

**ELECTRONIC FRONTIER FOUNDATION BRIEFING PAPER ON  
TECHNOLOGICAL PROTECTION MEASURES PREPARED FOR THE WIPO  
INTER-SESSIONAL INTERGOVERNMENTAL MEETING ON THE DEVELOPMENT  
AGENDA PROPOSAL & FOURTH SESSION OF THE PERMANENT COMMITTEE ON  
COOPERATION RELATED TO INTELLECTUAL PROPERTY DEVELOPMENT  
APRIL 11-15, 2005**

## **I. Executive Summary**

As the Development Agenda proposal notes, “the ongoing controversy surrounding the use of technological protection measures in the digital environment is of great concern to developing countries”<sup>1</sup>.

Rightsholders originally obtained legal sanctions for circumventing technological protection measures (TPMs) as a means of protecting their copyrighted works. In practice, though, overbroad TPM anticircumvention laws have extended into other sectors beyond the boundaries of copyright law. TPM regimes are built on copyright, but go beyond it. It is an offence to circumvent a TPM even if the underlying use of a protected work would not be copyright infringement. In the several years that TPM regimes have been legally enforced, these regimes have proven to be ineffective at protecting rightsholders’ copyrighted content, but at the same time, they have caused substantial harm to consumers, scientific research, freedom of expression, competition and technological innovation.

Overbroad TPM anticircumvention laws pose even greater dangers for developing countries that do not have established legal institutions and regulatory processes to reign-in their over-reaching effects and that have a compelling need to make lawful but unauthorized uses of works for developmental purposes. In developing countries TPM anticircumvention laws are likely to:

- (1) override national copyright exceptions and limitations, and hamper Member Countries’ efforts to introduce new exceptions;
- (2) impair access to knowledge and increase the cost of accessing information for educational uses, expanding the knowledge gap between industrialized and developing economies;
- (3) chill scientific research and publication;
- (4) restrict legitimate competition and entrench monopoly-priced consumer goods;
- (5) inhibit the transfer of technology and stifle domestic technological innovation;
- and
- (6) preclude free and open source software.

For countries that are net importers of copyrighted information goods, TPM laws will result in a transfer of wealth from domestic economies to foreign rightsholders, without any guarantee of reciprocal investment in the local cultural economy. And, in countries that do not have existing industrial capacity, TPM laws are likely to impede technology transfer. Before developing countries are pressed to adopt new TPM laws in Articles 16 and 17 of the

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<sup>1</sup> Proposal to Establish a Development Agenda, proposed by Brazil and Argentina, and endorsed by the 14 members of the Group of Friends of Development, WIPO document WO/GA/31/11, page 3.

proposed Broadcasting Treaty currently under discussion in the SCCR, or to implement TPM laws through the WCT, WPPT or trade negotiations, they should understand the costs to their national interests of doing so.

This briefing paper for WIPO national delegates explains the international legal framework governing TPMs, describes the harms overbroad legal protection for TPMs have caused in developed countries and the likely impact for developing countries, and makes recommendations for WIPO technical assistance for Member Countries that are considering TPM implementation, to preserve public interest flexibilities and existing national copyright law exceptions, and ensure that legal protection for TPMs is appropriately cabined to the boundaries of copyright law.

## **II. Commenting Party**

The Electronic Frontier Foundation (EFF) is an international NGO based in San Francisco devoted to protecting civil liberties, freedom of expression, and the public interest in the digital environment. Founded in 1990, EFF is funded primarily by its 10,000 individual members, and publishes a weekly newsletter with over 50,000 subscribers.

## **III. International Obligations Concerning Technological Protection Measures**

Many nations either currently have an obligation, or will shortly be required to enact laws protecting rightsholders' TPMs, under three bases:

1. the 1996 WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT);
2. the proposed WIPO Broadcasting Treaty; or
3. bilateral, regional or hemispherical free trade agreements.

In addition, Member Countries may choose to adopt technology mandates and anticircumvention laws to reinforce inter-industry design standards, such as the United States' Federal Communications Commission Broadcast Flag rule.

### ***(1) WCT and WPPT – Copyright and Related Rights Holder TPMs***

The 1996 WCT and WPPT contain the international obligations requiring legal protection for technological measures that are used to control access to, and use of, copyrighted works. Article 11 of the WCT requires signatories to:

*“provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under [the WCT] or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law.”*

Article 18 of the WPPT contains a similar obligation for TPMs used on works by related rights holders. Article 12 of the WCT and Article 19 of the WPPT contain separate but related obligations for laws protecting rights management information encoded in copyrighted content.

