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PATENT RIGHTS UNDER FOSS LICENSING SCHEMES

Shaobin Zhu[1]

ABSTRACT

Free/Open Source Software ("FOSS") licenses generally give developers and users the freedom to run software for any purpose, to study and modify software, and to redistribute copies of either the original or the modified software without paying royalties to previous developers. The FOSS community is facing increasing threats from software patents, especially from entities outside the FOSS community. This Article discusses patent rights under FOSS licenses, including the GNU General Public License ("GPL") 2.0 and draft 3.0, the Apache License and the Mozilla Public License ("MPL"). It also addresses how current GPL draft 3.0 attempts to reconcile the conflict between software freedom/innovation and patent protection, and to resolve the compatibility of GPL draft 3.0 with other FOSS licenses.

Table of Contents

Introduction

<1>Free/Open Source Software ("FOSS") has become a successful business model,[2] but it is facing increasing threats from software patents. Under FOSS licenses, licensees enjoy the freedom to access, copy, use, modify, and redistribute original and derivative software (including object code[3] and source code[4]), and to combine open source software with other software, thereby improving and adapting the software to their own uses.[5] Because of its low cost, web-connected worldwide collaborators, fast innovations, and improving reliability and security, FOSS has now blossomed into a multi-billion dollar sector of the information technology industry, with companies such as IBM, Novell, Sun Microsystems, and Red Hat offering products built with the FOSS development process.[6] However, FOSS licenses originally focused on rights relating to copyright, and most did not address patent rights. While it would prefer not to involve itself with the patent system, the FOSS community is facing increasing claims of patent infringement, especially from entities outside the FOSS community. A Federal Circuit Court of Appeals decision recently put a scare in the FOSS community. Under the court's ruling in *Teleflex, Inc. v. KSR Int'l Co.*, an invention combining prior art references may be patented unless there is a specific reference in the prior art to a teaching, suggestion, or motivation to combine prior art teachings in the particular manner claimed by a patent at issue.[7] While this decision was ultimately reversed by the U.S. Supreme Court, the FOSS community remains worried that they may face more trivial-improvement patent infringement claims.[8]

<2>In order to avoid patent infringement claims and maintain use rights to the software, some well-known FOSS licenses expressly or implicitly include patent grant and patent

defense/termination clauses. For example, the Apache license and Mozilla Public License ("MPL") have patent grant clauses to grant licensees a royalty-free patent license to make, use, sell or offer to sell, or import specific software. [9] They also contain patent defense clauses to discourage patent litigation against any participant in the license chain by terminating all patent licenses if the licensee sues.[10] The GNU[11] General Public License ("GPL") 2.0 has no express patent grant clause, but has a clause that seeks to ensure that any patent must be licensed for everyone's free use or not licensed at all.[12] Conversely, GPL draft 3.0 has a very broad patent grant clause as well as a patent retaliation clause that embraces a termination clause, and allows contributors to enhance retaliation rights by placing additional requirements on licensees.[13] However, the current draft of GPL 3.0 has attracted concerns from the FOSS community about how GPL 3.0 reconciles the conflict between software freedom/innovation and patent protection, how GPL 3.0 works compatibly with GPL 2.0 and other FOSS licenses, and whether GPL 3.0 is the best option for a FOSS project.

PATENT RIGHTS UNDER FOSS LICENSES

<3>While FOSS licenses generally protect end user freedom in the realm of copyright, they have no effective protection against threats from software patents, especially from entities outside the FOSS community.[14] Many FOSS projects lack the financial and institutional resources necessary to defend themselves in patent litigation.[15] According to some commentators, the FOSS community often needs access to technologies and industry standards that are developed and patented by conventional for-profit companies.[16] Some of these companies are willing to license the necessary technologies, often royalty-free, but these licenses are generally conditioned on reciprocity and no sublicensing.[17] For instance, Microsoft grants a reciprocal, royalty-free, non-sublicenseable, worldwide patent license to make, use, import, offer to sell, sell and distribute directly or indirectly to end users, the object code of software conforming to the Sender ID Specification.[18] FOSS programs, especially if licensed under the GPL, cannot work in this system. FOSS licenses generally preclude royalty payments, however modest,[19] and even if no royalties are required, FOSS licensees cannot accept the condition of no sublicensing.[20] This leaves FOSS licensees with a problem. If a FOSS program has no patent licensing protection from technologies and industry standards that are patented by conventional for-profit companies, then the FOSS program writers, distributors and users are vulnerable to patent infringement claims.[21]

