, consequently, the corresponding object code may be used with minimal restrictions. Commonly, those restrictions include (but seldom extend beyond) the following requirements:

1. Whatever the form of licence, the user is required to display notices indicating

ownership of the intellectual property rights.

2. An assertion is made that the software is provided without warranty as to fitness for purpose and limitation of liability.

(Where what we have termed a "permissive licence" contains terms specifically dealing with patent issues, we have adopted the terminology "hybrid licence", and comment on these in the following section).

In these circumstances, one would be surprised to find any impediment to the use of Open Source software even in the presence of unavoidable patents in the relevant standard. Of course, each such Licence will fall to be interpreted according to its terms, but such licences as have been exhibited to us present no apparent problem. In particular:

(i) MIT (X11) License:

This contains no provision inimical to the use of software licensed thereunder in conjunction with an unavoidable patent (whether or not RAND Licensed).

(ii) BSD License:

This contains no provision inimical to the use of software licensed thereunder in conjunction with an unavoidable patent (whether or not RAND Licensed).

(iii) Perl Artistic License 1:

This contains no provision inimical to the use of software licensed thereunder in conjunction with an unavoidable patent (whether or not RAND Licensed).

(d) Hybrid Licences:

Certain of the permissive licences we have seen do include terms which touch on patents. In this regard, we refer to the following:

(i) Perl Artistic License 2.0:

Clause (13) is what amounts, in substance, to a licence by the granter to the licensee of any patents to which the granter has right, coupled with a termination of the licence in the event that the licensee institutes proceedings for patent infringement.

However, it cannot extend beyond "patent claims *licensable by the Copyright Holder* that are necessarily infringed by the package". In view of the explanation, which we give at part 4(1)(b) of the present Opinion, this would not generally include unavoidable patents licensed *to* the granter by the patent owner. It is more properly directed at a situation in which the granter might have incorporated patented material in his own work, and it merely provides that if the grantee raises any litigation in which he (the licensee) claims that the package (the program) constitutes patent infringement, the

licence in favour of the licensee is terminated. Typically this will affect (but is not limited to) an attempt by the licensee to bring about downstream enforcement of patents by the licensee.

Thus, so far as is material to the present discussion, this licence is seen to be a permissive licence akin to the other permissive licences discussed above.

(ii) Apache Public License:

Clause 3 is of similar effect to clause 13 in the Perl 2 License. The Apache Public License is, in the same way, a permissive licence.

(e) Restrictive Licences:

Restrictive Licences often come with an agenda attached. In particular, their drafters are frequently opposed to software patents, or, at any rate, see the presence of software patents as being inimical to Open Source software, perhaps leading to proprietarisation by the back door. Accordingly, they frequently seek to use their licensing terms in order to prevent this.

This approach is explained in the preamble to the GPL 2.0:

> *"Any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not at all."*

Taking this policy statement at face value, it contains a major and a minor premise which are not necessarily consistent with each other. In that it is the objective of FRAND Licenses to make a patent available for the free use (and, in the case of FRAND-Z Licences, free in both senses of the word) of each licensee and if it be that case that a Patent holder could not refuse to make a patent licence available to an applicant, then that would have achieved the result of making the patent freely available for everyone's use. However, the preceding sentence appears to proceed on the basis that any requirement for an individual to obtain an individual patent licence is inimical to free software.

It might be that we can go some way to analysing that tension if we consider the fundamental architecture of the open source software licensing model, and in particular the GPL family of licences.

(i) GNU General Public Licence 2.0:

The architecture of the GPL 2 is typical of restrictive Open Source Licences. It includes the following elements:

1. It applies to "any program or other work" which has been distributed under the terms of the GPL2 licence (clause 0);
2. It is clear from clauses 1 and 2 that the licence is a copyright licence;

3. The user may copy and distribute *verbatim* copies of the Program's source code as they receive it, in any medium (clause 1);
4. The user may modify the copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications, subject to the requirement that the person notifies subsequent users of the modified program, and enables the next users to license the program to third parties at no cost (clause 2);
5. There is no requirement to sign the licence, but the user is deemed to accept the terms of the licence if he modifies or distributes the program (clause 5);
6. Clause 6 is fundamental to the architecture of GPL licensing. It provides:

> *"Each time you redistribute the program (or any work based on the program), the recipient automatically receives a license from the original licensor to copy or modify the program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein...."*

The model is that when developer A transmits the modified work to developer B, he is neither sub-licensing nor assigning the licence granted to him by the original developer of the program; rather, there is said to be created a fresh grant from the original developer to developer B, with a separate grant of a licence by developer A to developer B of his works of modification. There are stray references in GPL2 to sub-licensing, but GPL3 (which we consider more fully below) is more explicit: the final sentence of clause 2 states: "Sublicensing is not allowed; section 10 makes it unnecessary". Section 10 provides:

> *"Each time you convey a covered work, the recipient automatically receives a license from the original licensors to run, modify and propagate that work, subject to this License".*

It will also follow that there will be a similar "automatic licensing" of the modifying work by Developer B.

Under the FRAND Licensing model, it will usually be the case that although each licensee will be able to obtain his own individual licence from the patent owner, the process does not have the same automaticity in respect of downstream users as is involved in the GPL Licensing model.

(As we discuss later, this may not always be the case, but for present purposes we assume it to be so);

7. The licence purports to prevent the distribution of the program by the licensee where, by reason of a court judgement or for any other reason the licensee's distribution is subjected to conditions which would contradict the conditions of the licence (clause 7);
8. Where distribution or use of the program is restricted because of patents or copyrighted interfaces, the original owner of the intellectual property who decides to put his property under the terms of the licence may place limitations on the geographical distribution of the program (clause 8);

There is no clause relating to governing law and jurisdiction, and many of the words and phrases may

be construed differently in different jurisdictions.

Against the background of the drafter's assumption as to the two Licensing models (Open Source and FRAND), the crucial provision is seen to be condition (b) of clause 2:

> *"You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this license."*

This interacts with clause 7 to prevent a person from distributing the program where distribution cannot be achieved in accordance with this condition.

At first sight, it might be thought to be arguable that all this means is that the copyrighted work should be (copyright) licensed as a whole to all third parties and without charge. This view is arguably reinforced by the terms of clause 0, which provide:

> *"This License applies to any program or other work..... The 'Program', below, refers to any such program or work, and a 'work based on the program' means either the program or any derivative work under copyright law..."*

If clause 2(b) were to be interpreted as solely relating to the distribution of a work free of copyright royalty then condition 2(b) would be satisfied, even although there might be a need to pay a royalty to the holder of a patent, and even although the granter of the GPL2 licence of the copyright work might not be in a position to grant to the licensee a licence of any unavoidable patent.

However, we are not persuaded that clause 2(b) has only this limited effect. The problem lies with the wording of clause 7.

There is clearly no question that clause 7 effectively prevents distribution of the work where conditions are imposed on the licensee preventing him licensing the copyright in the work without charge. For example, say that the work contains some lines of proprietary code, the licensee is sued by the proprietary copyright holder, and the action is settled by means of imposing on the licensee an obligation to extract a royalty and remit it to the proprietary copyright holder. In that situation, clause 7 would clearly be effective. However, the example contained within clause 7 is wider than that:

> *"For example, if a patent license would not permit royalty free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way that you could satisfy both it and this License would be to refrain entirely from distribution of the program."*

On the face of it, this appears to prevent distribution of the program where a patent royalty is payable. How to resolve this apparent conflict?

One way is to say that the example is only an example and does not purport to be an operative provision: it is possible that it is merely a misunderstanding of the effect of the operative provision. This is not an entirely happy analysis, as the court will endeavour to interpret the Licence as a whole. A court is unlikely to be impressed by the circular argument that the example is indeed consistent

with clause 2(b) as the example refers only to "royalty free distribution" and, in the context of the entire licence, this means free of copyright royalties, not free of patent royalties. The problem is that for the example to have any meaning, it would be necessary to imagine a situation in which a patent might prevent the copyright in a work being licensed without payment of a royalty for the licensing of the copyright, and we confess that this is difficult to envisage.

More tellingly, if we recollect the policy statement which appears in the preamble, read along with the exposition of the fundamental architecture set out in clause 6, it becomes clear that the reference in clause 0 to "copyright law" does not define the limit of applicability of the GPL 2 Licence, but merely (as a matter of grammatical construction) relates only to a derivative work – i.e. to be a "derivative work" for the purposes of the licence, the work should also be a "derivative work" for the purposes of copyright law. This is reinforced by the reference in clause 2(b) to "licensed *as a whole"* [emphasis added]. Interpreted in that manner, the apparent conflict between clause 2(b) and the example disappears: the whole Licence terms do make internal sense – if the granter of the GPL licence cannot provide the same automatic downstream cascade of patent rights as he can in respect of copyright, he cannot grant a GPL copyright licence. Because this would permit a court to construe the licence as a whole and without internal conflicts, we suspect that it would be the interpretation which would be likely to commend itself to a court.

Consequently, the likelihood is that if a third party were to require to obtain from the Patent Holder of an unavoidable patent a licence of that patent on terms that were other than royalty-free, then clause 7 would be effective and the licensee under the GPL 2 licence would be prevented from distributing the work at all.

Therefore, it is probable that the GPL2 Licence would not be capable of allowing programs licensed thereunder to interoperate with EIF2, where there are unavoidable patents licensed on FRAND royalty-payable terms. Even in relation to RAND-Z licences, there may be potential problems. First, although, if no royalty is payable for the patent licence, there will not be an incompatibility with condition 2(b) of GPL2 in relation to the use of the software to implement the standard, the RAND-Z licence may not permit the licensee to develop a derivative work which, though still infringing the patent (absent a licence), did not do so for the purpose of implementing the standard. In other words, the licensee under the GPL licence may be unable to licence the work "as a whole at no charge to *all* third parties," in particular, those third parties who might seek to develop the software for a reason other than interacting with the standard.

A further issue in relation to RAND-Z licences is that, under clause 2(b) what should be licensed at no charge to all third parties is the work "as a whole." It is at least arguable that clause 2(b) is not just about charging (though that is the thrust of the example), but sets out a test which is cumulative. There are 3 requirements, each of equal importance: first, the work as a whole should be licensed; second, the licence of the work as a whole should be without charge, and, third, it should be so licensed to all third parties. If a court were to regard the work "as a whole" as including that part of the work as would (absent a patent licence) infringe an unavoidable patent, then the licence of the work as a whole should include a patent licence in respect of that unavoidable patent.

The logic of the preamble read along with clause 6 would favour such an interpretation, and, in these circumstances there is a strong chance that a court, interpreting the GPL License purposively would

regard even FRAND-Z Licences as being incompatible with the GPL2.

There is an additional quibble that clause 2 (b) commences "*you* must cause any work... to be licensed as a whole" [emphasis added]. If licensing of unavoidable patents on FRAND-Z terms were otherwise compatible with GPL2 (as to which, see the previous paragraph) then such compatibility would arise inherently in the system rather than be caused by the licensee. However (and in the event that FRAND-Z licensing is otherwise compatible), we have no doubt that the court would give a purposive interpretation to this clause and, providing the result were achieved, would treat it as irrelevant how it came to be achieved.

Further uncertainty arises from the possibility that GPL 2 may be interpreted differently in different jurisdictions. For example, some jurisdictions (including England & Wales and Scotland) will seek to apply the *contra proferentem* rule and may reach a different interpretation from jurisdictions where such a rule does not apply; or in some jurisdictions, it is competent for the court to hear evidence in order to ascertain the context in which the licence falls to be interpreted (See *Profile Software Ltd v. Becogent Ltd* [2005] ScotCS CSOH 28 (16 February 2005)). In relation to the incompatibility of GPL2 with FRAND royalty payable licences, we do not think that such potentially differing approaches are likely to make much, if any difference; but in relation to the compatibility of FRAND-Z licences and the GPL2 it might be crucial, since a purposive interpretation may hang on questions of context and *proferens*.

In short, even if the licensing of a patent embedded in a standard were to be on royalty free FRAND terms, it is arguable that clause 7 would still prevent distribution of the work as the conditions imposed in that clause are apparently cumulative and not alternative.

(ii) GNU Lesser General Public License 2.1:

This licence applies to "the Library" which is defined as "a collection of software functions and/or data prepared so as to be conveniently linked with application programs, and which has been distributed under the terms of the GPL2 licence" (clause 0).

Although the wording differs in detail in several places and the paragraph numbering is different, the clauses with which the present Opinion is concerned are in substantially the same terms as the GPL 2 Licence and would, in our view, lead to the same outcome.

(iii) GNU General Public License 3:

The GPL 3 is much more detailed in its terms, though, as noted in connection with the GPL2, there is no clause relating to governing law and jurisdiction, and we should therefore once more warn that it is possible that some of the words and phrases may be construed differently in different jurisdictions.

Subject to that *caveat*, it is clear from the Introduction what the intent of the author is. The last paragraph of the Introduction states:

> *"Finally, every program is threatened constantly by software patents. States should not*

> *allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free."*

We are struck not by the similarity of this statement to the equivalent statement in GPL2, but by the difference between them. The two statements are the same except for the last sentence, which, in the GPL2 is as follows:

> *"To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not at all."*

In GPL3 it states:

> *"To prevent this, the GPL assures that patents cannot be used to render the program non-free."*

This may suggest a change of emphasis between GPL2 and GPL3, which, it may be, is reflected in the clause of GPL3 specifically applying to patents, clause 11, which provides (*inter alia*):

> *"If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this license, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be available, or (2) deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License to extend the patent license to downstream recipients."*

At first sight, this provision, in spite of the reference to "knowingly relying on a patent license" appears to relate to ensuring that the *Source Code* is kept open and available to downstream recipients, and it may be possible to hypothesise a situation in which the source code is made freely available by the owner of the work, who derives his proprietary protection from the Patent only, with the result that this part of clause 11 would not be engaged as it is concerned with source code only. However, there is an argument that clause 11 is wider in its scope and does engage with licenses of embedded patents. This issue is thrown into relief when we come below to consider typical FRAND Licences.

The Licence will fall to be interpreted as a whole. The following clause (clause 12), widely known as the "liberty or death" clause, is headed "No surrender of others' freedom" and it makes it clear that if any conditions are imposed on the licensee which make it impossible for him to convey a covered work without satisfying his obligations under the GPL3, then he is prevented from conveying the work at all.

Furthermore, footnote 89 of the *GPLv3 Second Discussion Draft Rationale* document states:

> *"After gathering opinion on the second paragraph of section 11 during the discussion process, we decided to offer a specific form of shielding that would satisfy the objectives of*

> *the paragraph. A distributor of a covered work under benefit of a patent license can ensure that the Corresponding Source is made publicly available, free of charge, for all to access and copy, such as by arranging for the Corresponding Source to be available on a public network server. We keep the more general shielding requirement as an option because we do not wish to insist upon public distribution of source code. Distributors complying with this section may prefer to provide other means of shielding their downstream recipients."*

Although the precise drafting of clause 11 was altered in the final version, the *GPLv3 Third Discussion Draft Rationale* (Free Software Foundation, 2007) states, at §3.4:

> *"Previous drafts of GPLv3 included a "shielding" provision in section 11, which we have further refined in Draft 3; it is now found in the third paragraph of section 11."*

This explanation appears to reflect an implicit assumption that, by making the source code generally available, so also is the patent licence made generally available. As is apparent from our explanation of the terms of the GPL2, such an assumption is not generally warranted, as, in the usual case of a FRAND licence, there will not be a general downstream transmission of the benefit of the licence. It may, however, be that this assumption has been reflected in the wording of clauses 11 and 12 as finally published.

It is, of course, the wording of the licence itself to which a court in England or Scotland will first address itself. If, as a matter of grammatical construction, the wording is clear, then the court will not have regard to any extrinsic evidence (including the paragraph headings in the Licence and any drafting documents, such as the published rationale documents). The key question is, thus, what do the words themselves say?

It will be noted that the requirement of the part of clause 11 to which we refer is threefold: first, that the Corresponding Source should be available on a publicly available server or other readily accessible means, second, that it should be available to copy free of charge, and, third, that it should be made available "under the terms of *this* licence" [emphasis added]. If not so available, the Licensee has to arrange to extend the patent licence to downstream recipients, but this must be "in a manner consistent with the requirements of this License" (notably, free of charge), or else the Licensee has to deprive himself of the benefit of the patent licence for the work – in other words not to distribute it (since to do so without benefit of the patent licence would not be possible without infringing the patent).

At first blush, therefore, if the source code is available to be copied by anyone free of charge and that copying of the source code is under the terms of the GPL3 licence, then the conditions of clause 11 are satisfied. That would be so, even though there might be a requirement for a third party downstream to obtain a Patent Licence in respect of an embedded patent. This interpretation (which is actually what the words say) would plainly not prevent the distribution of the software even where a patent licence might be required (at any rate save in the extremely rare case where the Patent itself contains lines of code which are transcribed into the work licensed under the GPL3).

In response to this, it might be pointed out that clause 12 contains a prohibition on distributing the work where the distributor cannot satisfy his "obligations under the licence". It would then be

suggested that to distribute the work where the transferee would require to obtain a FRAND licence would be a "surrender of others' freedom" and so, not consistent with the obligations under the licence. That interpretation (as a matter of strict construction) is not tenable. The heading of clause 12 (as we have pointed out) is not an operative provision of the licence. Clause 11 is an operative provision. Thus (with a neat circularity) distribution in accordance with clause 11 is not distribution in breach of the licence terms, so there is no breach of the requirement of clause 12.

We have little doubt that this is not what the drafters of the GPL3 meant, but it is what they said, and a document is interpreted according to what it says, not what its drafters meant.

Of course, the anomaly arises by reason of the implicit, but unwarranted assumption, referred to above, that publication of the source code so as to make it generally available also serves to make the patent licence generally available. If that were the case, the anomaly disappears. By making the source code available in terms of clause 11, so, too is the patent licence made available. Thus the patent licence would have been made available under clause 11 and (in terns of clause 12) there would have been a distribution under the terms of the GPL3 Licence, which, neatly would not have involved the surrender of the freedom of others.

The issue, acutely, becomes whether a court would consider that there was such ambiguity in the terms of the licence as to require it to have regard to extrinsic evidence. If there were such ambiguity, the extrinsic material would support an intention to prevent distribution where there are unavoidable patents licensed on FRAND terms; but if no regard is had to the extrinsic evidence, the words of clause 11 would have the opposite effect.