As both a recent WIPO report and a Canadian government report have noted, the WCT and WPPT leave quite a bit of flexibility to signatories in how to implement these obligations in

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national law.<sup>2</sup> Legal regimes protecting rightsholder TPMs based on the WCT and WPPT framework have been implemented in the United States, Japan, Australia<sup>3</sup> and in Europe<sup>4</sup>. Canada and New Zealand are currently considering implementation proposals. There is considerable variation in both the range of permitted circumvention act exceptions, and the types of circumvention tools that are regulated under these implementations.<sup>5</sup>

WCT and WPPT signatories are required to provide “adequate legal protection” and “effective legal remedies” against circumvention, but are not required to prohibit all acts of circumvention. The treaties leave room for signatories to permit exceptions where circumvention of a TPM is necessary to exercise a right under existing national law – for instance, a copyright law exception for disabled persons. The WCT and WPPT also do not require signatories to outlaw all tools, technologies and devices that can be used to circumvent TPMs, so long as “effective legal remedies” in national laws are available to rightsholders. For instance, the Australian TPM legislation has a procedure for authorizing use of circumvention tools for certain non-infringing “permitted purposes” under Australian copyright law,<sup>6</sup> and we understand that the recently announced Canadian TPM legislation will not incorporate a ban on distributing all circumvention tools.<sup>7</sup>

## ***(2) Proposed WIPO Broadcasting Treaty – Broadcaster TPMs***

Articles 16 and 17 of the proposed WIPO Broadcasting Treaty<sup>8</sup> under discussion in the Standing Committee on Copyright and Related Rights require signatories to enact laws prohibiting circumvention of technological protection measures used by broadcasters, cablecasters and webcasters. Signatories would be required to enact a further layer of laws,

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<sup>2</sup> “Current Developments in the Field of Digital Rights Management”, prepared by Jeffrey P. Cunard, Debevoise and Plimpton, Washington D.C. for World Intellectual Property Organization Standing Committee on Copyright and Related Rights Tenth Session, 2003, WIPO document SCCR/10/2, at: <[http://www.wipo.int/documents/en/meetings/2003/sccr/doc/sccr\\_10\\_2\\_rev.doc](http://www.wipo.int/documents/en/meetings/2003/sccr/doc/sccr_10_2_rev.doc)> “Technological Protection Measures – Part 1: Trends in Technological Protection Measures and Circumvention Technologies”, report prepared for Canada Heritage, June 2003, by Canadian LawFirm, Nelligan, O’Brien Payne, available at <[http://www.pch.gc.ca/progs/ac-ca/progs/pda-cpb/pubs/protection/3\\_e.cfm](http://www.pch.gc.ca/progs/ac-ca/progs/pda-cpb/pubs/protection/3_e.cfm)>

<sup>3</sup> Note that Australia had not formally ratified the WCT and WPPT at the time of enacting its TPM regime in section 116A of the Copyright Act of 1968 but was subsequently required to do so as a term of the U.S. – Australia FTA.

<sup>4</sup> via Article 6 of the Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the Harmonisation of certain aspects of Copyright and Related Rights in the Information Society, and Article 7 of the EU Council Directive of 14 May 1991 on the Legal Protection of Computer Programs (91/250/EEC), enacted in national laws.

<sup>5</sup> For a more detailed discussion of the different implementation regimes see note 2.

<sup>6</sup> See section 116A of the Copyright Act of 1968, <[http://bar.austlii.edu.au/au/legis/cth/consol\\_act/ca1968133/](http://bar.austlii.edu.au/au/legis/cth/consol_act/ca1968133/)>

<sup>7</sup> However, provision of tools that are used to circumvent for the purpose of infringing the underlying copyrighted work may be a factor in determining secondary copyright liability for authorizing infringement. See Canadian Government Statement on Proposals for Copyright Reform, at <<http://strategis.ic.gc.ca/epic/internet/incrp-prda.nsf/en/rp01142e.html>>

<sup>8</sup> SCCR/12/2, at <[http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=33545](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=33545)>

applying over and above the existing WCT and WPPT copyright holder TPM anticircumvention laws.

EFF believes that Articles 16 and 17 should not be included in the proposed treaty because they would undermine many of the goals of the Development Agenda proposal. These Articles would require Member Countries to adopt extensive mandates over the design of commonplace technologies like television, radios and even personal computers, which will constrain technological development. A Broadcaster TPM regime will also harm the exchange of information in the public domain. For the reasons set out in EFF's previous comments on the proposed Treaty, a broadcaster TPM regime will be ineffective to achieve its purpose, but is likely to have greater adverse impact than the WCT and WPPT TPM regime.<sup>9</sup>