<4>Another possible threat to FOSS projects stems from a recent federal court patent law ruling. Under U.S. patent law, after meeting utility and novelty requirements, an inventor may obtain a patent if the invention is nonobvious.[22] Small details and obvious improvements shall not be patented. [23] In *Graham v. John Deere Co.*, the Supreme Court established a flexible framework for determining whether an invention is nonobvious over prior arts by inquiring into the following factual factors: the scope and content of the prior art; differences between the prior art and the claims at issue; the level of ordinary skill in the pertinent art. Such secondary considerations as commercial success, long-felt but unsolved needs, and failure of others might be utilized as objective indicia of nonobviousness.[24] However, in evaluating nonobviousness, both patent examiners and courts are confronted with hindsight bias. To prevent the use of hindsight based on the invention to defeat patentability of the invention, in addition to the above factors, the Federal Circuit requires the examiner to show a teaching, suggestion, or motivation to combine multiple prior art references that create the case of obviousness.[25] In *Teleflex, Inc. v. KSR Int'l Co.*, the Federal Circuit transformed the above framework into a rigid requirement for determining obviousness – the teaching-suggestion-motivation (TSM) test is the primary means of establishing obviousness under Section 103(a).[26] When this ruling came out, some were worried that litigants would be forced to search through reams of technical papers for a document in which someone, somewhere, has stated the obvious.[27] It was worried that the test would increase the number of trivial-improvement software patents, and thereby may cause new problems for FOSS projects.[28] However, the U.S. Supreme Court recently reversed the Federal Circuit's judgment, holding that the Federal Circuit's TSM test is narrow, rigid, and inconsistent with 35 U.S.C. § 103 and *Graham*.[29]

<5>In responding to the threat from software patent holders, the FOSS community has created innovative licensing schemes. Permissive licenses,[30] such as the Apache licenses, have different patent rights clauses from reciprocal licenses,[31] such as the MPL and GPL.

PATENT RIGHTS UNDER APACHE LICENSES

<6>Linux operating system projects[32] and Apache Software Foundation projects[33] are the most widely known and successful FOSS projects. Apache Software Foundation projects are licensed under a permissive license.[34] Apache software may be used by anyone, anywhere, for any purpose, including for inclusion in proprietary derivative works, without any obligation to disclose source code.[35] Contributors are required to submit a signed Contributor License Agreement to convey copyright and patent rights.[36]

<7>The latest 2.0 version of the Apache license has a detailed patent grant clause to convey a broad patent grant from all contributors to the software to all licensees, royalty-free.[37] Any contributor must grant a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable patent license to the applicable software.[38] The grant is limited to a contribution or product that the licensor controls or creates, and does not cover changes by others over which the licensor has no control.[39]

<8>In addition, the patent license has a far-reaching termination clause. If a licensee of a work sues a contributor for patent infringement, then any patent licenses granted to the licensee under the Apache License for that work terminate.[40] This terminates only the granted patent licenses, not the entire Apache License, although effectively this termination may increase risk of use. This termination rule is not restricted to the contributor's code, but applies to any patent claim against the software in original or modified form. The intent is to use the leverage of software and business costs, expressed in operational reliance and investment in use of the program, to forestall patent litigation against any participant in the license chain.[41]

PATENT RIGHTS UNDER MPL

<9>The Mozilla Public License ("MPL") was originally crafted in 1998 to govern the distribution of Netscape's open sourced Internet browser.[42] The latest version of the license is MPL 1.1.[43] The MPL is characterized as a hybridization of the modified Berkeley Software Distribution ("BSD") License and the GPL.[44] The primary difference between the GPL and more "permissive" FOSS licenses such as the BSD License and Apache License is that the GPL seeks to ensure that the FOSS freedoms - the freedom to access, copy, use, modify, and redistribute original and derivative software, and combine free software with other free software, thereby improving and adapting the software to their uses[45] - are preserved in copies and in derivative works. GPL does this by requiring derivative works of GPL-licensed programs to also be licensed under the GPL. In contrast, BSD-style licenses allow derivative works to be redistributed as proprietary software.[46]