Even if clause 11 is interpreted strictly, there are still issues which may arise in relation to whether the making of the source code available on the terms stipulated in that clause would always permit the distribution of software where there is an embedded patent. A later sub-clause of clause 11 defines a "discriminatory" patent licence as one which (in effect) frustrates the exercise of any rights which are granted under the GPL3. However, we note that this sub-clause does not in terms prohibit the granting of discriminatory licences. What it does do is to forbid the licensee from "conveying" a work covered by the GPL3 to another where: first, the Licensee pays a royalty related to the extent of the licensee's conveying of the work; second, the third party to whom that royalty is paid is in the business of distributing software, and, third the persons who are downstream receive a discriminatory patent licence. It is easy to figure that any such licence as would be granted by the patent holder runs a risk of being regarded as "discriminatory" as specially defined in the GPL3 – for example, if the downstream recipient had to pay a further royalty, or if there was (as there almost certainly would be) imposed a restriction on transmissibility further downstream. There is a saving for such agreements made prior to 28th March, 2007.

It may be that the terms of this sub-clause should be seen in the light of the announcement made by Microsoft and Novell in November 2006 of a broad collaboration between them on Linux interoperability and support, and whatever the compatibility of elements of that collaboration and the terms of the GPL2, the sub-clause is making clear that under the GPL3, from the date that it was promulgated, it would not be permissible in certain circumstances. This is achieved by defining the circumstances in which such a royalty would be permissible. Thus, in terms of the sub-clause, one might, for example, have a royalty (payable even to Microsoft) which is not related to the activity of

conveying the work, or one might have a royalty related to the activity of conveying, provided it were not to a third party in the business of distributing software, or, indeed, one might have an arrangement which offended against all three of the principles, so long as it were made prior to 28th March, 2007.

It may be that a further impediment to distribution where there is an unavoidable patent could arise in another way as a result of the application clause 12, which, as noted above, makes it clear that if any conditions are imposed on the licensee which make it impossible for him to convey a covered work without satisfying his obligations under the GPL3, then he is prevented from conveying the work at all.

So, what are the other obligations under the GPL3 which might be rendered impossible by the existence of a FRAND patent Licensing regime?

Clause 5 (c) provides:

> *"You must license the entire work, as a whole, under this license to anyone who comes into possession of a copy."*

This echoes the wording of clause 2(b) of GPL2:

> *"You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this license."*

As with the GPL2, clause 5(c) of GPL3 requires the work to be licensed: first, *"as a whole";* second "under this license" and, third, it should be licensed to "anyone who comes into possession of a copy", (which we take to be merely a clearer exposition of "all third parties" in GPL2). The only material difference is the omission of "at no charge".

It appears to us that the same comments that we made in relation to the proper interpretation of clause 2(b) of GPL2 apply *mutatis mutandis* to clause 5(c) of GPL3. Accordingly, notwithstanding the specific provisions directed at patent licenses, a substantial problem may arise from the provisions of clause 12 read along with clause 5(c): the fundamentally different architecture of downstream licensing under GPL3 is likely to be regarded as incompatible with the need for the individual direct licences which require to be granted under FRAND Licences.

In conclusion, therefore, although a literal reading of clause 11 of the GPL3, even read in conjunction with clause 12, would appear to permit transmission of a covered work where is a requirement upon a third party to obtain a patent licence, such a reading would be controversial. If challenged in court, there is some risk that the court may have regard to extrinsic evidence to interpret clauses 11 and 12 (and the risk may vary in different jurisdictions, depending on the domestic law as to the interpretation of documents) and, if the court did have regard to such evidence, there would be a high risk that the court would interpret the licence provisions so as to prevent transmission in the face of the need to obtain a patent licence. Furthermore, even on a literal reading of clause 11, problems arise in relation to compatibility with clause 5(c). This may be fatal to allowing transmission where a patent licence was required, but, even if not itself fatal, would certainly provide a basis for finding

that there was ambiguity as to the construction of the GPL3 as a whole, thus opening the door to extrinsic evidence, with the effect referred to above.

In short, it would not be safe to rely upon the GPL3 as being consistent with the FRAND licensing of embedded patents.

(iv) GNU Lesser General Public License, Version 3.

This licence is a variant of the GPL3. In form, it consists of certain listed modifications and variations to the GPL3. None of the special terms of the GNU Lesser General Public License would appear to affect the provisions upon which we comment in the previous section of this Opinion and, accordingly, our view remains as expressed in respect of the GPL3.

(v) European Union Public Licence v 1.1

A substantial problem with the GPL is the mutual incompatibility of copyright licensing under the GPL and FRAND licensing of patents, which incompatibility is brought into play by the clauses in the GPL family of licences which effectively require that the patent licensing architecture has to conform to the GPL architecture.

No such problem would exist in the absence of such clauses (even though a fundamentally different architecture of patent and copyright licensing still existed).

This is illustrated by the EUPL, and in particular a sub-clause of clause 5 (called the "copyleft clause") which makes no such requirement in relation to the licensing of patents. Looking more closely at the EUPL, one sees that by the final provision of clause 2 of this licence, "the Licensor grants to the Licensee royalty-free, non-exclusive usage rights to any patents held by the Licensor, to the extent necessary to make use of the rights granted on the Work under this Licence".

As will become apparent, the typical architecture of a FRAND Licence of an unavoidable Patent will prevent the Licensor of the program (who is also a Licensee of the patent) from sub-licensing or assigning the benefit of his patent licence, but this raises no issue with respect to interoperability since, of course, the scope of clause 2 extends only as far as relating to patents of which the Licensor (under the EUPL) is the owner of the patent. Therefore, it will clearly be for the Licensee of the program to obtain his own FRAND Licence of the unavoidable patent from the owner of that unavoidable patent.

Slightly more problematic is clause 3 which in certain circumstances obliges the Licensor to make available either the Source Code or a repository where it is "easily and freely accessible". Where an issue may arise is, in those extremely rare cases where the unavoidable patent contains actual source code which belongs to the Patent Holder, and where the patent holder has granted only a limited right to access or distribute that source code. *Quaere* whether that source code is "easily and freely accessible" to a licensee under EUPL if, in order to be able to access and distribute it, the Licensee requires to obtain his own FRAND Licence from the Patent owner. We have discussed this issue more fully above in connection with the GPL licences where the problem arises particularly acutely, but for the purposes of the present discussion, if the Licensee has a right to access to the source code

entailed in the patent on FRAND terms, then, on balance we are satisfied that this would meet the EUPL requirement for that source code to be "easily and freely accessible". We do not consider that it makes any material difference whether the FRAND Licence is FRAND-Z or royalty payable, as "freely" would be fall to be construed *eiusdem generis* with "easily", as meaning without undue restriction, rather than free of charge.

On balance, therefore, it is unlikely that there is any conflict between FRAND licensing of unavoidable patents and the terms of the EUPL.

5. Potential Points of Conflict:

As the previous discussion has revealed, no particular problems arise in respect of Permissive Licences, but with the restrictive licences which were presented to us (all of them in the GPL licensing group) a number of distinct points of conflict arise. Some of the points of conflict are clear. In particular, both the GPL 2 and the GPL3 and related licences are likely to be incompatible (or, at least, in the case of the GPL3, cannot safely be relied upon as being compatible) with FRAND licences, including, in all likelihood, FRAND-Z licences. In other words, it is probable that the GPL2 and GPL3 Licences would not be capable of allowing programs licensed thereunder to interoperate with EIF2 where there are unavoidable patents licensed on FRAND terms.

However, there are also less obvious potential areas of conflict which will become apparent as we now proceed to consider the terms of the examples of FRAND Patent Licences with which we were provided.

6. FRAND Licence Conflicts:

(1) Royalty Free Licences.

There being no royalty payable, it would clearly follow that no issue of incompatibility with the GPL Licences arises by reason of the existence of royalty payments. That, however, is by no means a complete answer, and it is necessary to look more deeply at the respective FRAND Licensing terms.

(i) Microsoft Corporation: Royalty Free Business Process Execution Language for Web Services Specification License Agreement:

The structure of this licence is typical of the Microsoft FRAND Licences. There is granted: first, a Copyright Licence in relation to the licensed work: second, a Patent Licence, and, third, a permission to distribute the Source Code. Each of the first two of these licences is non-exclusive, royalty free, non-transferable, non-sublicenseable, personal and worldwide, and the permission is stated to be non-transferable, non-sublicenseable and personal (though, clearly, it is also in effect non-exclusive and royalty free.) Because each of these licences is personal, it follows that, if a developer (developer A) originates, or modifies a work under the GPL2 or GPL3 terms, he has to be able to make that work available "as a whole" to downstream recipients. That he does by himself obtaining a licence (in the

present instance) from Microsoft of the Royalty Free Business Process Execution Language for Web Services Specification. Thus, he is able to transmit (in the language of clause 2(b) of GPL2) the work as a whole, at no charge to developer B and any other person to whom he may wish to transmit it. However, if Developer B carries out further modifications and then seeks to transmit the modified work to another party, the benefit of the Microsoft licence in favour of Developer A does not transmit to Developer B, who would have to obtain his own Licence from Microsoft. Thus it would be argued that Developer A is unable to cause that the work which he publishes is licensed as a whole at no charge to "*all* third parties *under the terms of this license.*"

As we stated above, there is a reasonable prospect that, applying a purposive interpretation, if the required result were achieved but as a result of the licensing structure, rather than the actions of developer A, a court would not regard developer A as being in breach – and, in any event, it might be said that it was Developer A's act in applying for the Microsoft Licence which did cause the whole work to be available. This, however, is something of a side-issue. The real question is whether the work is being made available under the GPL licence to "all third parties" (GPL2) or "anyone who comes into possession of a copy" (GPL3).

The obvious problem would be that any licensing by a developer to a licensee (be it a licence of the original work from the original developer to developer A or to developer B or to a downstream developer, a licence of the first modifications by developer A to developer B or a downstream developer, a licence of the second modifications by developer B to a downstream developer and so on) would be permitted under both the GPL and the Microsoft Licence, but, although the licensee could carry out his own modifications in respect of the GPL work, he could not do so in respect of modifications which would put him into breach of the patent licence and of the copyrighted material licensed by Microsoft without first obtaining his own licence from Microsoft. Because the particular Microsoft Licence is a FRAND-Z licence, the downstream recipient will end up with a licence from Microsoft of the unavoidable patent, but will not have got one automatically, which a court might be likely to determine is what clause 2(b) of GPL2 requires.

Clause 5(c) of GPL3 stipulates: "You must license the entire work, as a whole, under this license to anyone who comes into possession of a copy." As already noted, if licensed under the GPL3, the GPL will provide the same licensing terms (and freedoms to copy and modify) to anyone downstream. In these circumstances, since the benefits of the Microsoft Licence will not extend downstream (but will require each recipient to apply for his own Microsoft Licence) it will also follow that the Microsoft Licence and clause 5(c) of GPL 3 are inconsistent with each other.

This is underlined by the terms of clause 2.3 (the Source Code permission) of the Microsoft Licence read in the context of clause 11 of GPL3.

Clause 2.3 of the Microsoft Licence provides for the insertion of a Notice, which clearly explains the effect of the Source Code permission:

> *"This source code may incorporate intellectual property owned by Microsoft Corporation. Our provision of this source code does not include any licenses or any other rights to you under any Microsoft Intellectual Property. If you would like a License from Microsoft (e.g. rebrand, redistribute) you need to contact Microsoft directly".*

This is inconsistent with clause 11 of GPL3 which requires that the source code should be "available for anyone to copy... under the terms of this licence" and the extension of the patent licence to downstream recipients "*in a manner consistent with the requirements of this license.*"

In short, it is difficult to see how either the GPL2 or the GPL 3 Licence on the one hand and this Microsoft Licence on the other might be reconciled to each other.

(ii) Microsoft Corporation: Royalty Free Business Sockets Direct Protocol License Agreement:

This differs from the Royalty Free Business Process Execution Language for Web Services Specification License Agreement in that it does not contain a Copyright Licence, but it does contain a Patent Licence and a Source Code Distribution permission which are in similar terms to the Business Process Execution Language for Web Services Specification License Agreement. Our comments are as in respect of that last-mentioned Licence Agreement.

(iii) Microsoft Corporation: Royalty Free Sender ID Patent License Agreement:

This contains a Patent Licence in similar terms to the other two Microsoft licences examined above. The Source Code Distribution Licence is somewhat differently worded, but is still non-transferable, non-sublicensable and personal. The position of the Agreement in relation to the GPL2 and the GPL3 is as noted above.

(iv) Microsoft Corporation: Structured Storage License Agreement:

In common with the Business Process Execution Language for Web Services Specification License Agreement, this Licence consists of a Copyright Licence, a Patent Licence and a Source Code Distribution permission. The terms of the Copyright licence and Source Code Distribution permission are similar to the Business Process Execution Language for Web Services Specification Licence Agreement and raise the same issues in relation to the GPL2 and 3 Licences, as does the Company Implementation Patent Licence. The Company Toolkit Patent Licence imposes additional obligations on the Licensee to impose additional restrictions on the end users. This is likely to be inconsistent with clauses 7 of GPL2 and 12 of GPL3.

(v) Microsoft Corporation: Royalty Free Web Services Security Specification License Agreement:

The analysis here is as in respect of the Business Process Execution Language for Web Services Specification License Agreement.

(2) Royalty Payable Licences:

(i) British Telecommunications plc: Licence Agreement for the use of a CCIT Approved Algorithm in V42 BIS Modems:

The architecture of this Agreement is that it grants a Licence for the use by the Licensee of the Licensor's essential statutory IPR, for the use and sale of "Licensed Products". The term, "Licensed

Products" is limited to "apparatus, modems and like equipment *and shall not include* components such as (but not limited to) microchips or *stand-alone software* which embody the Licensor's proprietary intellectual property, except...." [emphasis added].

So long as the developer is selling (say) a modem, there is not a problem; but as soon as he is seen to be conveying (in the extended meaning of that word in the GPL3) software, there is an insuperable incompatibility between the GPL freedoms and this BT Licence Agreement.

Further and in any event, even if that issue might be overcome (though we cannot see how), there remains a substantial problem as a result of the levying of a Royalty. As explained above, this is likely to be inconsistent with both the GPL2 and GPL3 Licensing terms.

An interesting further issue is that clause 2 provides (*inter alia*) that the licence terminates when the IPR ceases to be essential. Essential is defined as meaning "not possible on technical grounds to make, sell or operate equipment which complies with the Standard of any part thereof without infringing that IPR." This raises the intriguing possibility that, even if the BT Licence were otherwise compatible with the GPL2 or 3, there might come a date on which it would cease to be compatible – the date when the patent ceases to be unavoidable. It is at least arguable that this future possibility closes down the perpetual freedoms under the GPL2 and 3 (both of which apply for the full copyright term) thereby rendering the BT Patent Licence presently incompatible.

(ii) MPEG-2 Patent Portfolio License:

The essential patents contained in the MPEG-2 standard are owned by a number of different proprietors. This Licence is in reality a series of licences of individual patents. The specific terms of each of the licences differ to some extent from each other, but all share the characteristic architecture of being a grant of a licence or sub-licence to the grantee for his own use only, which gives rise to the same problem with the GPL 2 and the GPL3 as is referred to above: namely that it is not a licence for all to use. Each would-be user requires to obtain his own licence of the Essential Patents. Furthermore, some, though not all, are licences requiring the payment of a royalty which is related to the distribution of the work. As explained above, payment of a royalty at all is inconsistent with clause 2 b) of GPL2 and clause 11 of GPL3. Additionally, such a requirement would be contrary to the specific provision of clause 11 prohibiting an arrangement whereby "the Licensee pays a royalty related to the extent of the licensee's conveying of the work."

7. FRAND Licensing – Compatibility with EIF2:

Aside from the issue of the compatibility of FRAND Licensing with Open Source Licensing, there may also be an issue regarding the compatibility of individual FRAND licences with the EIF2. In particular, there is an assumption in EIF2 that a given developer who wishes to utilise the standard will have a legal entitlement to be given a FRAND licence of unavoidable patents. It may be worth examining that assumption.

Where a manufacturer uses a standard in a product which includes unavoidable intellectual property rights that are the subject of a FRAND licence, and the manufacturer is unable or unwilling to obtain

a licence from the owner of the unavoidable patent, but continues to manufacture products that use the standard, then he will be infringing the rights of the owner of the intellectual property. In these circumstances, it is clearly essential for the whole scheme of FRAND Licensing of unavoidable patents that the manufacturer can be assured that a FRAND Licence will be granted. What assurance does he have that he will be able to obtain such a licence?

Relying upon a hope or an easy assumption is not adequate. Manufacturers have been known to allow standards to be developed without disclosing that they have patent rights, and thereafter, in a "patent ambush", asserting those rights against persons implementing the standard in order to extract abusive royalties, as occurred, for example, in the *Rambus* case (Official Journal C030, 06/02/2010, pages 17 and 18).

One level of assurance may lie in self-regulation. In particular, when industry Interoperability standards, such as those developed by members of the European Telecommunications Standards Institute (ETSI), unavoidably include the intellectual property rights of others (usually from within the membership organisations), such standards setting bodies have invariably adopted Intellectual Property Policies that govern how the body will take into account those intellectual property rights that are utilised in adopting a standard. For instance, ETSI has a policy relating to the disclosure of essential intellectual property rights and rules regarding the licensing of such intellectual property rights on FRAND or RAND terms. Members are generally required to inform the standards body of their intellectual property rights within an appropriate time frame, and to volunteer to undertake to grant licences on FRAND terms and conditions. A further example of such a standard is the MPEG-2 standard adopted by ISO/IEC JTC 1 and The International Telecommunications Union, which is the standard in respect of which the MPEG-2 Patent Portfolio License referred to above is issued.

How this works is illustrated in the litigation in the United States, *Nokia Corporation v Apple Inc.* (US District Court, Delaware 1:09-cv-00791-UNA). In that case, Nokia holds a number of US patents which are essential to the implementation of the GSM, the UMTS and the IEEE 802.11 Standards. Nokia declares itself ready and willing to grant FRAND Licences of those patents to Apple, but claim that Apple is refusing to pay the required royalty, accordingly does not have a licence and is therefore infringing the patent.