### ***(3) Bilateral, Regional and Hemispherical Free Trade Agreements***

While the WCT and WPPT permit Member Countries a certain amount of flexibility in implementing TPM regimes, the recent free trade agreements that the United States has entered into with its trading partners do not. In 1998, the United States enacted the Digital Millennium Copyright Act (DMCA) to implement its TPM obligations under the WCT.<sup>10</sup> The DMCA bans both the act of circumvention and tools, technologies and devices that are primarily designed or useful for circumvention. It is widely acknowledged that the DMCA anticircumvention provisions go beyond what was necessary to implement the WCT obligations. The U.S.'s chief policy spokesperson and proponent of the DMCA, Assistant Secretary of Commerce and Commissioner of Patents and Trademarks, Bruce A. Lehman, admitted during his congressional testimony in the debates leading to the passage of the DMCA, that the U.S. anticircumvention provisions went beyond the requirements of the WCT and WPPT.<sup>11</sup>

An obligation to adopt TPM legislation based on the DMCA model has been included in the last seven bilateral or regional free trade agreements that the U.S. has entered into with its

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<sup>9</sup> Statement of the Electronic Frontier Foundation on the Proposed WIPO Broadcasting Treaty to the SCCR Eleventh Session, June 7-9, 2004, available at <[http://www.eff.org/IP/WIPO/20040607\\_wipo\\_tpms.pdf](http://www.eff.org/IP/WIPO/20040607_wipo_tpms.pdf)>

<sup>10</sup> As delegates may remember, the diplomatic conference leading up to the 1996 WIPO Treaties rejected a US proposal for a more restrictive TPM provision banning both circumvention tools and acts, which was subsequently enacted as the US DMCA, in favor of the more flexible formulation in Article 11 of the WCT. See Pamela Samuelson, *The U.S. Digital Agenda at the World Intellectual Property Organization*, 37 Virginia J. Int. Law 369 (1997), available at <http://www.sims.berkeley.edu/~pam/courses/cyberlaw97/docs/wipo.pdf> and Article 13 of the Basic Proposal for the Substantive Provisions of the Treaty on Certain Questions Concerning the Protection of Literary and Artistic Works to be considered by the Diplomatic Conference, December 2-20, 1996, Memorandum prepared by the Chairman of the Committees of Experts, <<http://www.copyright.gov/wipo/wipo4.html>>

<sup>11</sup> See U.S. – Australia Free Trade Agreement signed May 18, 2004, Article 17.4(7) of Intellectual Property chapter, <[http://www.ustr.gov/Trade\\_Agreements/Bilateral/Australia\\_FTA/Final\\_Text/Section\\_Index.html](http://www.ustr.gov/Trade_Agreements/Bilateral/Australia_FTA/Final_Text/Section_Index.html)> and Copyright Act of 1968 (Cth), section 116A-D, <[http://bar.austlii.edu.au/au/legis/cth/consol\\_act/ca1968133/s116a.html](http://bar.austlii.edu.au/au/legis/cth/consol_act/ca1968133/s116a.html)>.

trading partners.<sup>12</sup> The United States has sought “harmonization” with the DMCA model even where countries have already adopted their own TPM legislation. For instance, the recently concluded U.S.-Australia FTA requires Australia to remove its non-infringing permitted purposes exceptions, and to adopt the 7 narrow circumvention exceptions contained in the DMCA.<sup>13</sup> The United States is currently negotiating free trade agreements with various countries, including several developing countries.<sup>14</sup> In addition, the current third draft of the Free Trade Area of the Americas agreement involving the 34 countries of the Western Hemisphere, requires signatories to pass anticircumvention laws. One version of that provision would be more restrictive than the DMCA.<sup>15</sup>

#### **IV. TPM Anticircumvention Laws in the Developed World**

In the developed world, technological measures have failed at protecting intellectual property rights. At the same time, technological measures have imposed significant collateral costs on the public interest that outweigh any benefit to rights holders in those countries that have implemented the WCT and WPPT.

The collateral damage caused by legal measures aimed at backing technological protection measures has proven to be substantial. For instance, rightsholder technological measures in national legislation have resulted in significant harm to competition, technological innovation, scientific research and freedom of expression. For all that, these measures have not had *any* appreciable effect in preventing or even slowing widespread digital infringement. For instance, despite prohibitions on the circumvention of technological protection measures, infringing copies of popular movies and DVD copying programs remain widely available through unauthorized channels.

#### **V. TPM regimes are likely to be even more dangerous to developing countries**

If TPM regimes have not been successful in developed countries that have substantial financial resources to spend on enforcement, they are not likely to protect the interests of rightsholders in developing countries where resources are more scarce. Therefore TPM regimes will not be able to provide local creators and cultural industries with a basis for sustainable economic development. To the contrary, for net importers of foreign informational products, TPM regimes will result in a transfer of wealth to foreign rightsholders, with no promise of reciprocal investment in local culture.