<10>The MPL has been adapted by others to a license for their software, most notably Sun Microsystems, as the Common Development and Distribution License for OpenSolaris.[47] The license is regarded as a weak copyleft: source code file copied or changed under the MPL must stay under the MPL while derivative works, containing covered code with code not governed by MPL, may not.[48] Unlike strong copyleft licenses such as the GPL, the code under the MPL may be combined in a program with proprietary files that are not derivative works of the MPL code.[49] The Mozilla Suite and Firefox have been relicensed under multiple licenses, including the MPL, GPL and LGPL (GNU Lesser General Public License, formerly the GNU Library General Public License).[50]

<11>The MPL handles patent issues much more thoroughly than other preceding FOSS licenses.[51] It has an explicit patent license, where contributors agree to grant users unlimited licenses for the patents they own that apply to the whole source code.[52] The MPL also has a patent defense clause[53] that is more extensive than the one in the Apache License and GPL. Under the MPL license, the program authors license a contributor version to the licensee - with the right to make free copies, prepare derivative works, and distribute – as long as the licensee does not sue for patent infringement.[54] However, if the licensee sues, all copyright and patent licenses to the licensee under the MPL for the contributor version are terminated. In addition, if the licensee sues the program authors for any other patent infringement unrelated to the contributor version, all patent licenses to the licensee under the MPL for any software are

terminated.[55]

<12>In contrast to the termination clause of the Apache License, the MPL patent defense clause terminates the entire FOSS license, rather than merely rights under a patent license.[56] The termination rule is not limited to a patent claim filed with respect to the MPL software, but refers to any patent claim filed against the licensor for any patent applicable to software.[57] It includes any suit against any contributor with respect to any patent applicable to the original work.[58] This threat of termination of the entire license would increase business costs to the suing licensee if they materially relied on the program. It would effectively stifle enforcement of a related patent against any participant in the license chain for a user or participant in the chain.[59]

PATENT RIGHTS UNDER GPL 2.0

<13>The GNU General Public License, or GPL, originally written by Richard Stallman for the GNU project, is the most widely used FOSS license.[60] To ensure that FOSS freedom is preserved in copies and in any derivative works, GPL uses a legal mechanism known as "copyleft", invented by Stallman, which requires derivative works of GPL-licensed programs to be also licensed under the GPL.[61]

<14>GPL 2.0, released in 1991, is the latest version.[62] The GPL governs thousands of open-source projects, such as the Linux kernel and GNU Compiler Collection (GCC).[63] Software governed by the GPL 2.0 gives programmers and users built-in FOSS freedoms, but lacks an explicit patent license grant. However, the Preamble of GPL 2.0 expresses the view that "any free program is threatened constantly by software patents" and therefore that "any patent must be licensed for everyone's free use or not licensed at all."[64] Thus, some scholars think that GPL 2.0 includes an implied patent license grant with respect to any patents a distributor has that may read on the GPL licensed program.[65] The implied patent license is granted to all subsequent distributees.[66] The implied patent grant is only effective in combination with the original licensed code or its derivative work.[67] Because GPL 2.0 does not have an explicit patent license grant, a FOSS project under GPL 2.0 facing a patent infringement claim may have to terminate just because it would be too costly and time-consuming to find out what the real risk is. FOSS project users, in addition to the creators, also face the risk of patent infringement suits.[68]

<15>In dealing with potential patent claims, GPL 2.0 has a "Freedom or Death" termination clause[69] – "any patent must be licensed for everyone's free use or not licensed at all."[70] GPL 2.0 does not allow the development of software that requires any kind of license payments for third party patents.[71] If and when a valid patent claim by a third party prevents a GPL licensor from making, using, or selling the software, such software will no longer be free and can no longer be distributed under GPL 2.0.

<16>Regarding geographical limitations of patent rights, GPL 2.0 allows licensors to continue to license their works in the geographical regions where the patents do not apply.[72]

PATENT RIGHTS UNDER GPL DRAFT 3.0

<17>GPL 3.0 was drafted to cope with global software patent threats and to provide compatibility with more non-GPL FOSS licenses.[73] In 1991, when GPL 2.0 was drafted, the United States was the only country that ostensibly allowed software patenting.[74] GPL 2.0 was constructed with attention to the doctrine of implied license that is recognized under United States patent law.[75] Today, most countries permit software to be patented to at least some degree.[76] This worldwide shift in patent law has brought about a serious threat to the FOSS community because the doctrine of implied license may not be recognized in other jurisdictions.[77] Moreover, although GPL 2.0 is the most popular FOSS license, many FOSS projects are under other licenses that are not compatible with GPL 2.0.[78]