The GSM and UMTS standards are European standards developed under the patronage of the European Telecommunications Standards Institute (of which both Nokia and Apple are members), whose rules require the disclosure of essential IPR and its licensing on FRAND terms. The mechanism by which this is sought to be achieved is rule 6.1:

> *"When an essential IPR relating to a particular standard or technical specification is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner to give within three months an irrevocable undertaking that it is prepared to grant irrevocable licences on fair, reasonable and non-discriminatory terms and conditions under such IPR to at least the following..."*

In fulfilment of its obligation under this rule, Nokia published a Declaration in the following terms:

> *"The Signatory has notified ETSI that it is the proprietor of the IPRs listed above and has informed ETSI that it believes that the IPRs may be considered essential to the Standards*

> *listed above. The signatory and/or its affiliates hereby declare that they are prepared to grant irrevocable licences under the IPRs on terms and conditions which are in accordance with clause 6.1 of the ETSI IPR policy, in respect of the Standard, to the extent that the IPRs remain essential.....*
>
> *"The construction, validity and performance of the Declaration shall be governed by the laws of France."*

Nokia's position, in its Complaint, is that it is willing to fulfil that obligation, but that Apple is refusing to compensate Nokia on FRAND terms. The text of the Complaint is available at:

> *http://www.scribd.com/doc/21458614/Nokia-vs-Apple-Complaint*

Apple responded on several fronts (including claiming that Apple did not infringe the patents, that the patents are not essential, and counterclaiming for alleged breaches by Nokia of certain Apple Patents) but, so far as relevant to the present discussion, Apple maintained that the terms on which Nokia was prepared to offer a licence were not fair, reasonable and non-discriminatory. Apple's Answers and Counterclaim are available at:

> *http://www.scribd.com/Nokia-Apple-Counter-Suit/d/23997407*

This example highlights what appear to us both the strengths and the weaknesses of typical FRAND licensing.

The clear intent of rules such as the ETSI rules, is to lead to an irrevocable undertaking which would be legally enforceable against the IPR holder. From the perspective of the Common Law jurisdictions, that intent may not be capable of achievement. In particular, under both English and Scots law, the general publication of such an offer would be an offer open for acceptance unless and until it is withdrawn prior to acceptance. (see *Carlill v Carbolic Smokeball Company* [1893] 1 QB 256; *Hunter v General Accident Fire and Life Assurance Corporation* 1909 SC (HL) 30). In order to ensure that an IPR holder does not withdraw the offer, it is said to be irrevocable, but if an IPR holder did purport to withdraw it, *quid iuris*?

The answer may differ in different jurisdictions. In Scots law, under the principle known as *pollicitatio*, a unilateral promise requires no acceptance, and a person making it may be bound by it:

> *"A promise is a pure and simple expression of the will of the party undertaking the obligation, requiring no acceptance, and still less requiring mutual consent... It appears to me that when a party, in terms of this letter, agrees to pay £100... he is making a promise, and that by the bare act of his will thus expressed he undertakes an obligation to pay, which requires no acceptance." – Macfarlane v Johnston (1864) 2M 1210, per Lord Justice Clerk Inglis at page 1213.*

This principle clearly applies to a promise to keep an offer open (*Marshall and McKell v Blackwood* (1747) Elchies sv 'Sale' No. 6, HL; *A and G Paterson Ltd v Highland Railway Company* 1927 SC (HL) 32 at 38). Accordingly, there would be no difficulty in Scots law regarding an offer to grant a licence on FRAND terms, and which is stated to be irrevocable, as being an offer which is open to

acceptance by the general public and which legally cannot be withdrawn.

However, it would appear that Scots Law is different from the law of England and other common law systems as well as most of the civil law systems and the same result may not occur elsewhere. In particular, the position in English law would be that a promise to keep an offer open would not be legally binding unless the offer were made in a deed under seal, or the promisee has provided valuable consideration. (*Chitty on Contracts* (30th Edn) vol 1 §3.022). The requirement for valuable consideration would not be met, leaving the requirement of a deed under seal. That would not be a problem if the undertaking were executed in England (a seal could be appended), but what if the granter chose to say that the offer were irrevocable but did not issue the offer under seal? (The undertaking to keep it open would not be binding.) Or what if, as in the Nokia case, the undertakings were issued under the law of France, or some other jurisdiction?

In the absence of a formal undertaking as under the ETSI rules, then if the appropriate licence agreement form were published by the IPR holder, that may still constitute a unilateral offer to enter into a bilateral contract: that is, the offer is open to anybody to sign and return the licence if they wish to, and if it is signed and returned, then both parties are legally bound by the terms of the licence. Should an IPR holder refuse to honour the provisions of the licence after a licensee has signed and returned it, then it is possible to argue that the IPR holder is estopped from resiling from the licence. However, this does nothing to address the question of irrevocability as in this example there would not be any Undertaking which even purported to be irrevocable.

Leaving aside the question of revocability, other problems arise.

First, not every IPR holder is necessarily a member of a relevant standard-setting body such as ETSI or the ITU, and will not be bound by the rules of such a body. Where the standard is being set by such a body, then if the body is aware of the existence of the essential IPR belonging to a non-member, it may reasonably be anticipated that the that the body would not establish a standard containing such essential IPR without appropriate licensing from such non-member. However, one does not necessarily have any assurance that this is invariably so. In the event that the owner of the IPR is not bound by the rules of such a body, then it is difficult to see what legal compulsitor there may be upon the IPR owner to grant a FRAND Licence unless the IPR owner had voluntarily published such a Declaration as was published by Nokia under the ETSI rules.

Second, the example which we gave related specifically to the ETSI rules, under which the obligation of the IPR owner to undertake to grant FRAND licences is reinforced by rule 8.1.1 which provides that where an IPR holder refuses to offer FRAND licensing of unavoidable patents, there should be sought to be developed a standard which avoids that IPR, or (by rule 8.1.2) where no alternative is available, the standard should not be developed. However, not all standard-setting bodies will necessarily have the same rules.

Third, even granted the existence of such rules, this does not necessarily prevent a patent ambush as occurred in the *Rambus* case, and an *ex post facto* remedy founded in EU competition law is not as satisfactory as preventing the mischief in the first place.

Fourth (and in our view the greatest weakness) is the imprecision of the term “fair reasonable and non-discriminatory”. What is “fair” to one person may not be seen as “fair” to another. This problem

is thrown into particular relief where the FRAND Licence requires the payment of a royalty. This is not a merely theoretical observation as, in the *Nokia v Apple* litigation it is at the heart of the subject matter of the dispute. In paragraph 2 of its Answers, Apple asserts that it "has the irrevocable right to be licensed to those patents on F/RAND terms".

It appears to us that this assertion exposes what may be a fatal flaw in the ETSI scheme and, it may be, other FRAND licensing schemes. It is a truism that a contract requires consensus on the essentials, one of which is price. Thus if an IPR holder offers to make a FRAND licence available at a price of, say, £1000, that is capable of being met by an acceptance and producing a consensus. However, if the offer (as it is in the undertaking) is merely to charge a "fair" price (and/or to grant a licence on terms which are "fair, reasonable and non-discriminatory") a purported acceptance of *that* offer would not create a contract as there is no consensus on what, precisely that price is, and/or those terms are, or, at least, a consensus on a mechanism for the objective determination of such terms (for example by providing a formula, or, alternatively, an agreement that the price or terms would be such as are set by an independent third party). It is at best merely an offer to treat. In these circumstances, it would seem to us, as lawyers in the two main UK jurisdictions, to be a leap of faith for Apple to assert that it has a legal right to the grant of a Licence, though we should stress that we express no view on whether such a position might be tenable under the law of the United States Federal jurisdiction in which the dispute is being litigated. Any such speciality apart, in our view it is not possible to pretend that there is an agreement where there is none.

Even if it could be asserted that there is a right to be granted a FRAND licence where there is no agreement as to its terms, or where an IPR holder is offering a licence which it asserts is fair, reasonable and non-discriminatory in its terms, but the potential licensee claims that it is not, then that assertion is a recipe for litigation.

In short, the EIF2 in calling for "Intellectual property rights related to the specification [to be] licensed on FRAND terms" may only be restating the problem, rather than providing an answer, given the scope for interpretation as to what FRAND terms may constitute and the legal uncertainty surrounding Licensees being able to compel by law the grant of licences which may unequivocally be regarded as FRAND licences.

A further issue arises from the possibility of different interpretation in different jurisdictions. We have already commented upon the difficult issues surrounding irrevocability of an offer to grant a licence (which is likely to be free of problems only if the offer were governed by the law of Scotland). Additionally, there are two recent cases which (apart from the issue of irrevocability) throw into question the effect of such an offer.

The *Orange Book case (KZR 39/06)* in which the German Bundesgerichtshof (Federal Court) handed down its decision on 6th May 2009, related to a refusal by patent holders, Philips and Sony, to grant a FRAND licence of IPR in the CD-R standard in favour of the defendant, a would-be licensee under such a licence. At the core of the action were issues of competition law (rather than the private contract law issues which we discuss above). It was maintained by the defendant that, by refusing to grant a Licence, the plaintiff was abusing a dominant market position. The court found, in principle, that this was a relevant contention:

> *"a) The defendant named can make a claim arising out of a patent against the plaintiff patent holder's default in respect of an improper use of a market dominant position if he refused to conclude with the defendant a non-discriminatory patent licence without limiting conditions." (See summary on page 1 of the judgement and also paragraph 27).*

The court also found that before the Patent holder could be regarded as having acted improperly, the defendant would require to have made an unconditional offer to enter into an agreement in terms which the patent holder could not reject. The patent holder would not be able to reject the offer if to do so would "result in his infringing the prohibition on discriminatory and limiting conditions". In other words, if the would-be licensee makes an unconditional offer to accept a FRAND licence, the patent holder is required to accept it, and if he does not, he lays himself open to a claim by the would-be licensee.

However, the court also held that the defendant was required to act as though bound by the licence, abiding by the conditions attached to it, and, in particular actually paying the royalty due under the licence (paragraph 29). It is clear from the rest of the judgement, especially 33, that this does mean actually paying, rather than holding oneself out as willing to pay (presumably with the money being paid into some form of Trust account if the patent holder refused to accept payment).

The case was very much seen through the lens of German competition law. In particular, this is seen from paragraph 30:

> *"The applicant must have made an acceptable offer of reasonable contract conditions which the holder cannot reject so the applicant cannot reasonably deal with similar enterprises or hinder him unfairly, as would be generally recognised. The market dominant holder is not obliged himself to offer permission for use of the invention: only if he turns down an offer to conclude an agreement on non-limiting or discriminatory conditions does he make improper use of his market dominant position. The use of a patent by an enterprise which is not prepared to enter into a licence agreement on such terms may not be tolerated."*

However, the underlying contractual analysis seems to be that there is no obligation for the patent holder himself to *offer to grant* a FRAND licence, but on competition law grounds, could not refuse an *offer to accept* such a licence on FRAND terms. This analysis did not address the questions of contractual rights arising from undertakings to grant FRAND licences, which questions we address above. Indeed, it proceeds upon the specific assumption that there is no licence granted but that the would-be licensee has to behave *as though* there were.

This falls to be contrasted with the case in the Netherlands of *Koninklijke Philips Electronics N. V. v SK Kassetten GMBH & Co. KG* (17 March 2010). In that case, the circumstances were similar (and even one of the parties, Philips Electronics NV was the same). The would-be licensee, founding on the *Orange Book* case insisted that it was entitled to a FRAND licence under cartel law. The Dutch Court was not persuaded. The court found that there was an infringement by SK of Philip's patent, then continued (§6.19):

> *"SK's argument that it is entitled to a licence under EP 238 on Fair Reasonable and Non-discriminatory (hereafter: FRAND) terms, cannot lead to a different conclusion. To the*

> *contrary of SK's belief, the alleged entitlement to a FRAND-licence is not a permit to infringe upon Philips' patent rights. If the alleged entitlement would have actually been converted into a licence, SK would naturally be free to use the patented technology. However, as long as SK does not have a licence, there is in principle no ground to allow SK the use of the patented technology, nor to prevent Philips from enforcing its patents."*

For the purposes of the present discussion, the court's reasons are particularly apposite:

> *"6.21 Allowing the use of patented technology or preventing the enforcement of a patent right on the basis of a mere entitlement to a FRAND-licence, would moreover lead to legal uncertainty. As long as the alleged entitlement is not converted into an actual licence, it is uncertain for both parties if the alleged entitlement is justified, let alone that it is clear what the licence terms will be. There will be frequent cases of such uncertainty, as parties regularly will have different opinions regarding the answer to the question which terms, and especially which royalty rates, are FRAND. Therefore, also in view of legal certainty a system is desirable wherein the right to enforce a patent only stands after a party actually has a licence." [emphasis added].*

Finally, in justifying its decision, the court stated:

> *"6.25 The Court is aware that with the above mentioned ruling it deviates from the criteria which have been developed for the assessment of so-called FRAND-defences by the German Bundesgerichthof (hereafter: BGH) in the Orange Book decision (BGH 6 May 2009, KZR 39/06, b9 7936). According to the BGH, in an infringement case, the defence that the defendant is entitled to a FRAND-licence holds water if – in sum – the defendant has unconditionally offered the patentee to take a FRAND licence and the defendant is already executing the conditions thereof, in so far as it concerns the royalty obligations, if so wanted by putting up security. From the foregoing it follows that the court is of the opinion that this decision of the BGH applied to the Dutch situation (i) flies in the face of patent law (compare findings 6.19 and 6.20) (ii) brings about legal uncertainty (compare finding 6.21) and (ii) is unnecessary for the protection of the legitimate interests of the defendant (compare finding 6.22 and 6.23). [..]"*

It seems to us that the section which we have emphasised in §6.25 effectively exposes the weaknesses which, from a common law perspective, we have highlighted above. A mere agreement to agree is no agreement: first, until a licence is actually granted, there is (self-evidently) no licence; second, so long as the actual terms of a FRAND licence are neither agreed nor capable of objective ascertainment, there is no consensus as to the terms of any such licence and there is no basis upon which a plaintiff might request a court to order the granting of any such licence; and, third, even if those hurdles might be overcome, in the final analysis FRAND terms end up as being whatever the patent holders would be prepared to grant as being FRAND terms, no more no less, unless some alternative compulsitor can be found in the relevant competition law to require a compulsory licence, but even then, it is at best uncertain whether the relevant court would allow the entitlement to a compulsory licence to be used as a defence in infringement proceedings unless and until such a licence is in fact granted. The German courts would allow such a defence, the Dutch courts would not, and what may happen in other jurisdictions is an open question.

That is not to say that it may not be possible to make a FRAND licensing scheme legally workable.

As we have identified, the two major problems with the present regime are, first, having a clear statement of terms which, if accepted by a would-be licensee, would produce a consensus and not a mere "agreement to agree" and the second problem is to ensure that this offer, which has to remain open to all comers, is not withdrawn.

So far as the first problem is concerned, all that would be necessary would be that the Patent holder should publish the actual terms (including price, if any) on which the FRAND Licence is being offered. In order to prevent a very obvious abuse of this, there would require to be a role for the standard setting body in determining whether those terms would be fair, or, if not, then to avoid incorporating the patent in the standard. Alternatively, if it is thought that the standard may have a sufficiently long shelf-life as to make it inadvisable to set the terms at the start for all time, then, on the principle that a thing is certain if it can be made certain, the offer should stipulate that (for example) the terms will be such as are set from time to time by an appropriate third party, such as the relevant standard-setting body.

In order for this scheme to be workable, it would be indispensable that no standard-setting body should permit the creation of a standard involving embedded patents without there being in place internal rules having the effect described in the previous paragraph and which would bind all patent holders who wish to have their patents embedded in the standard.

So far as the second problem, irrevocability of the offer, is concerned, this might be achieved by requiring all offers to be expressly stated as being governed by the laws of a jurisdiction (such as Scotland) which recognises the legal enforceability of a term in an unaccepted offer not to revoke that offer. Alternatively, a similar result might be achieved where a contract is subject to English law under the provisions of the Contracts (Rights of Third Parties) Act 1999, although it is a precondition that a contract exists for a third party to have any rights under this Act (thus a contract could be established between the patent holder and, for example, the standards body, under which licence rights were explicitly granted to third parties by virtue of the provisions of the Act). Where there is an offer that has not been accepted, there can be no contract. The Act provides an exemption to the doctrine of privity, in that it permits a third party to obtain rights under a contract. The terms of the Act apply either expressly (under s1(1)(a)) or where a term purports to confer a benefit on a third party (s1(1)(b)):

> *"1. Right of third party to enforce contractual term.*
>
> 1. *(1) Subject to the provisions of this Act, a person who is not a party to a contract (a "third party") may in his own right enforce a term of the contract if–*
>
> 2. *(a) the contract expressly provides that he may, or*
>
> 3. *(b) subject to subsection (2), the term purports to confer a benefit on him."*

The third party must be specifically mentioned in the contract for the provisions of s1(1)(a) to apply. For the third party to have the advantage of the second head, first, a benefit must be conferred on him (*Prudential Assurance Company Ltd v Ayres* [2007] EWHC 775 (CH), [2007] All ER 946, reversed [2008] EWCA Civ 52 on the ground that the contract restricted the claims of the third

party). Whether such an intention existed would be a matter of construction (s1(2)). Second, s1(3) provides that the third party can be identified in the contract as a member of a class or as answering a particular description. It must be emphasised that the general rule is that a contract only binds the parties to it, and the Contracts (Rights of Third Parties) Act 1999 only refers to the acquisition of rights under a contract to which a third party is not a party. It does not deal with the question as to whether duties can be imposed by such a contract on a third party.

Without these safeguards, we fear that there is a risk that FRAND Licensing may be seen as a thing of smoke and mirrors.

8. An Irresistible Force and an Immovable Object

In the light of the foregoing analysis, it is possible to see the issues with greater clarity.

The EIF2 requires:

> *"Intellectual property rights related to the specification are licensed on FRAND terms or on a royalty-free basis in a way that allows implementation in both proprietary and open source software."*

The first part of the requirement is for the IPR to be "licensed on FRAND terms or on a royalty-free basis".

