

**BEFORE THE COPYRIGHT OFFICE  
LIBRARY OF CONGRESS**

**IN THE MATTER OF  
EXEMPTION TO THE PROHIBITION OF CIRCUMVENTION OF  
COPYRIGHT PROTECTION SYSTEMS FOR ACCESS CONTROL  
TECHNOLOGIES**

**Docket No. RM 2005-11**

**REPLY COMMENT OF  
THE ELECTRONIC FRONTIER FOUNDATION**

These reply comments are submitted on behalf of the Electronic Frontier Foundation (EFF) in response to the Notice of Inquiry (NOI) issued by the Copyright Office and Library of Congress regarding Exemptions to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies.<sup>1</sup>

EFF submits these reply comments in support of the following classes of works for which exemptions were proposed in the initial round of comments submitted in response to the NOI:

- *Audiovisual works and sound recordings distributed in digital format when all commercially available editions contain access controls that prevent the creation of clip compilations and other educational uses* (Comment #2, proposed by Library Copyright Alliance and Music Library Association).
- *Audiovisual works included in the educational library of a college or university's film or media studies department and that are protected by technological measures that prevent their educational use* (Comment #5, proposed by Profs. Peter Decherney, Michael Delli Carpini, and Katherine Sender)
- *Derivative and collective works which contain audiovisual works that are in the public domain and that are protected by technological measures that prevent their educational use* (Comment #5, proposed by Profs. Peter Decherney, Michael Delli Carpini, and Katherine Sender).
- *Computer programs that operate wireless telecommunications handsets* (Comment #3, proposed by The Wireless Alliance and Robert Pinkerton).
- *Sound recordings and audiovisual works distributed in compact disc format and protected by technological measures that impede access to lawfully purchased works by creating or exploiting security vulnerabilities that compromise the security of personal computers* (Comment #6, proposed by Prof. Edward Felten and J. Alex Halderman).

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<sup>1</sup> 70 Fed. Reg. 57526 (2005) (hereafter "2005 NOI") (available at <<http://www.copyright.gov/fedreg/2005/70fr57526.html>>).

## I. Statement of Interest.

EFF is a member-supported, nonprofit public interest organization devoted to maintaining the traditional balance that copyright law strikes between the interests of copyright owners and the interests of the public. Founded in 1990, EFF represents more than 9,000 contributing members including consumers, hobbyists, computer programmers, entrepreneurs, students, teachers, and researchers united in their reliance on a balanced copyright system that ensures adequate protection for copyright owners while ensuring access to information in the digital age.

## II. Summary.

- *Audiovisual works and sound recordings distributed in digital format when all commercially available editions contain access controls that prevent the creation of clip compilations and other educational uses* (proposed by Library Copyright Alliance and Music Library Association).<sup>2</sup>
- *Audiovisual works included in the educational library of a college or university's film or media studies department and that are protected by technological measures that prevent their educational use* (proposed by Profs. Peter Decherney, Michael Delli Carpini, and Katherine Sender).<sup>3</sup>
- *Derivative and collective works which contain audiovisual works that are in the public domain and that are protected by technological measures that prevent their educational use* (proposed by Profs. Peter Decherney, Michael Delli Carpini, and Katherine Sender).<sup>4</sup>

For the sake of convenience, these comments will refer to these proposed classes collectively as the “DVD Exemptions.” Each of these proposed exemptions seeks permission to circumvent the Content Scramble System (CSS) used on commercially-released motion picture DVDs.

The Copyright Office in its prior rule-making proceedings has consistently rejected all proposed exemptions that would permit circumvention of CSS on DVDs, despite requests from numerous parties seeking exemptions to engage in noninfringing uses of DVD content.<sup>5</sup> In support of its determinations, the Copyright Office has repeatedly relied on its view that any exemption “could have an adverse effect on the availability of such works on DVDs to the public, since the motion picture industry’s willingness to make audiovisual works available in

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<sup>2</sup> See Comments of the Library Copyright Alliance and Music Library Association (available at <[http://www.copyright.gov/1201/2006/comments/band\\_LCA.pdf](http://www.copyright.gov/1201/2006/comments/band_LCA.pdf)>).

<sup>3</sup> See Comments of Profs. Decherney, Delli Carpini, and Sender (available at <[http://www.copyright.gov/1201/2006/comments/decherney\\_upenn.pdf](http://www.copyright.gov/1201/2006/comments/decherney_upenn.pdf)>).

<sup>4</sup> See *id.*

<sup>5</sup> See, e.g., Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Final Rule, 68 Fed. Reg. 62011, 62015-16 (Oct. 27, 2003) (hereafter “2003 Final Rule”)(available at <<http://www.copyright.gov/fedreg/2003/68fr2011.pdf>>); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Final Rule, 65 Fed. Reg. 64556, 64567-70 (Oct. 27, 2000) (hereafter “2000 Final Rule”) (available at <<http://www.copyright.gov/fedreg/2000/65fr64555.pdf>>).

digital form on DVDs is based in part on the confidence it has that CSS will protect it against massive infringement.”<sup>6</sup>

Whatever the merits of that view in previous rule-makings, it is plainly insupportable today. In light of the continued success of the DVD format in the face of the widespread availability of DVD “ripping” software and DVD burners on personal computers, it appears plain that the DVD Exemptions will not adversely effect the incentives that impel movie studios to continue release their works on DVD.