<18>The current GPL draft 3.0 keeps GPL 2.0's copyleft feature and includes new provisions addressing evolving computing issues, such as patent issues, free software license compatibility, and digital rights management ("DRM").[79] GPL draft 3.0 provides an explicit

patent license covering any patents held by a GPL-covered work's developer.[80] It contains a cross-licensing restriction clause to block a developer from conveying a GPL-covered work if the developer has an arrangement with a third party that has granted a patent license selectively to that developer's customers.[81] It also contains provisions that enable a developer to combine code carrying non-GPL terms with GPL licensed code.[82]

i. Patent Grant Clause

<19>The current GPL draft 3.0 makes the patent grant explicit.[83] A distributor of a GPL licensed work automatically grants a nonexclusive, royalty-free, worldwide license for any patent claims held by the distributor, to make, use, sell, offer for sale, import and otherwise run, modify, copy, and distribute the work.[84] Under the patent license, the distributor promises not to sue for patent infringement and not to enforce a patent.[85]

<20>If a redistributor knows that the conveyance or use of a GPL-covered work in a jurisdiction would infringe a patent under the patent license, the redistributor should make the source code of the work available, free of charge, to the public, renounce the patent license, or extend the patent license to downstream recipients.[86] The license therefore attempts to ensure that downstream users of GPL licensed derivative works are protected from the threat of patent infringement allegations made by upstream distributors, regardless of which country's laws are held to apply to any particular aspect of the distribution or licensing of the GPL licensed code.

<21>When a redistributor of GPL licensed code relies upon a patent covered by a patent license to clear rights to distribute the code, the patent licensor could bring a patent infringement lawsuit against the redistributor based on the distribution or other use of the code. The patent licensor lawsuit could prevent any GPL downstream users from exercising the freedoms that the GPL license seeks to guarantee.[87] Thus, the GPL license condition asks the redistributor to act to shield downstream users from these patent claims. The requirement applies only to a redistributor who knowingly relies on a patent license and the source code is not available, free of charge, to anyone to copy.[88] Many companies enter into blanket patent cross-licensing agreements. With respect to some such agreements, it would not be reasonable to expect a company to know that a particular patent license covered by the agreement, but not specifically mentioned in it, protects the company's distribution of GPL licensed code.[89] This draft provides specific means to protect downstream recipients, which was missing in previous drafts.[90]

ii. Cross-licensing Restriction Clause

<22>GPL draft 3.0 incorporates provisions to prevent future cross-licensing patent deals similar to that occurred between Novell and Microsoft in November 2006.[91] In an unusual cross-licensing patent pact, Microsoft and Novell each agreed not to sue the other company's customers for any possible infringements of the companies' respective patents, and each agreed to pay the other hundreds of millions of dollars for both licensing and patent protection.[92] The implication is that Novell pays Microsoft for distributing GPL-covered SuSE Linux software that might infringe on Microsoft's patents, and only Novell customers would be able to use it.[93] Because this is a discriminatory protection from patents and is contrary to the spirit of FOSS licenses, the Free Software Foundation regards this as a big threat to FOSS community.[94]

<23>GPL draft 3.0 includes provisions to protect FOSS from future such threats in two ways. One is aimed at Microsoft's role in the cross-licensing patent deal.[95] The draft "assures that patents cannot be used to render the program non-free,"[96] and provides that if a redistributor makes a deal to procure someone else's distribution of a GPL-covered work and grants a patent license to anybody in connection with that, then it automatically extends to all recipients of the covered work and derivative works.[97] Therefore, in the Novell-Microsoft deal, Microsoft procured Novell's distribution GPL-covered SuSE Linux software that might infringe Microsoft's patents, and under GPL draft 3.0, Microsoft's patent license to customers of Novell would automatically extend to all who get the software or works based on the software.[98]