This requirement conceals more than it lays bare. There is no legal certainty over what FRAND terms are, or may be, nor any mechanism to determine such terms objectively. Insofar as there exist rules and procedures laid down by standard-setting organisations to compel the granting of FRAND licences, these procedures may or may not be effective, and may lead to different results in different jurisdictions. Ultimately it may not be possible to compel the granting of such licences in private law, not least because of the inability to regard the use of the phrase "FRAND terms" as denoting a consensus. Even if, in certain circumstances and in certain jurisdictions the grant of a licence may be compelled under competition law, that is, at best, a cumbersome instrument, especially in those jurisdictions which do not admit of the right to use as entitlement to a compulsory licence defensively.

By the second part of the requirement, there is sought to be achieved a level playing field between proprietary and open source software – the IPR has to be licensed "in a way that allows implementation in both proprietary and open source software."

Such a level playing field can be achieved in respect of permissive open source licences and in respect of the EUPL, but cannot, as matters stand, be achieved in respect of the GPL2 and GPL3 family of licenses, the terms of which may prevent the "conveying" of software thereunder where there is not an automatic perpetual licence of the unavoidable IPR. The fundamental incompatibility lies in the architecture of the two licensing models – the GPL model is a cascade where, having granted the initial licence to the first licensee, the owner of the original IPR (in this case, copyright) does nothing further – subsequent licences arise automatically, whereas under the FRAND model the owner of the

IPR (in this case, the Patents) grants a fresh licence on each transfer. The GPL requires that the patent licensing should conform to the same licensing architecture as the GPL model.

That is not to say that there could not be devised a model of FRAND licensing which could accomplish conformity with the objectives of the GPL2 and 3, but at the very least, the licences would have to be FRAND (and in the case of GPL2, FRAND-Z) licences and have similar "automatic grant" terms to those contained in the GPL, permitting the first licensee to transmit the benefit of the licence to the next and so on down the line, as happens under the GPL model. It may be questionable whether IPR holders would universally be prepared to agree such a model of licensing, though if a critical mass of them were, that might lead to a changed understanding of FRAND licensing which would make it compatible with the GPL licensing terms. However, it should be noted that any such onward transmission of the benefit of the patent licence would be effective only insofar as required to implement the standard.

If such a hypothetical alternative model might be achieved then it would be arguable that the objectives of the GPL would have been achieved, even though there may remain conflicts with the precise wording (for example, although there would be the required automatic downstream licensing, it would not arise "under *this* [i.e. the GPL] licence"). For full compatibility to be achieved, some revisal of the terms of the GPL would be required. However, such revisal could only occur were there to be a modification of the present opposition in principle of the GPL to patents. This may not be too likely.

Whatever the theoretical possibility of such an outcome, the fact remains that, because of the fundamental legal weaknesses in the existing FRAND model, it may be questionable whether the present model could ever satisfy the intentions which lie behind EIF2.

In short, as matters presently stand, EIF2 could be seen as incapable of full implementation: there is no legal precision as to what it requires (the reference to "FRAND terms") and it desiderates an outcome which, in relation to the GPL licenses cannot presently be achieved.

In its defence, it may be noted that although "FRAND terms" is a legally uncertain formulation, at a practical level the industry has always managed to muddle through, and, of course the GPL family of licences is by no means the totality of the Open Source licensing models, none of the rest of which cause the same problems, so, it could be argued, software developers could adopt one of these other licences. However, the economic reality is that (as the figures provided in the Brief disclose) 64.58% of the Open Source licences which have been adopted belong to the GPL family.

9. The Questions Answered:

In light of the foregoing, we answer the Questions asked of us in the Brief as follows:

1. Counsel are asked to consider what aspects of a restrictive open source licence (as typified by GPL2) would be impacted by a typical RAND licence, and whether this would be equally true for permissive licenses.

Clearly, where there is an unavoidable patent embodied in a standard, then, if a software developer

writes software to operate with the standard, that will give rise to an infringement of the patent, unless the patent owner grants permission for the patent to be used, which is to say, licences the patent to the developer. Since such Licensing is usually on FRAND or FRAND-Z terms, the patent holder cannot choose to deny a licence to a software developer who seeks to use open source software. There is, however, a problem which arises by reason of the fundamentally different architecture of the "cascade" licensing of Open Source software under the GPL2 and GPL3, and the parallel licensing of software patents under the typical FRAND Licensing scheme. It is not a problem with the EUPL which, although having the same architecture as the GPL, does not attempt to fence it with restrictive requirements in the way that the GPL does. The problem with the GPL becomes evident in relation to the next question.

2. *Counsel are asked to consider what operative provisions, if present within a RAND licence, would prevent the use of software under open source software licences (both restrictive and permissive), to implement solutions dependent on such RAND licences*.

No problem arises from the terms of the EUPL and the permissive and hybrid licences which we have been asked to examine. However, problems do arise because of the fundamental incompatibility of the architecture of the GPL family of licences (as that architecture is reflected in the GPL licensing terms) with the existing FRAND model. In particular, if the granter of the GPL licence cannot provide the same automatic downstream cascade of patent rights as he can in respect of copyright, he cannot grant a GPL copyright licence. Furthermore, there is an additional incompatibility under the GPL2, and very substantial problems in relation to the GPL3, all as discussed above. Therefore, it is probable that the GPL2 and GPL 3 Licences would not be capable of allowing programs licensed thereunder to interoperate under EIF2 with standards containing unavoidable patents where there are unavoidable patents licensed on FRAND terms, though it might be an open question whether some of these issues could be addressed if the IPR holder were prepared to agree to the downstream transmission of the benefit of the licence.

3. Counsel are asked to advise whether the restrictions deemed to be present above would still be present if the RAND licence was made available on royalty free terms or if a royalty of zero was possible, if for example the royalty was based on a percentage of revenue.

As we explain above, the problem of incompatibility between the GPL 2 and GPL 3 terms and FRAND Licences of unavoidable patents embedded in standards is not restricted to cases where a royalty is charged. Therefore, although the removal of any obligation to pay any charge or royalty would address one of the concerns, there would still remain the fundamental incompatibility to which we refer in answers 1 and 2.

4. *Counsel are asked to advise on the extent to which (if any) open source companies are in practice restricted from developing software where the implementation in question necessitates the infringement of unavoidable patents contained within an interoperability standard, even where RAND-Z or RAND licences are available in respect of such patents.*

Of course developers cannot develop software where the implementation in question necessitates the infringement of unavoidable patents contained within an interoperability standard unless they have first obtained a licence from the patent owner. There ought not to be any such patents in respect of

which licensing is on anything other than FRAND terms, and, accordingly a developer may readily obtain a patent licence and thereby avoid infringing the patent. In cases where FRAND licensing is not available (for example in the case of Patent ambushes) a remedy may be available in Competition Law.

The problem, however, is that, although the obtaining of a FRAND licence provides a complete answer for a developer who is using the EUPL or a permissive or hybrid licence containing terms similar to those in the licences which we have examined, such a solution is not possible in relation to restrictive licences belonging to the GPL family at least in the absence of agreement by the IPR holder to the downstream transmission of the benefit of the licence. Even with such an agreement, substantial problems may remain.

In summarising the outcome of our consideration of these licensing terms, we should also draw attention to the potential inadequacies in FRAND licensing schemes which are presently operated, namely the problem of offers of FRAND licensing terms which, though they say that they are irrevocable, may nonetheless be legally withdrawn at any time prior to acceptance and the problem of mere "agreements to agree" which fall short of disclosing any such consensus as would be necessary to form an agreement. We draw attention also to our suggestions as to how those matters might be addressed.

10. Conclusion:

Where, then, to go from here?

It is noteworthy that the EIF2 is largely an aspirational document. Its objective is that IPR should be licensed "in a way that allows implementation in both proprietary and open source software". Arguably, to allow the Commission's overriding objectives to be achieved requires the immovable object of the present FRAND licensing regime to give way to the irresistible force of Open Source licensing requirements or *vice-versa*, but this is not a legal argument so much as it is a political and economic one. It is not a legal argument because, in the final analysis EIF2 is not a legal document and if the lawyers get involved in the argument, they will fall to arguing about how far EIF2 is mandatory, and raise issues concerning open source licensing models that do not cause the same conflicts.

The argument, rather, is economic, social and political because of the plain defects in the present FRAND model which has no proper legal underpinning and in which, when push comes to shove, that which is fair is what the IPR holders are prepared to agree as being fair. It is economic, social and political because it is about policy decisions which require to be made by the Commission as to where the balance ought to lie between holders of IPR in unavoidable patents and those who seek to interact with the standards. Finally, it is economic, social and political because the overriding objective of the Commission – to "foster competition since providers working under various business models may compete to deliver products, technologies and services based on such specification." – is an objective which is, at once, economic, social and political.

EIF2 is but a step in a continuing process. The attainment of the Commission's objectives is still all to gain or lose.

THE OPINION OF

Iain G. Mitchell QC; Stephen Mason, Barrister.

About the authors

Iain G. Mitchell QC *is in private practice as an Advocate (Barrister) in Scotland. He was called to the Bar in 1976 and took silk in 1992. He is the Chairman of the Scottish Society for Computers & Law, Chairman of the Faculty of Advocates Information Technology Group, Co-convenor of the Scottish Lawyers European Group, an Honorary Lecturer in the Institut für Informations- Telekommunikations- und Medienrecht at the University of Münster, Westphalia, and a Liveryman of the Worshipful Company of Information Technologists. He holds office as the United Kingdom representative on the Information Technology committee of the CCBE and is a member of the IT Panel of the Bar Council of England & Wales and of the Scottish Courts Technology Forum. He is a member of the editorial committee of the International Free and Open Source Software Law Review. His other publications include the Scotland Chapter in Electronic Evidence (2nd edition LexisNexis Butterworths, 2010). He is a member of the Church & Society Council of the Church of Scotland for whom he recently completed work as a joint author of the major Report to the General Assembly: The Internet - In whose image? and is engaged in working on a similar project for the Ethical and Spiritual Development Panel of the WCIT. He is recommended in the Legal 500 for IT and IP Law and is rated in Band 1 for both IT Law and Public Procurement Law in the Chambers Directory. He has been invited to lead a Public Procurement Special Interest Group for the European Legal Network.*

Stephen Mason *is the author of Electronic Signatures in Law (3rd edition, Cambridge University Press, 2012) and general editor of Electronic Evidence (2nd edition, LexisNexis Butterworths, 2010) and International Electronic Evidence (British Institute of International and Comparative Law, 2008). Web site: http://www.stephenmason.eu*

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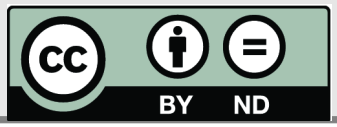

Patentable Subject Matter: The View from Europe

Avi Freeman[a]

(a) Partner in Beck Greener, European and UK Patent and Trademark attorneys and litigators

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"Follow! nay, I'll go with thee, cheek by jowl"[1]

Abstract
This article presents a review of the position regarding the availability of patent protection for computer-implemented inventions (software in particular) in Europe. The specifics of the European Patent Office approach to this, i.e. providing a low threshold for exclusion on grounds of non-patentable subject matter, but not allowing non-technical features to contribute to an inventive step, is contrasted with that in the United Kingdom, where the EPO-derived "contribution approach" still holds. Some comparisons are made with the position in the United States, post Bilski.

1. Introduction

Technology and innovation today look very different from how they looked 30 years ago, never mind centuries ago, when early formal patent systems were being established at the time of Statute of Monopolies 1623.[2] Stained glass windows and salt might have been cutting edge inventions then, but now exactly what counts as an "invention" is of commercial and legal significance in Europe and elsewhere, with parties on all sides having strong and well-rehearsed views. In the area of computer-implemented or software-related inventions, in particular, this divergence of views is apparent.

On the one hand, some software developers and companies feel that patents are an essential tool to protect investment in research and development and thereby encourage innovation. All aspects of proprietary code are to be guarded to the fullest extent possible. In contrast, other companies or organisations adopt an open source approach and may seek to rely on a collaborative and open approach to promote innovation, relying on copyright protection and avoiding patents, and patent thickets especially, also considering the specific statutory exclusions relating to the availability of patent protection for software. Whenever an issue becomes prominent in this area, all arguments are aired. For example, the *amicus curiae* briefs[3] filed at the European Patent Office (EPO) in the lead up

1 Demetrius to Lysander, A Midsummer Night's Dream - Act III. Scene 2. William Shakespeare

2 For a brief history with particular reference to the definition of the word "invention", see the introduction to "The Requirement for an Invention in Patent Law", Justine Pila, OUP

3 Contrast, for example, the submissions of the Irish Free Software Organisation on the one hand, available at

to the recent Enlarged Board of Appeal (hereinafter "the Enlarged Board") opinion on this subject demonstrate the firm views held across the spectrum.

Whatever position is taken on this, the law in Europe and the UK relating to the protection of computer-implemented inventions (and software in particular) has developed over the decades since the European Patent Convention has been in force. In this paper, I will discuss the current position before the EPO regarding the exclusion of certain subject matter from patentability on the grounds that it is not an "invention". To do this, I will refer to the position in the UK, as the development of the law before the EPO has gone hand-in-hand, or perhaps cheek-by-jowl, with that in the UK. Points arising out of the Opinion of the Enlarged Board, *G3/08* issued on 12th May 2010, will be discussed.

I will also briefly comment on the situation in the US, taking into the account the recent Supreme Court decision of *Bilski v Kappos*[4] (hereinafter *"Bilski"*), and trying to identify useful issues in common with (or different from) the situation in Europe.

I will not comment on the various attempts to obtain a European Community regulation on the protection of computer-implemented inventions. Attempts to achieve this have previously failed and, for now, the European patent community has enough on its plate dealing with the changes and development of EPO law in this area. In addition, I will not comment on the law of other national states. For a review of this, see, for example, the paper "Computer Programs As Excluded Patentable Subject Matter", by Brad Sherman.[5]

2. Patentable Subject Matter in the UK and Europe: the Law

2.1 The United Kingdom Patents Act 1977

Jumping straight into the modern era in the UK, we have today the Patents Act 1977 (hereinafter "the Act") and various minor modifications to it, but essentially the substantive law of patents and patentability is as laid down in Sections 1 to 3 of the Act. These define the requirements for novelty, inventive step and, separately, before one even considers these factors, that you have an invention. The term "invention" is not defined.

A list of exclusions is then laid out, which defines a number of categories of things, which are said not to constitute inventions for the purposes of the Act. In other words, things, which someone who may well consider himself an inventor has come up with, but are deemed excluded subject matter.

The relevant sections of the Act are as follows:

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http://documents.epo.org/projects/babylon/eponet.nsf/0/2345317E7EE223B3C1257774004EFBA9/$File/g3-08_amicus_curiae_brief_IFSO_en.pdf (accessed 13.9.11) and those of Silicon Economics, Inc, available at http://documents.epo.org/projects/babylon/eponet.nsf/0/1CA3C0F619E79F93C125777400549249/$File/g3-08_amicus_curiae_brief_Silicon_Economics_en.pdf (also accessed 13.9.11)

4 561 U. S. (2010), [130 S. Ct. 3218 (2010)]

5 Includes a country-by-country summary available from WIPO Standing Committee meeting documents at http://www.wipo.int/edocs/mdocs/scp/en/scp_16/scp_16_ref_scp_15_3-annex2.pdf. See also the article entitled "Developments in German case law regarding "Computer-implemented inventions" and some comparison with EPO practice" by Michele Baccelli, Markus Georg Muller and Thomas B. Koch in CIPA Journal, December 2010, Volume 39, Number 12, pp 719 to 722. It is explained how German case law in this area shares some fundamental features with that of the EPO, i.e. requiring at least some technical elements in a claim so as to avoid exclusion, although stipulating that non-technical features cannot contribute to inventive step.

> *1.-(1) A patent may be granted only for an invention[6] in respect of which the following conditions are satisfied, that is to say -*
>
> *(a) the invention is new;*
>
> *(b) it involves an inventive step;*
>
> *(c) it is capable of industrial application;*
>
> *(d) the grant of a patent for it is not excluded by subsections (2)... below...[7]*

Sub-section 2 provides the following:

> *(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -*
>
> *(a) a discovery, scientific theory or mathematical method;*
>
> *(b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;*
>
> *(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;*
>
> *(d) the presentation of information….[8]*

This is mitigated by the limitation that

> *"…the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such."[9]*

Thus, we have a list of exclusions, which are set to cover the items that are deemed not good subject matter for a patentable invention. However, these exclusions will only apply if the application or patent relates to that thing "as such". The meaning and interpretation of these words have contributed to a significant body of case law over the years since the Act has been in force.

The scope of the section is quite varied and its different parts seem unconnected. Various attempts have been made over the years to identify what, if anything, links these seemingly disparate set of things. In *CFPH L.L.C.'s application*, Mr Peter Prescott QC, sitting as a deputy Judge, considered this point. He said:

> *"When we come to look at the list of excluded items, …and if we pay careful attention, we can notice that they are like a miscellaneous rag-bag. Except superficially, they do not constitute what logicians call a genus, or logical class."*

6 Note that this section does not include the phrase "in all fields of technology". However, given the requirement of Section 130(7) that states that this section is framed so as to have the same effect as the corresponding provisions of the EPC, it is understood to be implicit. See, for example, The CIPA Guide to The Patents Act, 6th Edition, pp 10 and 11.

7 UK Patents Act 1977, Section 1(1)

8 UK Patents Act 1977, Section 1(2)

9 UK Patents Act 1977, Section 1(2)

He goes on to say that they were not all excluded for the same reason. Indeed, he states:

> *"……they were excluded for policy reasons; but the policy may not be at all the same in each case…"*[10]

More recently, in the *Aerotel* decision[11] in the Court of Appeal, Lord Justice Jacob commented in discussing the same point that:

> *"…there is no evident underlying purpose lying behind the provisions as a group – a purpose to guide the construction. The categories are there, but there is nothing to tell you one way or the other whether they should be read widely or narrowly.*
>
> *One cannot form an overall approach to the categories. They form a disparate group – no common, overarching concept, for example, links rules for playing games with computer programs or either of these with methods for doing business or aesthetic creations…."*[12]

2.2 The European Patent Convention

The Act was introduced to replace the Patents Act 1949 so as to give effect to the European Patent Convention (EPC), under which a similar set of provisions exists. Indeed, the UK Patents Act[13] indicates that Section 1 (amongst others) is supposed to have the same effect as the corresponding provisions of the EPC.