Overbroad TPM regimes are likely to be particularly dangerous to developing countries’ national interests for several reasons:

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<sup>12</sup> Jordan (Article 4(13)), Singapore (Article 16.4(7)), Chile (Article 17.7(5)), CAFTA (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and the Dominican Republic) (Article 15.5(7)), Australia (Article 17.4(7)), Morocco (Article 15.5(8)) and Bahrain (Article 14.4(7)), available at <[http://www.ustr.gov/Trade\\_Agreements/Section\\_Index.html](http://www.ustr.gov/Trade_Agreements/Section_Index.html)>

<sup>13</sup> Article 17.4(7)(e)-(f) of U.S. – Australia FTA,

<sup>14</sup> Free trade agreements are currently being negotiated with Panama, the Andean Community (Peru, Ecuador, Colombia, (Bolivia observing)), the South Africa Customs Union (Botswana, Lesotho, Namibia, South Africa and Swaziland) and Thailand.

<sup>15</sup> Second formulation of Article 22, Subsection B.2.c of the third draft of the Intellectual Property chapter of the Free Trade Area of the Americas Agreement. See EFF Position Paper, FTAA SOC Third Issue Meeting, January 28, 2004 <[http://www.eff.org/IP/FTAA/EFF\\_FTAA\\_Position.pdf](http://www.eff.org/IP/FTAA/EFF_FTAA_Position.pdf)>

***(1) TPM regimes override national copyright law exceptions and eliminate public interest flexibilities.***

TPM regimes allow foreign rightsholders to use TPMs to override local copyright law exceptions and limitations. As the Development Agenda proposal notes, intellectual property protection is a policy instrument for achieving the transfer and dissemination of technology, knowledge growth and material progress, and not an end in itself. The appropriate level of intellectual property protection must be assessed on a country-by-country basis for its impact on national development goals [Development Agenda proposal, page 2]. TPM regimes, however, do not allow for national norm setting. Instead, as the United States' experience demonstrates, legally sanctioned TPMs are used to override exceptions and limitations in national copyright law because they allow rightsholders to set the boundaries for access and use of technologically protected works. For instance, U.S. copyright law has a statutory exception which permits non-profit organizations to create Braille translations of copyrighted books for blind persons. However, under the DMCA it is not possible to make use of this exception for technologically-protected e-books. At the international level, foreign rightsholders can choose to release their works with technological protection and thereby trump national copyright law exceptions. Similarly, TPMs backed by overbroad anticircumvention laws are likely to hamper efforts by national governments to create new copyright exceptions to meet domestic needs, such as for distance education. Instead of allowing for national variation to meet individual countries' needs, TPMs thus enforce a narrowing of norms, imposing globally the most restrictive rights regime.

***(2) TPM regimes are likely to impair access to knowledge***

TPM regimes are likely to increase the cost of accessing information. As information increasingly becomes available only in technologically protected form, fair dealing and personal copying exceptions that previously guaranteed access will be technologically precluded. Students and educators will be banned from circumventing TPMs on technologically-protected digital material that they have purchased. In addition, local technology vendors will be banned from producing or selling technologies and devices that educators need if they are to use copyright exceptions that would otherwise apply to protected digital materials that they have purchased.

TPMs have also been used to curtail first sale rights and exhaustion regimes, and the national copyright law exceptions upon which libraries rely to provide their services. This is likely to preclude the development of libraries of digital books and necessary resources for distance education and scientific research. TPMs backed by anticircumvention laws may prevent or restrict libraries from copying, sharing or loaning out technologically-protected digital material. For example, unlike a printed book, the TPM permissions on a purchased e-book may prevent its sale, loan, or restrict how many times it may be viewed.

In addition, TPMs are likely to reduce availability of public domain works. TPMs do not expire when the copyright protection term ends, so a work that would otherwise fall into the public domain will not be accessible if it is technologically restricted. TPMs can also be applied to works that are already in the public domain. TPMs may also be applied to works that would not be copyrightable, for instance, because they are purely factual in nature. The

WCT and WPPT only require legal protection for rightsholders' TPMs that protect copyrighted works, but difficult questions arise where a public domain work is stored together with a copyrighted work in a technologically-protected format. This has received considerable attention in the U.S., where legal academics have disagreed about whether the U.S. anticircumvention laws ban educators from circumventing TPMs on public domain works, However, as a practical matter, it is difficult for educators to find the technical means to do so because of the prohibition on distributing circumvention tools. In addition, in the usual case, where a public domain work is stored together with works still under copyright in a technologically-protected compilation, it would arguably be illegal under the DMCA to circumvent to access the public domain work.<sup>16</sup>

As the use of TPMs become more widespread for electronic books and scientific journals, TPM regimes have the potential to restrict developing nations' access to essential information for education and scientific research, increasing the knowledge gap between industrialized and developing countries.