<24>The other provision is aimed at Novell's role in the deal. It provides that if a developer

distributes a GPL-covered work under an arrangement made with a third party that is in the business of distributing software to gain profits or patent safety for the developers customers in a discriminatory way, then the developer violates the GPL and loses the right to distribute the work under the GPL.[99] Under this provision, it seems that Novell would lose its right to distribute SuSE Linux software under the GPL and therefore GPL 3.0 would essentially prohibit any agreements along the lines of the Novell-Microsoft deal. However, GPL 3.0 Draft contains a bracketed sentence – the "grandfathering clause" – that would exempt from Section 11 any agreements made before March 28, 2007.[100] This clause would allow existing Novell-Microsoft-like deals to remain intact and keep Novell's SuSE Linux covered by GPL.[101]

iii. Compatibility of GPL 3.0 with other FOSS Licenses

<25>There may be a licensing conflict when incorporating a GPL 3.0 governed project or derivative work into projects governed by GPL 2.0 or other FOSS licenses. This would deter those seeking to create a FOSS project from moving to GPL 3.0 by creating difficulties in project integration. [102]

<26>However, section 7 of GPL draft 3.0 allows a developer to add additional permissions to the GPL when distributing a program.[103] This provision extends the number of licenses compatible with the GPL. Therefore, a program can be distributed under "pure" GPL – without additional permissions from other FOSS licenses – or be distributed under GPL with additional permissions from other FOSS licenses, such as the patent retaliation provision from the Apache license. The change increases compatibility, but also makes copyleft somewhat looser. Under GPL 3.0, when a developer changes a GPL-covered work, the licenses of works does not have to be exactly the same. The developer can add, pass on or remove additional permissions. This increases flexibility and compatibility.

IMPLICATIONS OF PATENT RIGHTS PROVISIONS OF GPL DRAFT 3.0

i. Balance of Software Freedom/Innovation and Patent Protection

<27>The patent rights provisions of GPL draft 3.0 give the FOSS community greater chances for broad software freedom, but run counter to the traditional logic behind patent protection. According to one commentator, GPL 2.0 precludes the patentee from asserting his or her patent rights against people who are practicing the invention by using the GPL-licensed software.[104] GPL 2.0 allows companies to assert patent claims if they stop distributing GPL-licensed software. However, GPL draft 3.0 requires that those distributing GPL-licensed software not assert patent rights they may have in that software — against anyone, not just against the parties to whom they distributed it, even after they stop distributing GPL-licensed software.[105] Companies such as HP are concerned that this could permanently limit a company's ability to sue for patent infringement if the company is distributing GPL-licensed software that contains the company's patented technologies.[106] Several large companies have expressed their concerns and are reluctant to switch to GPL 3.0. [107] However, in the Novell-Microsoft deal, the two large software companies have promised not to assert their patents against individual, non-commercial developers.[108] This has already brought some impact on the patent grant language of the current draft of GPL 3.0.

CONCLUSION

<28>The threat of patent litigation poses serious challenges to the FOSS community. The FOSS community has been responding by developing various licensing schemes to combat this "patent attack". Among the most important FOSS licenses, GPL draft 3.0 is the latest endeavor of the FOSS community to fight against this "patent attack". However, some in the FOSS community think GPL 3.0 may have gone too far and may hurt inventors' legitimate patent rights. In addition, there are also some compatibility issues between GPL 3.0 and other FOSS licenses. As a result, it is unclear whether GPL 3.0 will be accepted as a new standard.

PRACTICE POINTERS

- When developing and distributing a FOSS program, a company should choose a FOSS license that contains explicit patent license grants and patent retaliation/termination clauses, to avoid patent infringement claims from FOSS distributors and licensees and to maintain use rights to the software.
- Although GPL 2.0 is the most widely used FOSS license, it does not have an explicit patent license provision. The lack of an explicit patent license provision exposes those using the license to threats of patent infringement suits, particularly from those originating outside of the United States.
- GPL draft 3.0 includes an explicit patent license clause and a patent cross-licensing restriction clause, in an effort to decrease incentives for patent suits, and to promote software freedom/innovation. As a tradeoff, it restricts a company's ability to sue patent infringers.
- GPL draft 3.0 improves compatibility with other FOSS licenses dramatically, and allows adding on additional permissions from other FOSS licenses.