Article 52 of the EPC provides the following:

> *"1) European patents shall be granted for any inventions, in all fields of technology[14], provided that they are new, involve an inventive step and are susceptible of industrial application.*
>
> *(2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:*
>
> *(a) discoveries, scientific theories and mathematical methods;*
>
> *(b) aesthetic creations;*
>
> *(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;*
>
> *(d) presentations of information."*[15]

Sub-section 3 then mitigates this effect, just as the corresponding section of the Act does for the exclusions outlined therein. It provides:

> *(3) Paragraph 2 shall exclude the patentability of the subject-matter or activities referred to therein only to the extent to which a European patent application or European patent relates to such subject-matter or activities as such.*[16]

10 [2005] EWHC 1589 (Pat), paragraph 21
11 [2007] RPC 7
12 [2007] RPC 7, paragraph 9
13 UK Patents Act 1977, Section 130
14 The expression "in all fields of technology" was introduced to EPC2000 so as to conform to Article 27 TRIPS Agreement
15 EPC2000, Article 52(1) and (2)
16 EPC2000, Article 52(3)

As can be seen, save for some minor differences, the wording of the Article 52 EPC is the same as that of Section 1(2) of the Act.

2.3 Evolution in the United Kingdom From Merrill Lynch to Aerotel

There is also a string of cases before the Court of Appeal and lower courts in the UK that have led us to the position we are now in. Before presenting a very brief review of a selection of these, it is worth summarising the general method that is used by the UK courts in determining whether or not an invention relates to patentable subject matter (computer programs in particular).

The position adopted by the UK courts is based on what may be called the "contribution approach". An assessment is made by the UK courts (or more normally by an examiner at the United Kingdom Intellectual Property Office (UKIPO) acting in accordance with Practice Notices issued to inform users of the UKIPO practice taking into account decisions of the Courts) to determine whether or not an invention makes a "technical contribution". If it does, then it avoids the exclusions. If it does not, then it does not and the application is refused for failing to relate to an invention. As to what exactly is a "technical contribution", more later.

The string of cases is well known and can be found described in great detail in various cases on this subject. One particularly thorough review is the clearly presented annex to the decision in *Aerotel*.[17]

One of the first cases in the modern era that brought this matter to prominence was the decision of the Court of Appeal in respect of *Merrill Lynch's Application* (1989).[18] This decision brought into the UK the "technical contribution approach" law of the EPO from *Vicom*,[19] discussed below. The application related to a business method for managing stocks, implemented using a computer program.

In *Merrill Lynch's Appn*, Fox LJ said:

> *"…it cannot be permissible to patent an item excluded by s.1(2) under the guise of an article which contains that item -- that is to say, in the case of a computer program, the patenting of a conventional computer containing that program. Something further is necessary. The nature of that addition is, I think, to be found in the Vicom case where it is stated: "Decisive is what technical contribution the invention makes to the known art". There must, I think, be some technical advance on the prior art in the form of a new result (e.g., a substantial increase in processing speed as in Vicom)…"*[20]

This was then qualified with the "rider", that

> *"…a novel and non-obvious improvement to an excluded category does not count as a technical improvement…"*

In other words,

> *"inventive excluded matter could not count as a technical contribution"*[21]

17 [2007] RPC 7 This case is of course one of the cases that played a part in the referral to the Enlarged Board of the EPO, G3/08 to be discussed below.

18 [1989] RPC 561

19 T0208/84 OJ EPO 1987, 14

20 As Jacob LJ says in Aerotel, "Thus it was that this Court adopted the EPO's "technical contribution approach"". [2007] RPC 7, paragraph 84

21 [2007] RPC 7, paragraph 83

So, for there to be a technical contribution as per the law of the UK, there must be some technical contribution that does not fall within excluded subject matter. A contribution, which is merely an advance in one of the areas of excluded subject matter, does not satisfy this test. A claim directed to such an entity will be found bad for lack of technical contribution. This was the UK's way of interpreting what the "as such" statement at the end of Section 1(2) actually means.

Two further Court of Appeal decisions have been handed down in this general subject area. The first, *Gale's Appn*.[22], related to a mathematical algorithm recorded on a Read Only Memory (ROM) chip. The Court of Appeal decided that the invention did relate to excluded subject matter and that

> *"…the claim is in substance a claim to a computer program, being the particular instructions embodied in a conventional type of ROM circuitry, and those instructions do not represent a technical process outside the computer or a solution to a technical problem within the computer…"*

Next, the matter arose again in the case of *Fujitsu Limited's* application.[23] The patent application had been refused by the Examiner at the United Kingdom Patent Office (as it was then called) and appealed by the applicant to the High Court and, subsequently, to the Court of Appeal. The invention in question was summed up by Aldous LJ as follows:

> *"At the heart of the invention is a method for modelling a crystal structure for use in designing inorganic materials in the fields of chemistry and physics. The basic idea utilises a computer programmed so that the operator can select an atom, a lattice vector and a crystal face in each of two crystal structures displayed on the display unit. Upon instruction the computer, using the selected requirements, converts data representing the physical layouts of the two crystal structures into data representing the physical layout of the crystal structure that would be obtained by combining the original two structures in such a way that the two selected structures are superposed. The resulting data is then displayed to give a picture of the combined structure."*

The judge concluded:

> *"I believe that the application is for a computer program as such. … In the present case the combined structure is the result of the directions given by the operator and use of the program. The computer is conventional as is the display unit. The two displays of crystal structures are produced by the operator. The operator then provides the appropriate way of superposition and the program does the rest. The resulting display is the combined structure shown pictorially in a form that would in the past have been produced as a model. The only advance is the computer program which enables the combined structure to be portrayed quicker."*

We now have the decision in *Aerotel,*[24] referred to above. This restates the law as it had developed to that point and arrives at a four-point test for use by the UKIPO when examining applications in this area. The test was suggested by Comptroller (one of the parties to the case) and accepted by the court as a reasonable way to proceed. The test is as follows:

> *"(1) properly construe the claim*
>
> *(2) identify the actual contribution;*

22 [1991] RPC 191
23 [1997] RPC 608
24 [2007] RPC 7

> *(3) ask whether it falls solely within the excluded subject matter;*
>
> *(4) check whether the actual or alleged contribution is actually technical in nature".*[25]

Subsequent to this, Practice Notices were issued by the UKIPO which confirmed that this is the way such matters will be dealt with.

By and large, this is the situation in the UK today, with one or two modifications or embellishments, but fundamentally, without change in substance. Thus, although there have been cases in the Court of Appeal in this area since *Aerotel*, the basic four-point test of *Aerotel* stands. For example, in the recent High Court decision of *Gemstar-TV Guide International Inc and others v Virgin Media Limited,*[26] Mann J said,

> *"The proper approach is plainly the 4 stage test propounded in Aerotel"*[27]

Furthermore, on commenting on the principle of authority he stated,

> *"…A decision of the Enlarged Board of Appeal is apparently awaited in this area, but I have to apply the law as it has been recently laid down in the Court of Appeal in Symbian Ltd v Comptroller-General of Patents [2009] RPC 1, Aerotel v Telco; Macrossan's Application [2007] RPC 7, together with the benefit of a helpful summary of Lewison J in AT & T Knowledge Ventures Ltd [2009] EWHC 343.*

Aerotel, in so far as it considered the issues before the court, was not in itself controversial. However, in the judgement, a number of inconsistencies and apparently irreconcilable conflicts were identified between the respective positions taken by different EPO Boards of Appeal (hereinafter "the Board(s)").

Indeed, during the time that the UK Court of Appeal had been making the decisions discussed above based largely on the original *Vicom* "contribution approach", the law in this area before the EPO had developed quite significantly, as I comment in more detail below. While the EPO was able to easily do this, given the flexibility in its systems of decision making, it must be noted that the UK, on the other hand, is not so flexible, which may explain the seeming divergence between current UK jurisprudence and EPO decisions and the Board opinion. In the recent Court of Appeal case of *Symbian Limited's application,*[28] this is explained by Lord Neuberger giving the judgement of the court, as follows:

> *"…the Court of Appeal is bound by one of its previous decisions unless that previous decision is inconsistent with a subsequent decision of the House of Lords (in which case, the previous decision cannot be followed), is inconsistent with an earlier Court of Appeal decision (in which case the court may choose which previous decision to follow), or can be shown to have been arrived at per incuriam (i.e. without reference to a relevant statutory provision or other authority) …*
>
> *…Jacob LJ, giving the judgment of the court, held that this court was also free to depart (but not bound to depart) from one of its previous decisions on a point in the field of*

25 [2007] RPC 7, paragraph 40

26 [2010] RPC 10, paragraph 34. The decision has recently been upheld by the Court of Appeal (see [2011] EWCA Civ 302) although the issue of excluded subject matter did not arise on appeal since the two patents (out of the three originals) that were the subject of the appeal were found to lack novelty and so excluded subject matter never arose.

27 [2010] RPC 10, paragraph 35

28 [2009] RPC 1

> *patent law if satisfied that the Board have formed a settled view on that point, which differs from that arrived at in that previous decision. At [48], Jacob LJ made it clear that the right to depart from a previous decision only arose if the "jurisprudence of the EPO" on the point at issue was "settled", and that, even where that was the case, this court was "not bound to do so": for instance in "the unlikely event" that it thought the jurisprudence was plainly unsatisfactory."*[29]

In other words, there is an acknowledgement that the decision of the (EPO) Board will have had some influence, especially if it has a "settled" view, but the ultimate guidance to a judge in the UK Patents Court (and indeed to an examiner at the UKIPO), must come from UK authority.

In conclusion, I believe that the law in the UK is thus well-established on this point thanks to a consistent and transparent sequence of cases. The test applied is the four-point test of Aerotel that seeks to establish whether or not a technical contribution is provided. In other words, the approach has been and is to look at the invention, sometimes beyond the language of the claims, and decide if the requisite "technical contribution" is there.[30]

There are advantages and disadvantages to such an approach. Whilst clearly, underlying a claim and its scope is the precise wording that the patentee chooses, in decisions of the High Court on matters relating to infringement or validity, it is the language of the claims that determines the scope of protection (interpreted as necessary). The courts in the UK generally take the view that what matters is the language in the claims by which the patentee has chosen to define his invention, even when with hindsight it appears that an infringer's product has taken the essence of an invention as described in a patent.

However, when it comes to determining whether or not a patent application relates to "an invention", the wording of the claims seems not always to take the highest of positions in factors considered and ruled on by the courts. No doubt there are reasons why the difference in approach is taken. When considering novelty and inventive step, what is being considered is the extent of the exclusion as defined by the claims[31] that is to be respected by third parties. In contrast, whether or not something is an invention under the Act, Section 1 is perhaps more intrinsic to its nature and, hence, the language chosen for inclusion in the claims by the patentee is not quite of the same importance. "Invention" is, after all, not defined in the Act or the EPC.

It may take a significant number of court decisions for the UK law to change so as to be consistent with the current situation at the EPO, following changes that have taken place concurrently, as commented below.

2.4 Evolution Before the EPO: from Vicom Onwards

Turning to the EPO now, as explained above, the 1987 *Vicom* decision[32] as mentioned above, is the first significant milestone. There have been many trajectories and changes that have taken place in the law on this area before the EPO since *Vicom*, but, for the purposes of this paper, I will concentrate on the main issue, which is the creation and adoption of, followed by the departure from, the

29 [2009] RPC 1, paragraph 33

30 See for example, in Fujitsu's Application, where Aldous LJ, on commenting on Fox LJ's judgement in Merril Lynch's Application states "…*By that statement Fox LJ was making it clear that it was not sufficient to look at the words of the claimed monopoly. The decision as to what was patentable depended upon substance not form*…."

31 UK Patent Act 1977, Section 2 in combination with Section 125(1)

32 T208/84 OJ EPO 1987

"contribution approach" and the subsequent apparent conflict with the law in the UK. This conflict contributed to the recent referral to the Enlarged Board.

2.4.1 Vicom – "The Contribution Approach"

In *Vicom*, the invention in question related to a method of digital image processing using "operator matrices" for convolving with a data array representing an image.

The Board concluded that:

> *"…Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art…."*

The contribution approach was thus established, and it was followed in many cases, including, for example, T 121/85 and T 38/86. In deciding if a claim is directed to excluded subject matter or not (does it escape the "as such" clause) before the EPO, a determination is required as to the "technical contribution" made to the known art.

2.4.2 The Demise of the Contribution Approach

The contribution approach lasted for some time before being rejected. A fundamental objection to it can be summarised as that if one has to consider a "contribution" when deciding if a claim relates to excluded subject matter, then you are in the realm of comparing the invention to the prior art (a "contribution" must be made to something); in other words, an area that should be reserved for considerations of novelty and inventive step.

A number of cases from approximately 1998 onwards (e.g. *IBM*[33], *Pension Benefits*[34]) departed from the contribution approach to varying extents, which have, more or less, brought us to the current position before the EPO. In summary, this position is that any hardware will be enough to overcome the low threshold for patentable subject matter, but that inventive step can only come from the technical features of a claim. If then the claim is essentially, for example, software that when run on a computer controls the computer to do business a new way, although the use of a computer and the internet will get you over the hurdle of patentable subject matter, the fact that there is nothing technically new and inventive means that the claim will fail for lack of inventive step.

Drawing again on the summary of case law provided in *Aerotel*, Jacob LJ explains how for some time the EPO had been happily applying the contribution approach…

> *"…But then the EPO took a different course or courses, a course or courses relied upon by both appellants here. A trilogy of cases of particular importance fall for discussion, Pension Benefits (2000), Hitachi/Auction method (2004)[35] and Microsoft/Data Transfer (2006).[36] They represent the most important of the latest decisions of the Boards in this field…."*

33 T1173/97
34 T931/95
35 T258/03
36 T424/03

In *Pension Benefits*, the Board indicated that the mere presence of technical means in an apparatus claim is enough to remove it from the exclusion from patentability. In *Hitachi/Auction Method*, this was also extended to cover method claims that refer to some technical means.

In *Microsoft Data Transfer*, considering the difference between different formulations of computer related claims, the Board indicated that:

> *"…the Board holds that the claim category of a computer-implemented method is distinguished from that of a computer program. Even though a method, in particular a method of operating a computer, may be put into practice with the help of a computer program, a claim relating to such a method does not claim a computer program in the category of a computer program…"*

In view of the differences between some of these decisions, a referral was made by the President of the EPO to the Enlarged Board, discussed below. However, before discussing in detail the decision *G3/08*, the 1997 *IBM* decision is worthy of mention, since it gave us an important tool used by the EPO today in assessing such cases. In this decision, the determination was made that a computer program is not excluded subject matter if it is capable of providing a "further technical effect", when run on a computer, over and above the normal interaction of the program with the computer.

The Board stated,

> *"…It is thus necessary to look elsewhere for technical character in the above sense: It could be found in the further effects deriving from the execution (by the hardware) of the instructions given by the computer program. Where said further effects have a technical character or where they cause the software to solve a technical problem, an invention which brings about such an effect may be considered an invention, which can, in principle, be the subject-matter of a patent."*

The Board went on to indicate that

> *"The Board takes this opportunity to point out that, for the purpose of determining the extent of the exclusion under Article 52(2) and (3) EPC, the said "further" technical effect may, in its opinion, be known in the prior art. Determining the technical contribution an invention achieves with respect to the prior art is therefore more appropriate for the purpose of examining novelty and inventive step than for deciding on possible exclusion under Article 52(2) and (3)."*

The contribution approach, which was introduced so easily in *Vicom*, was dispatched with similar verbal flourish.

Referring briefly now back to *Aerotel*, Jacob LJ produced a detailed analysis of the case law and statute and demonstrated how it is clear that there are decisions taken by Boards that are "different" and that in the interests of clarifying these matters, which relate to a highly commercially significant area, the EPO's highest authority, the Enlarged Board, should step in to clear the air.

3. The EPO Today: Opinion G3/08 of the Enlarged Board of Appeal and Some Current Cases

There has been historical disagreement between the judges of some member countries (e.g. the UK) and the EPO Boards. As mentioned above, this has been mentioned in various decisions of the respective courts in different countries. Jacob LJ in the Aerotel judgement acknowledges that there is

no means for a referral to be made to the Enlarged Board via a decision of a court of a member state (no matter how high). However, there is a clear indication that, in the view of the court, the approach followed by the EPO is not correct.

On the other side, in a subsequent EPO decision, *Duns Licensing Associates*[37], as well as dealing with the appeal in question, a response was made to Jacob LJ's suggestions in Aerotel. The Board says:

> *"the "technical effect approach" endorsed by Lord Justice Jacob in the Aerotel/Macrossan judgement (see paragraphs Nos. 26(2) and 38) …is not consistent with a good-faith interpretation of the European Patent Convention in accordance with Article 31 of the Vienna Convention on the Law of Treaties of 1969.*[38]*"*

It appears that the Board was responding to the suggestion of Jacob LJ in Aerotel that the matter be referred to the Enlarged Board.

This exchange was summarised by Neuberger LJ in *Symbian*[39] as follows:

> *"…This Court in Aerotel (e.g. in [24] and [25]) suggested that it might be adopting a somewhat different approach from that taken by the Board in some of its decisions. Similarly in Duns (e.g. in [12 and 13]) the Board indicated that it was taking a different approach from that adopted by the Court of Appeal. Indeed, each tribunal was rather deprecatory about the approach of the other – see, for instance, [25] of Aerotel (where the approach of the Board in different applications was described as "mutually contradictory") and [12] of Duns (where it was suggested that the approach adopted in Aerotel was "not consistent with a good-faith interpretation of the [EPC]")…."*

Eventually, a referral[40] was made and Opinion G3/08 of the Enlarged Board was issued on 12th May 2010.

3.1The Structure of the EPO

A few preliminaries about the structure of the EPO will be helpful before going into the specific details of this Opinion. The EPO has a number of sections and divisions that are charged under authority of the EPC itself to execute certain tasks.[41] These include the receiving section,[42] the search divisions[43] and the examining divisions[44,] which are all responsible for the stages in the processing of a European application (as their names would suggest) from filing to grant.

On top of this, a judicial body of the EPO is made up of its Boards[45,] which come in various guises, including both "technical" and "legal". When a decision is made by the receiving section or one of the divisions mentioned above, the applicant normally has the right of appeal to a Board. The

37 T154/04
38 T0154/04, paragraph 12
39 [2009] RPC 1
40 OJ EPO1 2009, pp32 and 33. The questions referred are published here together with an invitation for written statements by 3rd parties by end of April 2009.
41 Article 15 EPC2000
42 Article 16 EPC2000
43 Article 17 EPC2000
44 Article 18 EPC2000
45 Article 21 EPC2000

decisions of the Boards are almost always final. In practice and on a day-to-day basis, clients are advised that the final word on a matter before the EPO is as heard before one of the Boards.