### ***(3) TPM Regimes have a Chilling Effect on Scientific Research and Publication***

U.S. copyright owners have used the DMCA's provisions to cast a chill on free expression and legitimate scientific research. In 2001 a music industry organization threatened to sue a team of researchers for violating the DMCA when they attempted to publish a research paper describing their findings on security vulnerabilities in digital watermark technology. The music industry group considered that the information in the research paper was a "circumvention device" and publishing the paper would violate the DMCA's ban on distributing "circumvention tools". It also sent letters threatening DMCA liability to the researchers' respective employers and the organizers of the conference at which the paper was to have been presented.

The chilling effect on scientific research and publication has been profound. U.S. and foreign scientists have refused to publish research on access control vulnerabilities, or have removed previously published research from the Internet due to fear of DMCA liability. Foreign scientists have refused to travel to the U.S. and several encryption conferences have been moved outside of the United States.

In particular, there is growing concern within the U.S. about the impact of the DMCA on computer security research. In October 2002, former U.S. White House Cyber Security advisor, Richard Clarke, admitted that the DMCA had chilled security research and called for DMCA reform.

### ***(4) TPM regimes may be used to restrict legitimate market competition and entrench the use of monopoly-priced proprietary products and technology.***

As the Development Agenda proposal notes "*Particular attention should be paid to the need to ensure that enforcement procedures are fair and equitable and do not lend themselves to*

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<sup>16</sup> See U.S. 2003 DMCA anticircumvention rule-making inquiry, request for consumer exception to circumvent in this situation, <<http://www.copyright.gov/1201/2003/comments/035.pdf>> not granted by Librarian of Congress:

< <http://www.copyright.gov/1201/>>

*abusive practices by right holders that may unduly restrain legitimate competition."*  
[Development Agenda proposal, page 4]

TPM regimes can be used to facilitate anticompetitive ends. First, they can be used to enforce the use of proprietary products or technology at monopoly prices. U.S. copyright owners have used TPMs to lever control over new uncopyrightable technologies that interoperate with their copyrighted works and to block their competitors' products coming to market and the use of "unauthorized" open source products. For instance, Lexmark, the second largest printer distributor in the United States, has used a legally sanctioned TPM to try to ban the sale of recycled Lexmark printer cartridges, which were being sold to consumers at lower prices than new cartridges and Lexmark's own "authorized" remanufactured printer cartridges. Further, an automated garage door manufacturer sued its main competitor for distributing a universal remote control that can interoperate with its garage doors and several other brands of garage doors<sup>17</sup>.

Second, they can be used to obtain rights beyond those granted by national and international copyright regimes. Rightsholders have used legally sanctioned TPMs to effect geographical market segmentation through region-coding technologies on DVDs and video-games. Region-coding supports the business model for motion picture distribution that has been in use in the analog world for the last two decades but it is not a right protected under copyright law, and is flatly inconsistent with many nations' laws on parallel importation. But it is not limited to luxury items such as DVDs and video games. Rightsholders' use of TPM regimes to create market segmentation by which they may discriminate as to price and availability of products and technologies is rightfully of concern to developing countries. For instance, it appears that "authorized" printer cartridges are also now region-coded, so developing countries who seek to benefit from higher levels of competition and market-driven prices for goods in the developed world will be technologically blocked from doing so.<sup>18</sup>

#### ***(5) TPM regimes are likely to inhibit the transfer of technology and stifle technological innovation***

Technology transfer relies on direct licensing and also on the freedom to understand technologies and to manufacture locally appropriate add-ons, replacements and alternatives. This process relies on the lawfulness of investigation and reverse-engineering – of "lifting up the bonnet and looking at the engine." TPM regimes inhibit the indirect transfer of technology in two ways. First, legally protected TPMs hamper investigation, because researchers are unwilling to expose themselves to liability for seeking to understand technologies that involve TPMs. In addition, TPM regimes harm knowledge transfer by imposing punitive civil and criminal sanctions on those who document the workings of technologies for the purposes of creating interoperable systems. TPM regimes treat these

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<sup>17</sup> For further details, see EFF Report "Unintended Consequences: Five Years Under the Digital Millennium Copyright Act", at <[http://www.eff.org/IP/DMCA/unintended\\_consequences.php](http://www.eff.org/IP/DMCA/unintended_consequences.php)>

<sup>18</sup> David Pringle and Steve Stecklow, "Electronics with Borders: Some Work Only in the U.S.", Wall Street Journal, January 17, 2005, reporting on Hewlett Packard ink cartridges <[http://online.wsj.com/article\\_email/0,,SB110593238031627672-1FjgYNmlad4nJysa3qHa6yAm5,00.htm](http://online.wsj.com/article_email/0,,SB110593238031627672-1FjgYNmlad4nJysa3qHa6yAm5,00.htm)>

engineers and entrepreneurs as infringers.