<< Top

Footnotes

1. Shaobin Zhu, a J.D. student, class of 2008 at the University of Washington School of Law. Thank you to Professor Jane Winn and Professor Greg R. Vetter for reviewing and commenting on this article.
2. *But see* Ronald J. Mann, *Do Patents Facilitate Financing In The Software Industry?*, 83 Tex. L. Rev. 961, 1010 (2005) (FOSS community attempts to foster the development of software largely without commercial investment or affirmative IP protections).
3. The code produced by a program compiler from the source code, usually in the form of machine language that a computer can execute directly, or sometimes in assembly language. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2004), *available at* http://www.answers.com/topic/object-file (last visited May 23, 2007).
4. Code written by a programmer in a high-level language and readable by people but not computers. Source code must be converted to object code or machine language before a computer can read or execute the program. THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2004), *available at* http://www.answers.com/source%20code (last visited May 23, 2007).
5. http://opensource.org/docs/definition.php (last visited May 23, 2007); LAWRENCE ROSEN, OPEN SOURCE LICENSING: SOFTWARE FREEDOM AND INTELLECTUAL PROPERTY LAW, 9-11 (2005).
6. David A. Wheeler, *Why Open Source Software / Free Software (OSS/FS, FLOSS, or FOSS)? Look at the Numbers!*, November 14, 2005, http://www.dwheeler.com/oss_fs_why.html (last visited May 23, 2007); Matt Rand, *Open Source Invades the Enterprise*, November 1, 2005, http://www.forbes.com/business/2005/11/01/bow051101011.html (last visited May 23, 2007).
7. Teleflex, Inc. v. KSR Int'l Co., 119 Fed. App'x 282, 290 (Fed. Cir, 2005) (not published in the Federal Reporter).
8. *Dangerous Patent Law Ruling Threatens Free and Open Source Software*, August 23, 2006, http://www.eff.org/news/archives/2006_08.php#004881 (last visited May 23, 2007).
9. Apache License, Version 2.0, § 3, *available at* http://www.opensource.org/licenses/apache2.0.php (last visited May 23, 2007); MPL 1.1, § 2, *available at* http://www.opensource.org/licenses/mozilla1.1.php (last visited May 23, 2007).
10. Apache License, Version 2.0, *supra* note 9, *at* § 3; MPL 1.1, *supra* note 9 *at* § 8.
11. GNU stands for ``GNU's Not Unix'', and refers to the GNU operating system, a

complete free software system, upward-compatible with Unix. The project to develop the GNU system is called the GNU Project. However, the GNU Project is not limited to the core operating system. *Overview of the GNU System*, http://www.gnu.org/gnu/gnu-history.html (last visited May 23, 2007).

12. GPL Version 2.0, § 7, *available at* http://www.opensource.org/licenses/gpl-license.php (last visited May 23, 2007).

13. GPL Version 3.0 - Third Discussion Draft, § 7, 8 and 11, *available at* http://gplv3.fsf.org (last visited May 23, 2007).

14. Karen F. Copenhaver et al, *Open Source Software Fall 2006: Critical Issues in Today's Corporate Environment GPL V. 3.0*, 885 PLI/Pat 147, 181 (2006).

15. Brian W. Carver, *Share And Share Alike: Understanding And Enforcing Open Source And Free Software Licenses*, 20 Berkeley Tech. L.J. 443, 462 (2005).

16. James DeLong, *FOSS & Patent Reform*, May 16, 2005, http://weblog.ipcentral.info/archives/2005/05/foss_patent_ref.html (last visited May 23, 2007).

17. *Id.*

18. Microsoft has developed a Sender ID Specification describing certain attributes for eliminating the spoofing or forging of electronic addresses. Microsoft wishes to encourage widespread adoption, implementation, and extension of the Specification to help senders protect their domain names and reputations, and help recipients more effectively identify and filter junk e-mail. Microsoft Royalty-Free Sender ID Patent License Agreement, http://download.microsoft.com/download/b/d/3/bd3b5463-c461-409c-b29f-512218d3f3e6/SenderID_License-Agreement.pdf (last visited May 23, 2007).

19. The Open Source Definition requires that a FOSS license shall not require a royalty or other fee for redistribution, http://www.opensource.org/docs/definition.php (last visited May 23, 2007). Under GPL 2.0, any patent must be licensed for everyone's free use or not licensed at all. GPL 2.0, *supra* note 12, Preamble.

20. Some FOSS licenses, such as the MIT License, may allow users to sublicense the original work. ROSEN, *supra* note *5*, *at* 87.

21. Copenhaver, *supra* note 14, *at* 181.

22. 35 U.S.C. § 101, 102, and 103.

23. Graham v. John Deere Co., 383 U.S. 1, 9 (1966).

24. *Id. at* 17-18.