There is however higher authority and this is the Enlarged Board.[46]

The function of the Enlarged Board is enshrined in the EPC as follows:

> *(1) In order to ensure uniform application of the law, or if a point of law of fundamental importance arises:*
>
> > *(a) the Board of Appeal shall, during proceedings on a case and either of its own motion or following a request from a party to the appeal, refer any question to the Enlarged Board of Appeal if it considers that a decision is required for the above purposes. If the Board of Appeal rejects the request, it shall give the reasons in its final decision;*
> >
> > *(b) the President of the European Patent Office may refer a point of law to the Enlarged Board of Appeal where two Boards of Appeal have given different decisions on that question.*
>
> *(2) In the cases referred to in paragraph 1(a) the parties to the appeal proceedings shall be parties to the proceedings before the Enlarged Board of Appeal.*
>
> *(3) The decision of the Enlarged Board of Appeal referred to in paragraph 1(a) shall be binding on the Board of Appeal in respect of the appeal in question.*

A first point to note is that in the preamble to the article, it is clearly stated that the purpose of the Enlarged Board is not simply to provide another forum for disgruntled patentees or for opponents to have another opportunity to argue the merits of their case because the first Board did not agree with them. Rather, it is policy driven in that its function is the "uniform application of the law".

Indeed, in the document entitled "*Basic proposal for the revision of the European Patent Convention*", drawn up by the EPO Administrative Council in October 2000, which was to lead to the drafting and bringing into effect of EPC2000, the current version of the EPC, it was stated with reference to Article 11 that

> *"It is expected that the involvement of national judges in important cases before the Enlarged Board will continue in future to provide valuable input, to help bring about international recognition of these decisions and, in so doing, to further the harmonisation of patent case law in Europe."*

Article 11 EPC itself specifically provides that:

> *"The Administrative Council, after consulting the President of the European Patent Office, may also appoint as members of the Enlarged Board of Appeal legally qualified members of the national courts or quasi-judicial authorities of the Contracting States, who may continue their judicial activities at the national level..."*[47]

Thus, clearly the EPO's Enlarged Board is a significant legal body concerned with the uniformity of substantive patent law both before the EPO and, through its wider effect and influence, on national

46 Article 112 EPC2000
47 Article 11 EPC2000

courts too (albeit indirectly).

The Enlarged Board does not provide an additional level of jurisdiction in the classical sense. Rather, it will rule when the *case law* of the Boards becomes inconsistent or when an important point of law arises.

In keeping with these aims and goals, the ways in which a matter can come before the Enlarged Board are restricted and narrowly interpreted. Typically, it is the Boards themselves and the President of the EPO that can refer a question to the Enlarged Board. In the first case, the Enlarged Board issues a "Decision",[48] while in the latter case it issues an "Opinion."[49] In addition, in some rare circumstances, a party adversely affected by a decision of a Board can refer a matter to the Enlarged Board.[50]

3.2 Opinion *G3/08*

If ever it could be said of a decision that the reasoning is more significant than the outcome, then this is the defining one. As I will explain below, the end result of the decision was that the Enlarged Board effectively refused to answer the questions put to it. It is not strictly within the remit of the Board actually to refuse to decide a case. What they must do is examine the grounds for admissibility to it and, if these are not found to be satisfied, the decision is deemed inadmissible. The reasoning behind such a refusal is often extremely instructive.

3.2.1 The Questions

Before discussing in some detail the Opinion of the Enlarged Board, we must first look at these questions that were referred. These questions (followed by a brief discussion of each and the decisions that gave rise to them) are as follows:

> ***Question 1***
>
> *Can a computer program only be excluded as a computer program as such if it is explicitly claimed as a computer program?*[51]

The asserted difference was between decisions T1173/97,[52] making no distinction between categories of claims, especially between computer-implemented claims and computer program claims, and T424/03,[53] making a distinction between these two categories.

> ***Question 2***
>
> *A) Can a claim in the area of computer programs avoid exclusion under Art. 52(2)(c) and (3) merely by explicitly mentioning the use of a computer or a computer-readable data storage medium?*
>
> *B) If Question 2(A) is answered in the negative, is a further technical effect necessary to*

48 Art 22(1)a EPC2000
49 Art 22(1)b EPC2000
50 Art 22(1)c EPC2000. In December 2007 EPC2000 came into effect and with it the availability of "a petition for review" of a decision of a Board may be filed on limited grounds, but this is not strictly relevant to the present discussion.
51 Section 3.1, Referral G3/08
52 Emphasis was placed on the function of the program rather than the manner in which it is claimed.
53 Emphasis was instead placed on the manner in which the computer program is claimed.

> *avoid exclusion, said effect going beyond those effects inherent in the use of a computer or data storage medium to respectively execute or store a computer program?*[54]

The asserted difference that gave rise to this question was between decisions T1173/97 and T258/03. As explained above, under T1173/97, computer programs are methods, and, in order to have a technical character, they must demonstrate a "further technical effect". In contrast, under T258/03, a method acquires a technical character simply by involving technical means.

Question 3

> *A) Must a claimed feature cause a technical effect on a physical entity in the real world in order to contribute to the technical character of the claim?*
>
> *B) If Question 3(A) is answered in the positive, is it sufficient that the physical entity be an unspecified computer?*
>
> *C) If Question 3(A) is answered in the negative, can features contribute to the technical character of the claim if the only effects to which they contribute are independent of any particular hardware that may be used?*[55]

The asserted difference, was between T125/01 and T424/03 on the one hand and T163/85 and T190/94 on the other. Under the latter, a technical effect on a physical entity in the real world is required so as to avoid the exclusions discussed above, whereas under the former, the technical effects can be confined to the computer programs (and computers in which they run) themselves.

Question 4

> *A) Does the activity of programming a computer necessarily involve technical considerations?*
>
> *B) if Question 4(A) is answered in the positive, do all features resulting from programming thus contribute to the technical character of a claim?*
>
> *C) if Question 4(A) is answered in the negative, can features resulting from programming contribute to the technical character of a claim only when they contribute to a further technical effect when the program is executed?*[56]

The asserted difference was between decisions that related to the act of programming a computer. According to some, a programmer's activity, i.e. writing a computer program, falls within the exclusions of Article 52(2)(c) (T833/91, T204/93, and T769/92)[57], whereas according to others (T1177/97 and T172/03)[58] , it does not.

3.2.2 "Different Decisions"

As shown, giving rise to each of the questions were a pair (or sets) of decisions identified by the President, which were said to be "different decisions". However, as mentioned above, two decisions, although reaching different conclusions on different legal grounds, are not, in the eyes of the EPO,

54 Section 3.2, Referral G3/08
55 Section 3.3, Referral G3/08
56 Section 3.4, Referral G3/08
57 These decisions considered computer programming to be a "mental act" undertaken by a programmer.
58 In contrast to the previous set of decisions, these two decisions both essentially considered the act of programming a computer to be technical or "involve technical considerations".

necessarily "different". Accordingly, to summarise the Enlarged Board's Opinion, each of Questions 1 to 4 was deemed inadmissible.

The decisions were clearly different in a normal dictionary definition sense of the word; the 18-page letter of referral written by the President of the EPO to the Chairman of the Enlarged Board of Appeal, Mr Peter Messerli, explains this clearly and explicitly. However, the EPO's Enlarged Board is not primarily driven by dictionary definitions of words. Rather, it is driven by the policy and statutory aims laid down for them. In other words, reading between the lines (and based on my own interpretation), if, in the view of the Enlarged Board, the patenting community at large was in any doubt as to how a decision would be made by an Examining Division when considering subject matter of this nature, then it is likely that the Enlarged Board would have come down one way or the other to answer the questions put to it. In the end, it did not, which leads us to conclude that the Enlarged Board didn't consider there were sufficient differences or inconsistencies to warrant an opinion for the "uniform application" of the law.

The Enlarged Board openly acknowledged that there was a difference between some of the decisions mentioned in the referral. For example, the opinion included the following:

> *"Thus finally the Board had arrived at a conclusion which clearly contradicted the position (or rather one of the positions) taken in T1173/97. T1173/97 declared, "Furthermore, the Board is of the opinion that with regard to the exclusions under Article 52(2) and (3) EPC, it does not make any difference whether a computer program is claimed by itself or as a record on a carrier ... ," (Reasons, point 13), whereas T424/03 stated, "The subject-matter of claim 5 has technical character since it relates to a computer readable medium, i.e. a technical product involving a carrier (see decision T258/03 – Auction method/Hitachi ...)","*[59]

Surely, you might think, this must mean that the decisions referred to are "different". Not different enough, it seems.

The Board explained:

> *"There was a period of approximately seven years between the issuance of the two decisions, a period which, although not very long in legal terms, is nonetheless compatible with the notion of development of the case law."*[60]
>
> *"Development of the law is an essential aspect of its application, whatever method of interpretation the judge applies, and is therefore inherent in all judicial activity.*
>
> *Consequently, legal development as such cannot on its own form the basis for a referral, only because case law in new legal territory does not always develop in linear fashion, and earlier approaches may be abandoned or modified.*
>
> *Otherwise the "different decisions" feature of Article 112(1)(b) EPC would lose its meaning. While the development of the law may superficially appear to give rise to different decisions within the meaning of that provision, on its own it cannot justify a referral to the Enlarged Board."*[61]

Next, the vexing question of "what does "technical" actually mean"? Again, no answer from the

59 G3/08, paragraphs 10.7.1 and 10.7.2
60 G3/08, 10.9
61 G3/08, 7.3.1

Board. They stated:

> *"We do not attempt to define the term "technical". Apart from using this term in citing the case law, in what follows the Enlarged Board only makes the assertions that "a computer-readable data storage medium" and a cup have technical character and that designing a bicycle involves technical considerations, in order to be able to explore the consequences of that case law. It is to be hoped that readers will accept these assertions without requiring a definition of exactly what falls within the boundaries of "technical". "*[62]

The Board was clearly wary of making a rod for its own back (and for those of applicants and other Boards in the future).

The lack of definition of "technical" from the Enlarged Board may not be prejudicial in practice. Although a clear and concise definition of this term would have been well received by some in the software and patent communities, as it seems to be central to the analysis of these matters, in practice, advisors and practitioners are, largely, able to reach repeatable and reliable conclusions on these matters.[63] Furthermore, given the nature of the word and the world, it is certainly possible that any acceptable definition arrived at today will seem out of date in ten years' time.

However, it could be argued that this is *not* a good reason *not* to define such a crucial term. Much of the reasoning of the Enlarged Board as to why the referral was ultimately inadmissible relates to the fact that case law changes and is not a static entity. Surely then, by this same logic, it could be argued, that the definition of the word "technical" could simply be updated, once/if it became clear that the definition was inadequate. This would not cause two decisions (in which the different definitions appeared) to be "different", but would simply represent a development of the law as an essential aspect of its application.

On a final point, irrespective of my comments that the decision of the Enlarged Board was not particularly surprising, other serious objections have been raised against the reasoning of the Enlarged Board in G3/08. In particular, it has been submitted that in refusing to answer the questions, the Board acted against the provisions of the Vienna Convention.[64]

3.5 Some Examples of Current EPO Practice

This is then the way the law stands at present in Europe, and we can see it in the way examination is conducted by Examining Divisions of the EPO and, by extension, by the way decisions of Boards consider these matters. For an up-to-date exposition of this, I now discuss two recent unexceptional decisions of the EPO Boards.

3.5.1 T1225/10 Nintendo Co Ltd

The first decision is, *T1225/10 Nintendo Co Ltd*, related to EP07106962.9, which was an application for a patent in the area of gaming systems. The invention related to a video game and the control of characters in the game. Characters are controlled to move amongst objects and interact with them, e.g. by striking them.

62 G3/08, 9.2

63 As much as on other issues of substantive law.

64 Pila, Justine, Software Patents, Separation of Powers, and Failed Syllogisms: A Cornucopia from the Enlarged Board of Appeal of the European Patent Office (May 1, 2010). Cambridge Law Journal, Forthcoming; Oxford Legal Studies Research Paper No. 48/2010. Available at SSRN: http://ssrn.com/abstract=1612518.

In fact, in the independent claims there were two technical features that, in the view of the Board, provided novelty. These were: first, the storage of a second data field, in which a character can be located, being made up of objects and being identical to a first field but rotated relative to it; and second, that contact direction determination is based on contact points on the player and not on an object which is struck.

As these solved different and unrelated problems, the inventive step analysis conducted by the Board was a parallel exercise in that two unrelated objective technical problems were identified starting from the closest prior art. The Board found on the facts that one of these inventions (contact direction determination based on contact points on the player) was inventive, while the other one (storage of a second data field) was not.

Interesting though this is, the main point of relevance here is the discussion regarding excluded subject matter. The Board states in Section 4 entitled "Technical Nature":

> *"Implementation of the previously mentioned game rules - inherently non-technical subject-matter excluded under Article 52(2)(c) EPC - is in the form of a storage medium storing a game program that controls display and game data processing (claim 1) on the one hand, and by corresponding means of the game apparatus (claim 8) on the other. In either case implementation involves technical means so that, following the approach of T931/95 (OJ EPO 2001, 441) and T258/03 (OJ EPO 2004, 575), the claimed storage medium and game apparatus are technical, Article 52(1) EPC."*

In other words, since the subject of the application uses technical means, it is an "invention" insofar as the requirements of Article 52 are satisfied.

The Board then goes on in Section 6.1 to consider inventive step and says:

> *"The invention of claims 1 and 8 is "mixed" as it has both non-technical aspects (relating to the game rules) and technical aspects (relating to their implementation). In assessing inventive step of such a "mixed" invention the Board adopts the approach as set out in T1543/06 (Gameaccount), reasons 2, which is based foremost on T641/00 (OJ EPO 2003, 352). Thus, only those features that contribute to technical character are to be taken into account when assessing inventive step."*

This decision has been issued since *G3/08* but did not even refer to it. This may have been due to the timing of the hearing and prosecution of the appeal or because all *G3/08* did was to confirm that the position before it was clear enough so that no further substantive comment was needed from it. Only four decisions were referred to by the Board, but these decisions are themselves the product of years of evolution and change and so represent the current EPO consensus on this matter.

The Board then continued further (my emphasis added):

> *"However, the mere technical implementation of something excluded (game rules as in the present case, for example) cannot form the basis for inventive step.* ***Decisive is how excluded subject-matter is technically implemented, and whether that implementation is obvious in the light of the prior art.*** *As explained in reasons 2.7 to 2.9 of T1543/06, such a consideration focuses on any* ***further technical effects*** *of the implementation of the excluded subject-matter over and above those inherent in the excluded subject-matter itself."*

In other words, what they will still look for is a further technical effect, and not be too concerned if

the implementation of the invention includes excluded subject matter, just so long as some further technical effect is provided.

This recent example is of course but one decision on the subject issued since the Enlarged Board made their pronouncements in *G3/08*. This decision is by no means a last word on the subject (as no decision of a Board can be), but it does show the way the EPO quite easily and systematically proceeds through these tricky waters. What is more, applicants, when attending this hearing and handling the prosecution of the application, would have had no doubt as to the rationale and approach that the Board would have taken. This, above many other considerations, may be the reason as to why the Enlarged Board felt it unnecessary and not possible under the provisions of the EPC to answer the questions raised under *G3/08*.

3.3.2 T0174/09 Lucent Technologies Inc.

The second example I will consider is *T0174/09*. This decision relates to an application in which the invention related to a telephone, including a speed dial memory and a "a speed dial updating unit", which was arranged to automatically update the speed dial memory based on calling history. A "score keeping unit" was provided to maintain a count of the number of calls to each outgoing telephone number. The nub of the invention was that the speed dial updating unit set a threshold, against which a count maintained by the score keeping unit was compared. The threshold was based on at least one of a measure of time and a number of calls.

This claim was found to lack novelty; so, the applicant's three auxiliary requests were then considered.

As the decision states:

> *"…Claim 1 of each auxiliary request differs from claim 1 of the main request only by its last feature, which reads as follows: "wherein the threshold is based on both a measure of time and a count of a number of calls" (first auxiliary request), "wherein the threshold is based on a measure of time during which the score keeping unit (113) records a count of a number of calls" (second auxiliary request), and "wherein the threshold is based on the amount of call time for each outgoing telephone number" (third auxiliary request). …"*

The Board dismissed the appeal indicating that the distinguishing feature, i.e. "*any criterion as to whether a called telephone number is considered as a candidate for the speed dial memory is of a subjective nature and is therefore a* **non-technical decision at the free disposal of the skilled person**…*Thus, claim 1 of each of the auxiliary requests lacks inventive step*."

Why something that is of a "subjective nature" need necessarily be "non-technical" is not expanded on (perhaps though because it is done by an individual). However, the EPO's method for dealing with such inventions, whether right or wrong, appears to be clear.

4 Some Thoughts on Bilski

Having been through the positions in the EPO and UK in some detail now, let us turn to look briefly at *Bilski* and some parallels or differences that exist between the US system on the one hand and the EPO and UK systems on the other hand, as regards patentable subject matter.

4.1 No Specific Guidance...

The Supreme Court's decision in *Bilski*, has been written about widely, and, as a European attorney, I will not comment in detail on its merits. Whilst it was felt that it was useful in concluding that the "machine or transformation test" is not the exclusive test to be applied, it has been noted that no guidance was given by the Supreme Court as to how to determine patent eligibility when the test is not satisfied.[65] Indeed, some have viewed it as a missed opportunity to provide clarity from the highest court as to the delineation of the boundaries of patentable subjection.[66]

One cannot help but wonder if in fact the absolute clarity sought is somewhat of a mirage. Even in places like, say, the UK, where these subjects have been explored in great detail and we have a defined test[67], although helpful, there is still always a judgement call to be made as to how to answer the four questions. On balance, however, having a defined and clear procedure and set of rules as to how a determination will be made must be considered preferable.