In countries that do not have the necessary infrastructure and institutional capacity to absorb new technologies, the use of TPM regimes therefore precludes the establishment of such capacity. As the Development Agenda proposal notes, even in countries that have a high degree of absorptive technological capacity "higher standards of intellectual property protection have failed to foster the transfer of technology through foreign direct investment and licensing." [Development Agenda proposal, page 3]. TPM regimes reinforce this tendency. In the United States, incumbents have used TPMs to block their competitors from creating and selling innovative new products that interoperate with the incumbents' copyrighted works despite the existence of DMCA exceptions for reverse-engineering to create interoperable products and for security testing,

***(6) TPM regimes threaten free and open source software development***

Developing countries are increasingly turning to free (libre) and open source software such as the Mozilla Internet browser and OpenOffice application suite to realize the benefits of information communication technologies for their citizens. TPM regimes pose a considerable hurdle to achieving that goal. TPM regimes threaten the development of free and open source software products in two ways. First, TPM regimes directly endanger reverse engineering to create interoperable programs. Reverse engineering is critical to encourage competition and innovation in the face of monopolistic practices in the software industry. Legitimate reverse engineering has traditionally been permitted in U.S. copyright law. However, in the United States companies eager to impair market competition have turned to TPMs and the DMCA in an effort to hinder the creation of innovative interoperable products. For instance, the video game manufacturer Blizzard, Inc. has sued the developers of a reverse-engineered open source game server that interoperated with Blizzard's proprietary games and allowed owners to play their games over the Internet, in competition with Blizzard's own proprietary game server.

Second, when the licensing terms for proprietary Digital Rights Management (DRM) schemes include a "robustness" requirement, requiring manufacturers to ensure that their software or devices are resistant to end-user modifications, that requirement is inconsistent with free and open source software, which by definition is modifiable. Its source code is openly available for all to see and improve upon it. Indeed free software licensed under the GNU Public License (like the popular GNU/ Linux operating system) actually requires that the source code of a program incorporating free software must be made available with any distribution of that software. Free and open source software developers cannot satisfy a robustness design requirement that excludes modification by its users, and so will be unable to obtain a license to use the relevant DRM. Moreover, as described above, attempts to create software without a license that interoperates with the DRM-protected content may run afoul of TPM anticircumvention laws, leaving many free and open source software developers unwilling to expose themselves to the potential liability of doing so. As a result, in countries which have adopted broad TPM regimes it is less likely that innovative free and open source software products will be developed to interact with technologically-protected content, or even with unprotected content stored in the same formats.

An additional threat to free and open source software - beyond that posed by

anticircumvention rules alone - exists from efforts to mandate by law that all products of a certain type implement TPMs. While anticircumvention rules have usually left inventors free to decide whether to implement TPMs or not (hence preserving the right to create devices that implement only open standards), some copyright holders have objected to the very existence of certain TPM-free devices, viewing them as unwelcome competition to more restrictive products. Various ad hoc technology mandate rules have thus been proposed on a technology-by-technology and jurisdiction-by-jurisdiction basis with the aim of requiring some class of devices to apply restrictions as if a TPM were present, even when no technical means was initially applied by a copyright holder. Because such rules may apply even in the absence of a TPM, they are more restrictive than anticircumvention rules alone.

Since such mandates typically include an obligation to prevent end-user modification, they also serve to exclude free and open source software from the applications they regulate. They also provide an artificial subsidy to TPM technologies by forcing parties with no interest in accessing restricted works to pay for TPM implementations they would not have used. However, there is no indication that technology mandates are any more effective than anticircumvention rules at preventing copyright infringement.

A well-known contemporary example of a technology mandate that threatens free and open source software is the United States' Broadcast Flag rule.<sup>19</sup> The inter-industry Broadcast Protection Discussion Group created the Broadcast Flag proposal, which was subsequently endorsed by the Federal Communications Commission. Under the FCC's rule, any device or technology capable of receiving digital television signals that is manufactured or imported in to the United States after 1 July 2005 must look for and respond to a digital "broadcast flag" that can be transmitted with the broadcast program. The broadcast flag applied to television broadcast over the air, without encryption (or "in the clear"), and by itself can only act as an advisory, signaling the copyright owner's preference about redistribution of the program.