25. In re Rouffet, 149 F.3d 1350, 1355-57 (Fed. Cir. 1998).

26. KSR, 119 Fed. App'x *at* 290.

27. *Dangerous Patent Law Ruling Threatens Free and Open Source Software*, August 23, 2006, http://www.eff.org/news/archives/2006_08.php#004881 (last visited May 23, 2007).

28. Electronic Frontier Foundation (EFF) amicus brief for KSR Int'l Co. v. Teleflex Inc., http://www.eff.org/legal/cases/KSR_v_Teleflex/ksr_amicus.pdf (last visited May 23, 2007).

29. KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1739 (2007).

30. Also called academic licenses, such as the Berkeley Software Distribution ("BSD") License, these licenses allow the software to be freely used, modified, and distributed with no obligation on the licensee to distribute derivative works and publish the source code of derivative works under the same license. Rosen, *supra* note 5, *at* 69.

31. Allows software to be freely used, modified, and distributed, but with obligation on the licensee to distribute derivative works and publish the source code of the derivative works under the same license. *Id. at* 70.

32. *Introduction to Linux and Linux.com*, July 21, 2004, http://www.linux.com/article.pl?sid=03/09/02/1552250 (last visited May 23, 2007).

33. Apache Software Foundation, http://projects.apache.org/index.html (last visited May 23, 2007).

34. Rosen, *supra* note 5, *at* 91.

35. *Id*.

36. *Id*.

37. Apache License, Version 2.0, § 3, *available at* http://www.apache.org/licenses/LICENSE-2.0.html (last visited May 23, 2007).

38. *Id*.

39. "...each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted..." *Id*.; Raymond T. Nimmer, *Legal Issues In Open Source And Free Software Distribution*, 885 PLI/Pat 33, 103 (2006).

40. "…If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed." Apache License, Version 2.0, *supra* note 36, *at* § 3.

41. Nimmer, *supra* note 39, *at* 104.

42. Mikko Välimäki, THE RISE OF OPEN SOURCE LICENSING 149 (2005).

43. Mozilla Public License Version 1.1, *available at* http://www.mozilla.org/MPL/MPL-1.1.html (last visited May 23, 2007).

44. Andrew M. St. Laurent, OPEN SOURCE & FREE SOFTWARE LICENSING 62-63 (2004).

45. The Open Source Definition, *available at* http://opensource.org/docs/definition.php (last checked May 23, 2007); Rosen, *supra* note 5, *at* 9-11.

46. John C. Yates et al, *Open Source Software Licenses: Perspectives of the End User and the Software Developer*, 823 PLI/Pat 97, 124 (2005).

47. *Common Development and Distribution License (CDDL) Information*, January 24, 2004, http://www.sun.com/cddl (last visited May 23, 2007).

48. MPL FAQ, http://www.mozilla.org/MPL/mpl-faq.html (last visited May 23, 2007).

49. Mozilla Public License Version 1.1, *supra* note 43, *at* § 3.7.

50. Mozilla & Netscape Public Licenses, *available at* http://www.mozilla.org/MPL/ (last visited May 23, 2007).

51. Rosen, *supra* note 5, *at* 147.

52. Mozilla Public License Version 1.1, *supra* note 43, *at* § 3.

53. *Id*. *at* § 8.

54. *Id*.

55. *Id*.

56. *Id*.

57. Nimmer, *supra* note 39, *at* 105.

58. *Id*.

59. *Id*.
60. Richard M. Stallman, founder of the free software movement and author of the GNU GPL, released version 2 in 1991, http://www.fsf.org/news/gpl3.html (last visited May 23, 2007).
61. Robert W. Gomulkiewicz, *General Public License 3.0: Hacking the Free Software Movement's Constitution*, 42 Hous. L. Rev. 1015, 1022 (2005).
62. GPL Version 2.0, *supra* note 12.
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67. *Id*.
68. Välimäki, *supra* note 42, *at* 181.
69. GPL Version 2.0, *supra* note 12, *at* § 7.
70. *Id*. *at* Preamble.
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73. Peter Galli, *Free Software Foundation Explains GPL 3.0 Vision*, January 16, 2006, http://www.eweek.com/article2/0,1895,1911786,00.asp (last visited May 23, 2007).
74. Copenhaver, *supra* note 14, *at* 180.
75. Nimmer, *supra* note 39, *at* 105.
76. Copenhaver, *supra* note 13, *at* 180.
77. *Id. at* 180, 193.
78. *Id. at* 154.
79. GPL Version 3.0 - Third Discussion Draft, *supra* note 13.
80. *Id. at* § 11.
81. *Id*.
82. Copenhaver, *supra* note 14, *at* 181.
83. GPL Version 3.0 - Third Discussion Draft, *supra* note 13, § 11.
84. "Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims in its contribution, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contribution." *Id*.
85. "[A] 'patent license' means a patent license, a covenant not to bring suit for patent infringement, or any other express agreement or commitment, however denominated, not to enforce a patent." *Id*.
86. "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 so available, or (2) disclaim the patent license for this