4.2 ...But Some Similarities of Approach

There are plenty of US-based parties on both sides of the argument as to the merits of business method patents, and the arguments on both sides are well rehearsed. The Bilski decision was controversial by the standards of such an esoteric area of law. Indeed, it even has reached the public at large. The Washington Post commentator Rob Pegoraro commented:

> *"The Supreme Court had an easy call to make in a patent-law case and took the easy way out -- leaving problems with software and business-method patents for another court or Congress to solve…..The case … involved an infuriating sort of intellectual-property overreach."*[68]

The decision is interesting as it reflects some differences and also possibly some similarities between aspects of US and European patent law. It has long been a gripe of applicants in Europe that the differences between the practice of different offices do little to promote innovation and technological development and much to line the pockets of lawyers. Clearly the system has ultimately to serve its users. If the relationship between the system and its users the is perceived to break down, in my opinion this would be undesirable.

On a reading of the *Bilski* decision, I find a degree of common purpose and understanding between the EU and the US as regards the patent processes relating to software whilst, not suggesting they are the same.

First, Kennedy J states:

> *"Section 101 is a "dynamic provision designed to encompass new and unforeseen inventions""*[69]

This brings to mind the Enlarged Board's refusal to define "technical". Whilst we might like to know what they think it means, any definition of such a word, and one which could have such effect on the

65 Bilski: A "Flipped Vote And Then A Damp Squib", Richard H. Stern, EIPR Vol 33, Issue 2, 2011, pp115 - 122

66 "Patentable Subject Matter in Bilski v Kappos, 130 S. Ct. 3218 (2010)", Jad Mills, Harvard Journal of Law and Public Policy, January 1st 2011. In pointing out the missed opportunity, the author in fact goes further and criticises the Court arguing that Justice Kennedy "…effectively precluded the Federal Circuit from articulating any categorical rule that would provide true clarity, and instead invited the Federal Circuit to address these issues in a case by case manner".

67 The four point test of Aerotel.

68 Online Washington Post, June 28, 2010.

69 Bilski, Opinion of Kennedy J, Section II.B.2

potential scope of patentable materials, will be difficult if the risk of excluding future, as yet unforeseen, inventions is to be avoided.

He continues, stating that even if a business method fits into the statutory definition of a "process", that does not mean that an application claiming that method should be granted[70]. It must also satisfy the requirements of (inter alia) novelty and non-obviousness.

This resonates with the EPO's view on such matters that just because an application relates to an "invention", does not mean it is patentable, since it must still satisfy the requirements of novelty and inventive step. See, for example, the discussion above in Section 2.4.2 regarding the demise of the Contribution Approach. The EPO of course goes further in requiring the technical effect and technical solution to a technical problem, to the extent that non-technical subject matter is deemed old and incapable of contributing to an inventive step.

Stevens J continued along a similar vein in some ways. In the introduction[71] to his judgement, he states

> *"…although a process is not patent-ineligible simply because it is useful for conducting business, a claim that merely describes a method of doing business does not qualify as a "process"".*

This could almost have been taken out of a decision of an EPO Board.[72]

4.3 Some Developments since *Bilski*

Furthermore, the *Bilski* decision seems to have emboldened the lower courts in this area. In the recent decision of *CLS Bank International v Alice Corporation Pty. Ltd,* the US District Court found four[73] patents invalid for being directed to unpatentable subject matter. What is more striking is that the court granted **summary** judgement in full to the plaintiff. The court quoted Rule 56 of the Federal Rules of Civil Procedure that stipulates that summary judgement shall be granted:

> *"If the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgement as a matter of law".*[74]

Drawn out litigation helps nobody in the long run, generating costs and delay, but it seems quite remarkable to conclude in a case like this that there is **no genuine dispute** as to **any material fact**. Continuing, the court discusses what constitutes an "abstract idea" and whether or not it was a good idea to try and produce a definition of one. The court stated:

> *"there is no clear definition of what constitutes an abstract idea; instead, courts analogize from the standards etched out by the cases just discussed. As the Federal Circuit recently acknowledged, "the Supreme Court did not presume to provide a rigid formula or definition for abstractness" Research Corp. techs. V. Microsoft Corp., 627 F 3d 859, 868 (Fed. Cir 2010) (citing Bilski II, 130 S. Ct. at 3228)"*[75]

70 Bilski, Opinion of Kennedy J, Section II.C.2

71 Bilski, Opinion of Stevens J

72 See for example, Koch and Sterzel/X-ray method for optimum exposure (1987) T 26/86

73 US-A-5,970,479, US-A-6,912,510, US-A-7149720 and US-A-7,725,375 all directed to what the patentee described as "an innovative trading platform" which entailed a "computerised system for establishment, settlement, and administration of financial instruments…", CLS Bank International v Alice Corporation Pty. Ltd, pp 2., 9th March 2011

74 CLS Bank International v Alice Corporation Pty. Ltd, Section II.A, quoting Fed. R. Civ. P. 56(a), pp 11

75 CLS Bank International v Alice Corporation Pty. Ltd, Section II.B, pp 17

Note, as a further example, the similarity here with the view of the Enlarged Board as to the merit in producing a rigid definition of "technical". The terms "technical" and "abstract" approach the problem from different perspectives. In the US, the applicant or patentee is looking to fall outside the definition (of "abstract"), whereas in the UK and Europe the opposite is true: the applicant or patentee is looking to fall inside the definition (of "technical"). However, it appears to me that the USPTO and the US courts are struggling with issues that we have been struggling with in Europe for many years. Whilst not having the statutory mentions of "technical solution"[76] and the like, the issues are nevertheless close.

Determining exactly what sort of subject matter people should be able to obtain patents for is difficult. Computer software and business methods are clearly not squarely in the area that legislators would originally have had in mind when considering suitability for patent protection. Hence, they can cause problems on both sides of the Atlantic (and the English Channel). Indeed, it has even been suggested that given the "specific features and requirements" of computer software, it must be queried as to whether or not the creation of a "unique or *sui generis*" right might even be appropriate.[77] I think, in general though, the system we have in Europe and the UK works, despite the differences discussed above. It would, however, of course be preferable to have a greater degree of uniformity.

5. Conclusions

In conclusion, although tests and the provisions in the EPO and UK may be unpopular with some, one of the important aspects of any patent system, not just for potential software-related inventions, is to provide certainty for third parties and for users of the system. This desire for certainty features in diverse areas of patent law, since the patentee is being given something valuable by the government. On both sides of the central debate regarding the nature of legal protection available for software, certainty is surely preferable to the alternative. I have described here now the way these matters are considered is different as between the EPO and UK: before the EPO the question will almost always come down to a matter of an inventive step and determination as to whether there is an inventive step taking into account the features that contribute to technical character. In the UK, the determination is still based on the original *Vicom* decision, as modified and applied over the years by the UK courts.

However, the disagreement between the UK and the EPO should not be allowed to obscure the fact that, on a practical level, there is in fact a degree of consensus about - ultimately - what is and is not patentable, even if the way the two offices get there is very different.

Although there is clearly a conflict (in fact, direct contradictory positions) between various Technical Board of Appeal decisions on which the President's referral was based, it remains that practitioners before the EPO representing applicants from all over the world know the principles that will be applied, the tests and factors that will be considered and the manner in which decisions will be taken by Examining Divisions and/or Boards. I believe that the chances of success, on the grounds of patentable subject matter, as between the UK and the EPO, would be very similar, even if under the EPC you will fail for lack of an inventive step, whereas in the UK, you will fail for unpatentable

76 EPC2000, Rule 43(1), "…The claims shall define the matter for which protection is sought in terms of the technical features of the invention…"

77 Protecting Computer-related Inventions in Europe: The Need for Domestic and International legal Harmony, Carole Deschamps, EIPR Vol 33, Issue 2, 2011, pp103-114

subject matter.

About the Author

Avi Freeman *is a partner in Beck Greener, a UK-based firm of European and UK patent and trademark attorneys and litigators. The author has a background in physics and specialises in dealing with patents and patent applications in the area of computer-implemented inventions (hardware and software) before both the UKIPO and the EPO.*

Open source licensing notices in Web applications

Arnoud Engelfriet [a]

(a) Associate, ICTRecht Legal Services.

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Abstract
More and more applications are moving to the Web. Often, such applications present a combination of client- and server-side code. Almost all FOSS licenses require an explicit notice in the code regarding the license applicability and sometimes even the entire license text. However, for Web applications this approach can add significant performance penalties. In this article I discuss the theory and practice of various approaches towards this issue.

Keywords
Law; information technology; Free and Open Source Software; Web applications

Linking to open source licenses

Open source software is freely available for anyone, including source code. The license grants everyone permission to adapt or improve the source code, for example to fix errors, to make a more efficient implementation or to add completely new functionality. The software may also be copied and distributed freely, even in modified form.

However, open source software is not public domain. The software is protected by copyright and one must accept the license terms before the software may be modified and distributed. With open source licenses it is not required to explicitly sign an agreement with the author. Typically the author merely adds a license statement in the source code to put recipients on notice.

Including complete license texts in source code is of course sufficient, but for Javascript applications often impractical. For intentional source code distributions, e.g. a downloadable zipfile with the full code and documentation it may be acceptable to add a license text, but if the Javascript code is downloaded as part of a Web page, the overhead may be significant.

The question then arises, is it sufficient to merely refer to a license that is published elsewhere, e.g. by linking to the license text on opensource.org?

Consequences of insufficient license notice

When considering if a license notice is sufficient, one must also consider the consequences of an insufficient notice. The only consequence I can think of is that the recipient of the file cannot claim any usage right under the license in question. As a result, that recipient *cannot use or distribute the file.* Without a license, basic copyright applies and copyright forbids the reuse or redistribution of software without adequate permission.

A difficult situation may arise if the license notice is accompanied by a text such as "This program is free software; you can redistribute it and/or modify it under the terms of the GPL".

Such a text is by itself a permission (a mini-license) to freely redistribute and/or modify the code. The terms of the GPL could be declared inapplicable if the reference is insufficient. As a result, a recipient would have unlimited permission to redistribute or modify, without any obligation under the GPL.

Literature review

The legal literature is surprisingly silent on this issue. Van Lindberg, *Intellectual property and open source,* O'Reilly 2008 (p. 150) recommends to simply use a reference and store the license text itself somewhere in the source distribution. Other standard works, such as Rosen, *Open source licensing,* Prentice Hall 2004 and St. Laurent, *Understanding Open Source and Free Software Licensing*, O'Reilly 2004 do not discuss whether one can merely refer to a license text outside the files one distributes.

One relevant article is Richard M. Stallman, 'The JavaScript Trap', *GNU.org* July 31, 2010 http://www.gnu.org/philosophy/javascript-trap.html. This article acknowledges that "the GNU GPL is long enough that including it in a page with a JavaScript program can be inconvenient" and proposes a convention that uses the markers `@licstart` and `@licend` to mark the beginning and end of license references.

The convention suggests to use a text like this:

> *The JavaScript code in this page is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License (GNU GPL) as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version. The code is distributed WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU GPL for more details.*

This convention appears to be used in some larger Javascript-based projects (such as Plone) but is not universally adopted.

Applicability as stated in open source license

Open source licenses themselves often contain statements about how they can be declared applicable to certain software. These statements may allow or instead block the use of external references.

The GNU General Public License

The most popular open source license is the GNU General Public License or GPL. Version 2 of this license states:

> *This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License.*

The recommended format for this notice (as given below the official text on GNU.org) contains the line

> *This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version. ... You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.*

Version of the GPL has no explicit statement about how to recognize whether a work is licensed under GPLv3. There is only this sentence:

> *"The Program" refers to any copyrightable work licensed under this License.*

At the bottom an example is given, which has the same text as for GPLv2. We may thus assume that the intent is the same for GPLv2 and v3. The GPL in other words does not provide any obstacles against merely referring to the GPL text at an external location.

GNU Lesser General Public License

The GNU Lesser General Public License has a very similar clause in version 2.1:

> *This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License")*

Therefore the LGPL, like the GPL, does not provide any obstacles against merely referring to the GPL text at an external location.

The Mozilla Public License 1.1

The MPL uses an explicit source code notice in an Exhibit to the license text. This notice contains the following text:

> *The contents of this file are subject to the Mozilla Public License Version 1.1 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at http://www.mozilla.org/MPL/*

With this text it is clear that a mere reference to the license text can suffice.

The BSD license

The BSD license is a bit more problematic. The license does not define which software is covered by it. The only reference is article 1 of the license:

> *Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.*

This makes it clear that the license text must be in the file to which the license applies. Furthermore, the BSD license is typically offered as a template so that linking to that text results in an incomplete license. This reinforces the interpretation that one must copy the license text (and substitute one's details as copyright holder) before the BSD license can apply.

Arguably one can interpret the word "retain" as "do not remove" without an obligation to actually include the notice and the conditions in any source file. Under this interpretation it could be sufficient to refer to the BSD license elsewhere on the World-Wide Web. One would still need to make a copy of the BSD license template and substitute one's details.

The MIT license

The MIT license is a very brief and liberal open source license. The license text states that the license applies to

> *any person obtaining a copy of this software and associated documentation files*

but also requires that

> *The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.*

This requirement makes it hard to comply without actually including the verbatim text of the license in the Javascript file. We could follow the same approach as with the BSD license and interpret "shall be included" as "must not be removed" but the use of the active verb 'shall' makes this a harder interpretation.

Apache license

The Apache license 2.0 declares that a work is licensed under this license as follows:

> *Work ... made available under the License, as indicated by a copyright notice that is included in or attached to the work*

and provides an example

> *Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at http://www.apache.org/licenses/LICENSE-2.0*

Like the Mozilla Public License, it is clear that a mere reference to the license text can suffice.

Use of license references in practice

Another aspect to consider is how open source licensed are declared applicable in practice. To this end I investigate several popular Javascript libraries that are available under open source licenses. For each library I reproduce the copyright notices from the source files below.

All the libraries I examined merely included a reference to the applicable open source license in the source files. Some did include the complete license text in a separate file in a source distribution, others merely referred to a webpage in all cases. None however included the license text in the Javascript source files themselves.

DHTMLX

DHTMLX (http://dhtmlx.com/) is a JavaScript GUI widget library for building dynamic web applications with desktop-like user experience and Ajax data loading. DHTMLX source files provide this notice:

```
/*
Copyright DHTMLX LTD. http://www.dhtmlx.com
You allowed to use this component or parts of it under
GPL terms
To use it on other terms or get Professional edition of
the component please contact us at sales@dhtmlx.com
*/
```

jQuery

jQuery (http://jquery.com/) is a fast and concise JavaScript Library that simplifies HTML document traversing, event handling, animating, and Ajax interactions for rapid web development.

jQuery source files provide this notice:

```
/*!
 * jQuery JavaScript Library v1.4.2
 * http://jquery.com/
 *
```

```
 * Copyright 2010, John Resig
 * Dual licensed under the MIT or GPL Version 2 licenses.
 * http://jquery.org/license
 *
 * Includes Sizzle.js
 * http://sizzlejs.com/
 * Copyright 2010, The Dojo Foundation
 * Released under the MIT, BSD, and GPL Licenses.
 *
 * Date: Sat Feb 13 22:33:48 2010 -0500
 */
```

Plone

Plone (http://plone.org/) is a Content Management System built on top of the open source application server Zope and the accompanying Content Management Framework. Plone source files provide this notice (in line with the convention discussed earlier):

```
* @licstart  The following is the entire license notice
for the JavaScript
*            code in this page.
*
* Copyright (C) 2010 Plone Foundation
*
* This program is free software; you can redistribute it
and/or modify it
* under the terms of the GNU General Public License as
published by the Free
* Software Foundation; either version 2 of the License.
*
* This program is distributed in the hope that it will be
useful, but WITHOUT
* ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or
* FITNESS FOR A PARTICULAR PURPOSE. See the GNU General
Public License for
* more details.
*
* You should have received a copy of the GNU General
Public License along with
* this program; if not, write to the Free Software
Foundation, Inc., 51
* Franklin Street, Fifth Floor, Boston, MA 02110-1301
USA.
*
* @licend  The above is the entire license notice for the
JavaScript code in
*          this page.
*/
```

Dojo Toolkit

Dojo Toolkit (http://www.dojotoolkit.org/) is an open source modular JavaScript library (or more specifically JavaScript toolkit) designed to ease the rapid development of cross-platform, JavaScript/Ajax-based applications and web sites.

Dojo source files provide this notice:

```
/*
Copyright (c) 2004-2010, The Dojo Foundation All Rights
Reserved.
Available via Academic Free License >= 2.1 OR the
modified BSD license.
see: http://dojotoolkit.org/license for details
*/
```

YUI Library

The YUI Library (http://developer.yahoo.com/yui/) is a set of utilities and controls, written with JavaScript and CSS, for building richly interactive web applications using techniques such as DOM scripting, DHTML and AJAX.

YUI source files provide this notice:

```
/*
Copyright (c) 2010, Yahoo! Inc. All rights reserved.
Code licensed under the BSD License:
http://developer.yahoo.com/yui/license.html
version: 3.2.0
build: 2676
*/
```

Mootools

Mootools (http://mootools.net/) is a compact, modular, Object-Oriented JavaScript framework designed for the intermediate to advanced JavaScript developer.

Mootools source files provide this notice:

```
license: MIT-style license.

copyright: Copyright (c) 2006-2010 [Valerio Proietti]
(http://mad4milk.net/).
```

Date.js

Date.js (http://www.datejs.com/) is an open-source JavaScript Date Library. Date.js source files provide this notice:

```
/**
 * Version: 1.0 Alpha-1
 * Build Date: 13-Nov-2007
 * Copyright (c) 2006-2007, Coolite Inc.
(http://www.coolite.com/). All rights reserved.
 * License: Licensed under The MIT License. See
license.txt and http://www.datejs.com/license/.
 * Website: http://www.datejs.com/ or
http://www.coolite.com/datejs/
*/
```

Ext.JS

Ext.JS (http://www.sencha.com/products/js/) is a cross-browser JavaScript library for building rich internet applications. Both commercial and Open Source licenses are available.

Ext.JS source files provide this notice:

```
/*!
 * Ext JS Library 3.3.0
 * Copyright(c) 2006-2010 Ext JS, Inc.
 * licensing@extjs.com
 * http://www.extjs.com/license
 */
```

Conclusion

There is a very real desire to not include full open source license texts in Javascript files when those are downloaded by browsers. For distributions of Javascript projects in original form (with source code, documentation etcetera) this issue is less apparent, as the overhead of a single license file is small.