Since it would be possible to ignore mere notification, to be effective at stopping redistribution, the broadcast flag rule requires that (1) the devices that can interoperate with digital television content must look for and respond to the standard's particular TPM, the broadcast flag, and (2) there are national anticircumvention laws legally prohibiting any attempt to bypass the search and respond requirement or to build another interoperable device, and (3) a robustness rule requiring devices to be resistant to tampering or modification by end users. Thus regulation designed to ensure that these unencrypted broadcasts are not redistributed further turns into a technology licensing regime that prohibits manufacture of devices that can be used and built upon by free and open source software.

For example, any device that receives free, over-the-air high definition television signals in the United States (including personal computers and components) must prevent any digital redistribution or output to unauthorized devices. In the absence of the Broadcast Flag rule it would be possible to use a digital television tuner card, together with the open source MythTV software and a general-purpose computer, to create a fully-featured digital television video recorder that can record and replay over-the-air broadcast television programs.

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<sup>19</sup> *In the Matter of Digital Broadcast Content Protection*, MB Docket No. 02-230, Report and Order and Further Notice of Proposed Rule, FCC No. 03-273 (rel. Nov. 4, 2003). The recording industry is also seeking a technology mandate for digital radio broadcasting: *See* FCC MM Docket No. 99-325.

However, after 1 July 2005, the open tuner cards will become illegal and thus further installations of HD-MythTV will be impossible.

At the international level, rightsholder participants in the Digital Video Broadcasters' Forum's Copy Protection Content Management negotiation are seeking national technology mandates and anticircumvention protection via Articles 16 and 17 of the proposed WIPO Broadcasting Treaty for a similar but broader digital rights management standard for content protection. That standard would apply to all digital television receiving devices sold in Europe, many parts of Asia and Australia.<sup>20</sup>

Articles 16 and 17 will require Member Countries to adopt design mandates on an unprecedented range of technologies. This is likely to stifle technological innovation and reduce access to information for citizens in developing countries. Given the substantial collateral costs that such a TPM regime will impose on various sectors of national economies, in the absence of clear evidence that this sort of TPM regime will provide any benefits to those who seek it, EFF believes that it is premature to adopt a further layer of broadcaster TPMs over and above the existing rightsholder TPM protection regime in the WCT and WPPT.

## **VI. Recommendations:**

EFF respectfully makes the following observations and recommendations:

1. As an agency of the United Nations, WIPO has an institutional obligation to facilitate and implement the wider development perspective of the United Nations. In addition, as recognized in the 1974 Agreement between the United Nations and WIPO, WIPO has an institutional mandate to facilitate the transfer of technology and the building of technical capacity in developing countries.
2. This broader perspective should infuse the content and delivery of WIPO's technical assistance to developing countries. In providing technical assistance to developing countries on implementation of their TPM obligations (whether under WIPO instruments or their trade obligations pursuant to WIPO's Agreement with the WTO), WIPO should take account of existing public interest flexibilities contained in international instruments and be cognizant of preserving public policy space for the discussion and implementation of new exceptions and limitations appropriate to the specific development needs of the countries to which it provides assistance that are consistent with Article 13 of the Trade Related Aspects of Intellectual Property agreement, Article 10 of the WCT, Article 16 of the WPPT, and Article 9 of the Berne Convention.
3. To provide individualized, development-oriented technical assistance on TPM implementation to developing countries, EFF respectfully recommends that WIPO

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<sup>20</sup> See *Protecting Digital Broadcast Content From Unauthorized Redistribution – An Issue For All Broadcasters*, Presentation to the DVB World, Dublin, Ireland, March 2005, by Spencer Stephens, North American Broadcasters Association, <http://www.iab.ch/dvbworld2005.htm> and <http://www.iab.ch/dybworld2005/NABA%20DVB%20World%20Presentation.ppt> Slide 19 explaining need for Broadcasting Treaty TPM provisions.

should go beyond merely providing copies of existing TPM implementations in national law (such as the DMCA model) and should evaluate the specific development needs of countries to which it is providing assistance and carefully tailor its technical assistance to facilitate those goals.