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87. Copenhaver., *supra* note 14, *at* 194.

88. GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* § 11.

89. GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* § 11; Copenhaver, *supra* note 14, *at* 194.

90. Robert McMillan, *New GPL takes shots at patents, DRM - Software license calls for distributors to "shield" users from patent claims*, http://www.computerworld.com/governmenttopics/government/legalissues/story/0,10801,107800p2,00. (last visited May 23, 2007).

91. Transcript of Richard Stallman on GPLv3 in Brussels, Belgium, April 1, 2007, http://fsfeurope.org/projects/gplv3/brussels-rms-transcript#ms-novell (last visited May 23, 2007).

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93. Ryan Paul, *New GPL 3 draft resolves some contentious issues*, March 29, 2007, http://arstechnica.com/news.ars/post/20070329-new-gpl-3-draft-resolves-some-contentious-issues.html (last visited May 23, 2007).

94. Transcript of Richard Stallman on GPLv3 in Brussels, *supra* note 91.

95. *Id*.

96. GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* preamble.

97. "If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license providing freedom to use, propagate, modify or convey a specific copy of the covered work to any of the parties receiving the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it." GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* § 11.

98. Jacqueline Emigh, *GPL 3: Will Somebody Get Short-Changed, No Matter What? Fork in the Road Ahead?*, April 9, 2007, http://linuxplanet.com/linuxplanet/reviews/6377/1/ (last visited May 23, 2007).

99. "You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a patent license (a) in connection with copies of the covered work conveyed by you, and/or copies made from those, or (b) primarily for and in connection with specific products or compilations that contain the covered work, which license does not cover, prohibits the exercise of, or is conditioned on the non-exercise of any of the rights that are specifically granted to recipients of the covered work under this License[, unless you entered into that arrangement, or that patent license was granted, prior to March 28, 2007]." GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* § 11; Transcript of Richard Stallman on GPLv3 in Brussels, *supra* note 91.

100. Ryan Paul, *New GPL 3 draft resolves some contentious issues*, March 29, 2007, http://arstechnica.com/news.ars/post/20070329-new-gpl-3-draft-resolves-some-contentious-issues.html (last visited May 23, 2007).

101. If Novell does not get grandfathered into GPL 3 compliance, Novell's SUSE Linux

may turn into a "fork" of Linux. Emigh, *supra* note 98.

102. Sun Microsystems is considering releasing Solaris under GPL 3.0 in addition to the Community Development and Distribution License that currently governs the Unix variant. This move could raise possibilities of open-source cooperation between Linux and Sun's Solaris operating system, but the legal barriers would exist if Linux refuses to license under GPL 3.0. Stephen Shankland, *Sun considers GPL 3 license for Solaris*, http://www.zdnetasia.com/news/software/0,39044164,39309001,00.htm (last visited May 23, 2007).

103. GPL Version 3.0 - Third Discussion Draft, *supra* note 13, *at* § 7.

104. Laura Majerus, *Patent Rights and Open Source: Can They Co-exist?*, http://www.fenwick.com/docstore/Publications/IP/Patent_Rights.pdf (last visited May 23, 2007).

105. *Unless Patent Provision Changes, HP May Stick with GPL v2*, http://www.itbusinessedge.com/item/?ci=19130 (last visited May 23, 2007).

106. Stephen Shankland, *HP may fork the GPL*, August 3, 2006, http://news.zdnet.co.uk/software/linuxunix/0,39020390,39280371,00.htm (last visited May 23, 2007).

107. *Id*.

108. *Microsoft and Novell Announce Broad Collaboration on Windows and Linux Interoperability and Support*, November 2, 2006, http://www.novell.com/news/press/item.jsp?id=1196 (last visited May 23, 2007).