Virtually all projects that use open source and Javascript in practice simply refer to the license text as hosted on their own website. I found no project that actually copied an open source license text in a Javascript file.

Most open source licenses do not provide obstacles against this practice. As long as the license is identified and available by URL, one may consider this as adequate notice. I therefore conclude that authors of Javascript files can license by including a reference to the license and a URL where the license text can be found.

Based on the current practices I found above, I hereby recommend two forms of notice, a short form and a long form. The notice (in either form) should be included at the top of the source file in question;

Short form:

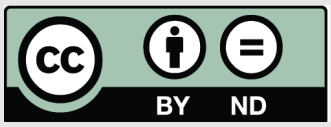
```
* Copyright OWNER NAME. Licensed under NAME LICENSE HERE
* See license text at http://example.com/license
```

Long form:

```
* @licstart
*
* Copyright (C) 2010 OWNER NAME HERE
*
* This file is licensed under the NAME LICENSE HERE.
* A copy of this license may be found at
http://example.com/license
*
* @licend
```

About the author

Arnoud Engelfriet *is associate at ICTRecht Legal Services in Amsterdam, the Netherlands. With his software engineering background he specializes in Internet law and software licensing issues. Before joining ICTRecht he worked for almost nine years at Royal Philips Electronics, where he created and deployed the firm's open source policy. Arnoud has published extensively about open source. Among others he published the first legal analysis under Dutch law of GPL version 3.*



Groklaw – Where We Have Been and Where We Are Going

Mark Webbink,

Groklaw editor since May 2011

DOI: 10.5033/ifosslr.v3i1.60

Abstract
After 8 years documenting litigation, explaining complicated legal matters and debunking uncertainty in the field of FOSS, Pamela Jones passed the baton on the Groklaw.net news website over to Mark Webbink. Under his editorship, Groklaw 2.0 will remain committed to its values and accuracy in reporting, though it will increasingly engage with issues like patent litigation to reflect current market tensions and imperatives.

Keywords
Law; information technology; Free and Open Source Software; Free Software community; patent litigation

On May 16, 2011, Groklaw[1] celebrated its eighth anniversary, and on that same day something unique happened – Pamela Jones stepped down as the editor of Groklaw, a role she had held since she started the electronic publication in 2003. But Groklaw did not shutter its doors on May 16. Rather, it entered a new era, what we are calling Groklaw 2.0, under the editorship of Mark Webbink, a name familiar to many in open source legal circles.

When Groklaw started in 2003, it was focused almost exclusively on one thing: exposing the story behind the SCO Group and its path of litigation. Day after day Pam and her team of open source journalists ferreted out the facts and told the story of SCO, a story that still has not concluded. As Groklaw progressed, readers would ask about other aspects of free and open source software. Pam was always willing to oblige, tapping into a vast network of friends and experts to explain the difficult legal concepts that sometimes underly open source.

Along the way certain standards were established. First, Groklaw is a journalistic enterprise, with interviews, research, and reporting of legal events important to the FOSS community. Groklaw is not

1 Groklaw, http://www.groklaw.net

without a point of view, but accuracy of reporting has always been the goal. Second, while Pam and Mark do most of the writing, they receive significant contributions from the many Groklaw volunteers, including research, reporting, document conversion, expertise, or whatever we need. These volunteers are legal experts, technology experts, educators, and journalists. They come from just about every walk of life.

As stated, Groklaw has a point of view that drives the stories and commentaries in which it has interest. Groklaw is a proponent of free and open source software, a proponent of truly open standards, an advocate against patents related to software, an advocate for low-cost, wide-spread access to the Internet, and an advocate for reasonable protection of privacy. That isn't to say that Groklaw is against other forms of software development or licensing, just that we believe the approaches we support are superior. Finally, Groklaw is for fair competition in the marketplace, which means we do not look kindly on FUD (fear, uncertainty and doubt) as a tool to promote one position over another.

Groklaw is also a wonderful historical archive of information and documents. Technologically supported by and operating on the servers of ibiblio[2], all of the information that Groklaw gathers and publishes remains accessible to the public. Groklaw has years worth of litigation history, transcripts, court documents, legal references, and papers that may be of interest to either legal scholars or the average Joe simply trying to understand more about free and open source software and the battles that have been fought on its behalf. And, while Groklaw provides a great deal of legal information, it does not dispense legal advice. There are plenty of experienced open source attorneys for that.

So what is Groklaw 2.0 and what is changing? Initially, not that much. Groklaw is a tremendous enterprise that has accumulated eight years of stories, technology, and practices, and you just don't hand all of that off overnight. For the time being, we are in a period of transition and learning.

However, anyone who has been around Groklaw for awhile is likely already seeing subtle changes. Mark's style of writing is not the same as Pam's. That is neither good nor bad, it's just different. Second, Groklaw is focusing more and more on patent litigation that either directly or indirectly impacts the FOSS community. Part of that is because of Mark's background and interests, but a larger part of it is because that is where the information technology industry is today, deeply embedded in a morass of patent litigation.

As Groklaw eyes the future, there are some things clearly on the horizon. One is to expand its stable of writers. While Pam continues to write the occasional article and Mark is now doing the bulk of the writing, we want to engage other writers in this enterprise. So we are reaching out to both law students and legal practitioners to participate and contribute.

A bit longer term, we are looking at a possible change in our technology platform. While Geeklog, the blogging software on which Groklaw runs, has served us well, it is not as flexible as many of the tools now available for web publishing. We will remain committed to open source tools, but Drupal may be a better long-term platform for us.

Groklaw will also start to stretch its wings, moving from primarily covering U.S.-centric litigation to a

2 Ibiblio, http://www.ibiblio.org

more international approach. But that means we need legal experts from around the world to support the work. We are hoping to work closely with the Freedom Task Force – Legal of the Free Software Foundation Europe. Just as the International Free and Open Source Software Law Review seeks to bring periodical, scholarly work to the public on FOSS and the IFOSS Law Book seeks to provide a reference volume on technology law and its application to FOSS, Groklaw looks to bring daily international news about FOSS. But that can only happen with a broad international effort.

One thing that won't change is the fact that Groklaw will continue to be what it always has been, a collaborative effort of volunteers. Come visit us, and sign up.

About the authors

Mark Webbink *is a lawyer with a strong focus on patent law and Free and Open Source Software. He is the former General Counsel at RedHat and one of the directors of the Software Freedom Law Center. As visiting professor at New York Law, Mark runs the Center for Patent Innovations, and oversees the Peer To Patent project run with the U.S. Patent and Trademark Office. He has been active in seeking reform of the U.S. patent system, and teaches patent licensing. In addition, Mark is a senior lecturing fellow at Duke University School of Law where he teaches about licensing.*

See *Jones, Pamela, '*As of Today, It's Mark Webbink's Groklaw 2.0*', Groklaw, Monday, May 16 2011, http://www.groklaw.net/article.php?story=20110515173831922*

Free and Open Source Software Compliance: An Operational Perspective

Philip Koltun [a]

Director of Open Compliance Program, The Linux Foundation

DOI: 10.5033/ifosslr.v3i1.61

Abstract
FOSS compliance involves many operational considerations that go beyond legal matters and the purview of the Law Department. Compliance policies, processes, training, and tools enable a company to use FOSS effectively. Essential compliance elements include identification of FOSS used in products; review and approval of planned FOSS use; and satisfaction of license obligations. The Linux Foundation's Open Compliance Program provides many resources to assist with compliance.

Keywords
Compliance; Free and Open Source Software

Introduction

Free and open source software (FOSS) *compliance* refers to the aggregate of policies, processes, training, and tools that enables a company to effectively use FOSS and contribute to open communities while respecting copyrights, complying with license obligations, and protecting the company's intellectual property and that of its customers and suppliers.

Companies initiate open compliance programs for a variety of reasons. Sometimes, it's recognition that a new product will use FOSS and that compliance must occur. Sometimes, interest in increased community involvement sparks awareness of license obligations. Sometimes, a company has already distributed a product that uses FOSS and compliance concerns are raised internally by knowledgeable engineers or externally by the license enforcement community.

If we think of a force-field analysis for initiating a compliance program, the forces driving a company include newfound awareness of obligations; desire to collaborate; commitment to being a good corporate citizen; and community pressure. Forces that tend to restrain implementation of a

compliance initiative include inertia, lack of knowledge, lack of leadership, and lack of resources. See Figure 1.

Fig. 1: Force-Field Analysis for Compliance Program Implementation

Restraining forces can be overcome by education and advocacy from strategists and FOSS enthusiasts in a company. The Linux Foundation's Open Compliance Program provides training, white papers, tools, and other aids to overcome challenges posed by lack of knowledge and resources.[1]

For a product being distributed externally, compliance involves three core activities: identification of FOSS; review and approval of planned use of FOSS; and satisfaction of license obligations for the included FOSS. Each of these activities is discussed below.

Identification of FOSS

First, identification of all FOSS in a product comes from the dual processes of disclosure and discovery. With *disclosure,* engineers and product managers of the company and its external suppliers typically identify FOSS based on prior knowledge of where the code came from. *Discovery* refers to audits (either manual or automated) that are used to identify FOSS code and its origin.

Reliance only on disclosure can be problematic. Few products these days are written from scratch. Most evolve from legacy products and externally acquired source code (either FOSS or commercially licensed software), with new code being written to implement differentiating features and functionality. Sometimes millions of lines of code may be included in a product, some of it pre-dating the engineers currently working for the company. It's unlikely that any one individual or team will know all of the code and where it came from. So it is hardly surprising that disclosure alone would be incomplete or inaccurate.

1 http://www.linuxfoundation.org/programs/legal/compliance

Review and Approval

Reviewing and approving planned FOSS use is the second essential step in compliance, typically requiring a panel of skilled and knowledgeable individuals known as an Open Source Review Board (OSRB). An OSRB must review FOSS use in context, so a product architectural diagram will be needed to show how the software components (including FOSS) interface and interact. The OSRB examines licensing implications of the architecture, compatibility of components from a license perspective, and resultant license obligations. Therefore, an OSRB must incorporate the expertise of skilled software architects and licensing experts with direct insight into company product development plans and history. FOSS community contacts are also highly beneficial.

Someone should monitor whether the OSRB has the resources needed to provide adequate cycle time on review decisions. That is, given the nature and complexity of planned FOSS use, will it be possible to reach approval decisions in the timeframe needed by product teams? Metric collection can provide insight into the rate of reviews, the number of issues identified and their priority, and the closure rate.

Satisfaction of Obligations

The third essential step concerns satisfaction of obligations. Many organizational actions must come together to assure FOSS license obligations can be met. Obligation fulfillment typically involves inclusion of attributions, copyright notices, and license text along with the product when it is distributed externally. Providing complete and corresponding source code or an offer of source code may also be required, depending on the FOSS licenses involved. Individuals or teams responsible for product documentation and localization activities must perform necessary tasks to assure that documentation obligations are met.

As part of the process to satisfy source code obligations, the company should place into a software repository the complete source code corresponding exactly to each FOSS package used in a given product release. The complete source code may include any associated interface definition files, plus the scripts used to control compilation and installation of the executable. Verification activities should assure that source code used to produce product binaries has been cleansed of any inappropriate comments and that all FOSS packages in the product have been approved by the OSRB.

The company should also define a code distribution mechanism that satisfies the requirements of particular FOSS licenses. A web portal is often created to provide online access to source code used in company products, though other distribution mechanisms beyond a portal may be required. Responsibility for maintaining the portal must be assigned and staffed appropriately, and the portal should be organized in a clear and meaningful way to provide users easy access to products' licensing information and FOSS source code.

It's also crucial that the company responds to all external compliance requests for source code in a timely manner. Response actions should be given high priority and issues escalated to an appropriate level of management if there are problems with compliance. A company must establish a process for

responding to compliance requests promptly and fully and for tracking compliance requests to closure.

Compliance is an Operational Process

The foregoing discussion should illustrate that compliance involves many operational considerations that go beyond legal matters and the purview of the Law Department. Compliance problems, when they occur, are usually attributable to operational problems, not legal misinterpretations. Typical compliance problems include failure to provide source code (or an offer of source code) at all; providing incomplete source code or an incorrect version; omitting required attribution notices or doing so inaccurately; and so on. The root cause of these problems most likely traces to one or more disconnects involving people and processes: The engineers who know about the FOSS inclusion are disconnected from the people who understand the obligations. Or, the people who understand the obligations are disconnected from the people who manage product release and generate documentation. Or, the steps for FOSS review and obligation satisfaction are not integrated into the product development and release processes and schedule. And so on.

When a company distributes a product externally, it bears the responsibility for satisfying FOSS license obligations, including those for code obtained from third party suppliers. Compliance of third party software suppliers represents a special challenge for a company. Supplied code usually comes in the form of binaries rather than source, in order to protect the supplier's intellectual property. So the company lacks the ability to examine the supplier's source code for FOSS inclusion. Moreover, the company's business teams have specialized interests in the supplier and its software: Typically, Business Development is interested in differentiating features; Engineering is interested in obtaining the code and testing the functionality; Supply Chain is interested in the cost and the deal. Who will look out for FOSS inclusion and compliance?

As a result, a company must require FOSS disclosure and obligation satisfaction from its suppliers. A company should also satisfy itself about its suppliers' FOSS compliance practices. Does a supplier have a policy on FOSS use, compliance training for its teams, automated code scanning to facilitate discovery and recognition of FOSS, a procedure to prepare a FOSS bill of materials, and so on? Key questions a company must consider in regard to its suppliers include whether to insist on an automated FOSS code scan and the manner in which license obligations will be satisfied. The Linux Foundation's Self-Assessment Checklist can be used effectively to assess supplier compliance practices and engage suppliers in discussion about compliance.[2]

Ultimately, an effective compliance program must integrate compliance activities into day-to-day business processes so that identification, review and approval, and obligation satisfaction steps are routinely accomplished in time for product release. Key elements of a compliance program include company policy, employee training, assignment of compliance responsibility, staffing of the compliance function, and automation to enhance efficiency and accuracy.

When a company implements an effective compliance process, it benefits in numerous ways besides meeting its license obligations. A company engaged in compliance activities achieves a better

2 http://www.linuxfoundation.org/programs/legal/compliance/self-assessment-checklist

understanding of its product and platform content; an opportunity to optimize FOSS use; enhanced ability to engage in collaborative communities; and improvement of its product development practices. Notable among these development practices are improved configuration management, supplier management, and verification capabilities.

First Steps

First steps taken to implement a compliance program depend, of course, on the company's product plans and current situation. Figure 2 illustrates a typical sequence of actions.

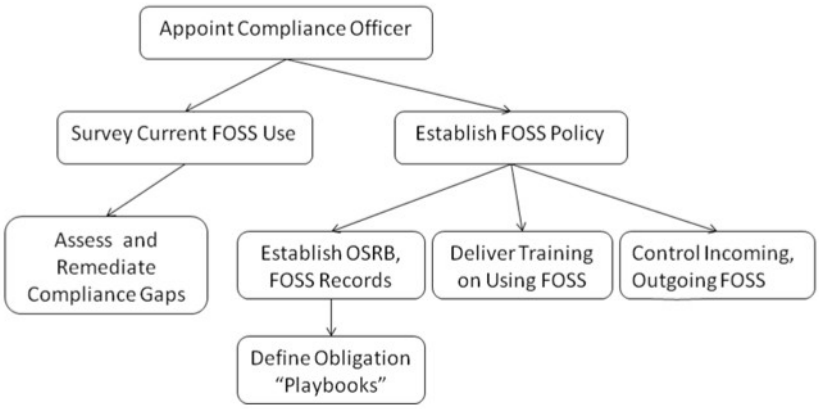


Fig. 2: Initial Actions in a Compliance Program

First and foremost, someone must bear overall responsibility for leading the compliance initiative and achieving product compliance. Commonly now, this person holds the title of Open Source Compliance Officer. Ideally, the Compliance Officer possesses insight into FOSS licensing and community interactions, software design, company product architecture and plans, and company business processes. Interpersonal relationships with key company decision-makers are also essential.

Even though compliance is a business function driven by Engineering and Product Management, attorneys nonetheless play an important contributory role and must be engaged as partners in the compliance undertaking. The Law Department typically advises on licensing and interprets FOSS licenses and their obligations. In most cases, engineers do not have time or expertise to read lengthy licensing texts and need a quick summary of commonly-used FOSS licenses that highlights the key compliance obligations. The Law Department also advises on licensing conflicts arising from planned use of software under incompatible licenses. They can help resolve issues that may be associated with the use of particular FOSS and advise and direct the engineering and product teams in the event of any compliance inquiries. Ultimately, the Law Department may have authority to stop product shipment in the event of any compliance issues that warrant such serious action.

Compliance Resources

The Linux Foundation's Open Compliance Program is the industry's only neutral, comprehensive software compliance initiative. By marshaling the resources of its members and leaders in the compliance community, the Linux Foundation brings together the individuals, companies and legal entities needed to expand the use of FOSS while decreasing legal costs and reducing fear, uncertainty, and doubt.

Inevitably, this short overview of compliance barely touches on important details of what must be done and how to implement those practices and avoid common pitfalls. Companies seeking greater insight into compliance practices can take Linux Foundation compliance training courses; download freely available Linux Foundation compliance white papers and the Self-Assessment Checklist; participate in the SPDX® working group; participate in the FOSSBazaar community and discuss compliance best practices; and access other helpful resources. More information can be found at http://www.linuxfoundation.org/programs/legal/compliance.

Conclusion

Compliance is a goal, but it is also the outcome of many interrelated activities and supporting processes, tools, artifacts, and infrastructure. The three fundamental elements of compliance consist of FOSS identification; review and approval of planned FOSS use; and satisfaction of obligations. But these core elements must be shored up by a company policy on FOSS use; training on compliance responsibilities and requirements; and other supports such as staffing, project management discipline, recordkeeping and automated tools. Essential processes must be defined and used regularly; skilled staff must be deployed to perform these processes; and the conditions must be established for a successful compliance program. Many helpful resources on compliance are available from The Linux Foundation's Open Compliance Program.

About the author

Philip Koltun *is director of The Linux Foundation's Open Compliance Program, which provides training, tools, and other resources to make FOSS license compliance ever-easier to achieve. Previously, he defined and implemented comprehensive open source compliance programs for Motorola and NAVTEQ, including policies and procedures, training, OSRB function, 3rd party supplier compliance, and compliance tool introduction.*

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