4. As the Proposal of the Group of Friends of Development [WIPO Document IIM/1/4] notes, access to knowledge and technology is indispensable for social and economic development and the well-being of people in all countries. To provide more effective technical assistance to its developing country members, WIPO should also engage in critical analysis of the impact of existing TPM regime implementations in national laws. EFF respectfully recommends that WIPO undertake a study of the costs and benefits of TPM regime implementations in those countries which have done so, and provide analysis of the likely impact of TPM regime implementation for developing countries that have acceded to and are transposing WCT and WPPT TPM obligations, and those negotiating trade agreements with TPM regime implementation obligations. The study should also analyze the likely impact for developing countries of implementing a broadcaster/ cablecaster/webcaster TPM regime under Articles 16 and 17 of the proposed WIPO SCCR Broadcasters Treaty. This study should be provided to the next WIPO General Assembly meeting in September 2005.
5. In providing technical assistance on TPM regime implementations that preserve room for appropriate exceptions and limitations in national copyright law and that considers the full range of public interest flexibilities, EFF respectfully recommends that WIPO include the following principles in its implementation proposals to developing country Member States:

**(1) Anticircumvention laws should follow the boundaries of copyright law.**

Where a TPM is used or is capable of being used to secure rights beyond those granted by national copyright law, the anticircumvention privilege shall not apply. The act of circumventing a TPM should only be unlawful if done for the purpose of infringing a right protected under Member Countries' national copyright law.

**(2) TPM implementations should not regulate tools, technologies and devices that may be used for circumvention.** If a Member Country chooses to regulate these technologies, it should incorporate a scheme that permits use for non copyright-infringing uses and that does not unduly burden the person seeking to use the technology or the creator or distributor of such technology. It should not be a violation of any TPM implementation to circumvent a technological measure in connection with access to, or use of, a copyrighted work, if the circumvention does not result in the infringement of the copyright in the work.

Any prohibition on creation or distribution of such technologies should be limited to those technologies that have no other use except for copyright infringement. It should not be a violation of any TPM implementation to manufacture, import, distribute, sell or rent any device, product or component, including any hardware

or software product, or to provide any service which is capable of enabling significant non-infringing use of a copyrighted work.

**(3) TPM implementations should contain an exception for legitimate, non-infringing purposes recognized under Member Countries' national laws.** They should also permit new exceptions and limitations that are consistent with Article 13 of the Trade Related Aspects of Intellectual Property agreement, Article 10 of the WCT, Article 16 of the WPPT, and Article 9 of the Berne Convention. To preserve existing exceptions and limitations in national copyright law, they must be expressly excluded in the circumvention provisions.

**(4) TPM implementations should contain protection against anticompetitive behavior.** At a minimum, they should include a “no mandate” provision providing that the TPM regime shall not require the design of, or design and selection of parts and components for, a consumer electronics, telecommunications, or computing product to provide for a response to any particular technological measure. Member Countries should also expressly retain their ability to regulate potential anticompetitive behavior arising out of use of TPMs. TPM implementations should provide that TPMs shall not be used to enable or facilitate any anti-competitive purpose and rightsholder’s authorization cannot be unreasonably withheld if it would result in a loss of legitimate competition for any product, program, technology or item that interoperates with a protected copyrighted work. Nothing in any international treaty provision concerning technological measures shall affect the right and ability of a Member Country to regulate anti-competitive behavior.

**(5) TPM implementations should not abrogate existing national consumer protection laws.** In particular, if national consumer protection laws provide for adequate labeling of device capability, DRM systems that are marketed without adequate disclosure of their restriction modes and the terms under which they can be invoked, or which may be “updated” without a user’s express consent, should not receive the privilege of anticircumvention protection.

**(6) TPM implementations should not preclude the development of Free and Open Source Software.** It should be clarified that existing and future international TPM obligations are not intended to have that effect, and Member Countries shall not be required to give anticircumvention protection to any Digital Rights Management (DRM) scheme that would have that effect. In particular, Digital Rights Management schemes whose licensing and implementation terms preclude implementation in Free and Open Source Software should not receive the privilege of anticircumvention protection.

**(7) TPM implementations should protect the use of assistive technologies employed by disabled people.** DRM systems that are or can be deployed to block the use of assistive technologies employed by disabled people, including blind and deaf people, will not receive the privilege of anticircumvention protection, and it

shall be permissible for disabled persons to use tools, technologies or devices to permit access to and use of a protected work by an assistive technology

**(8) TPM implementations should specifically exempt scientific research and publication.** To mitigate the chilling effect of the ban on acts of circumvention and circumvention technologies needed for scientific research and to provide appropriate incentives TPM implementations should (1) Have an exemption from criminal liability for circumvention acts and tools for scientific research and educational purposes, (2) Have a higher threshold for civil liability for scientific research and educational purposes, and (3) Expressly permit publication and distribution of research

6. EFF supports the creation of a new WIPO Access to Knowledge Treaty. Amongst other things, EFF respectfully recommends that this Treaty should clarify the scope of existing TPM obligations under WCT and WPPT and address the potential for over-reaching implementations of TPM anticircumvention laws.

EFF would be pleased to provide any further information that would be of assistance to Member Countries' national delegates. For further details, please contact Gwen Hinze, International Affairs Director; Cory Doctorow, European Affairs Coordinator, or Ren Bucholz, Activism Director.

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