Since the last rule-making proceeding in 2003, movie studio profits derived from DVD distribution have proven to be a robust incentive, ensuring a torrent of new DVD releases, notwithstanding the widespread availability of software capable of circumventing CSS. The DVD Exemptions—which would simply permit libraries, researchers, and teachers to circumvent CSS for noninfringing purposes (but not distribute circumvention tools)—are unlikely to erode motion picture industry incentives where widespread free availability of DVD rippers during the past 3 years has not.

- *Computer programs that operate wireless telecommunications handsets* (proposed by The Wireless Alliance and Robert Pinkerton).
- *Sound recordings and audiovisual works distributed in compact disc format and protected by technological measures that impede access to lawfully purchased works by creating or exploiting security vulnerabilities that compromise the security of personal computers* (proposed by Prof. Edward Felten and J. Alex Halderman).

With respect to these exemptions, EFF supports them for the reasons discussed by the proposing parties, adding relevant factual information.

### **III. The Continued Availability of DVDs in the Face of Widespread Circumvention Supports the Granting of the Proposed DVD Exemptions.**

#### **A. Previous Findings of the Copyright Office regarding CSS.**

Numerous parties in both the 2000 and 2003 rule-making proceedings sought exemptions in order to enable noninfringing uses of DVD content.<sup>7</sup> In those proceedings, the Copyright Office concluded that CSS is an “access control” within the meaning of 17 U.S.C. § 1201(a)(1), but rejected all proposed exemptions relating to DVDs.

The Copyright Office has expressly recognized that many of the exemptions were sought to permit activities that are plainly noninfringing, including fast-forwarding through promotional materials,<sup>8</sup> excerpting ancillary DVD-only materials for commentary,<sup>9</sup> defeating “region coding” to watch legitimately acquired DVDs,<sup>10</sup> and private playback of DVDs on computers running the

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<sup>6</sup> 2003 Final Rule, 68 Fed. Reg. 62016; *accord* 2000 Final Rule, 65 Fed. Reg. 64570.

<sup>7</sup> *See id.*

<sup>8</sup> Recommendation of the Register of Copyrights in RM 2002-4; Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies (Oct. 27, 2003) (hereafter “2003 Recommendation”) at 113 (available at <<http://www.copyright.gov/1201/docs/registers-recommendation.pdf>>).

<sup>9</sup> *Id.* at 116.

<sup>10</sup> *Id.* at 121.

GNU-Linux operating system.<sup>11</sup> Nevertheless, the Copyright Office has recommended against all of the proposed exemptions, finding that the noninfringing activities in question were not entirely barred by CSS and thus that those seeking exemptions were “merely inconvenienced” by it. In reaching this conclusion, the Register noted the existence of a variety of more cumbersome, expensive, and inconvenient alternate methods whereby the noninfringing activities could be carried out (such as using the “analog hole” to copy material from DVDs, buying multiple DVD players from different countries to overcome region coding limitations, and modifying DVD players to enable the skipping of otherwise unskippable promotional content on DVDs).

The Copyright Office also repeatedly emphasized its view that “the motion picture industry’s willingness to make audiovisual works available in digital form on DVDs is based in part on the confidence it has that CSS will protect it against massive infringement.”<sup>12</sup> Strikingly absent from the record in those prior proceedings, however, was any evidence that the proposed exemptions would erode movie studio incentives to release material on DVD. In fact, one scours the Register’s 2003 in vain *for any evidence in the record whatsoever* supporting this determination.<sup>13</sup>

#### **B. Granting the DVD Exemptions will have no impact on the availability of DVDs in the marketplace.**

Whatever the merits of the Copyright Office’s views may have been in 2000 or 2003, it is plain in 2006 that granting the DVD Exemptions will not have any significant adverse effect on the availability of motion pictures on DVD. If the widespread, free availability of CSS circumvention tools over the past 3 years has not dampened Hollywood’s ardor for DVDs, it is difficult to conceive of how authorizing circumvention (but not trafficking in tools) of CSS on the part of a limited number of librarians, teachers and researchers will meaningfully tip the scales.

One of the factors that Congress has instructed the Copyright Office to consider is “the effect of circumvention of technological measures on the market for or value of copyrighted works.”<sup>14</sup> In the most recent NOI, the Copyright Office further stated that “[i]f there is sufficient evidence that particular classes of works would not be offered at all without the protection afforded by technological protection measures that control access, this evidence must be considered.”<sup>15</sup> Developments during the preceding exemption period make it clear that the Copyright Office must revisit and reverse its prior view that any exemption permitting the circumvention of CSS would result in motion picture studios making fewer works available on DVD.

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<sup>11</sup> *Id.* at 143.

<sup>12</sup> *Id.* at 119; *see also id.* at 114-15, 117-19, 145-46; 2000 Final Rule, 65 Fed. Reg. 64570.

<sup>13</sup> The 2003 Recommendation does cite to one reply comment, *see* 2003 Recommendation at 114 n.193. None of the pages cited, however, support the Register’s conclusion that DVD availability would diminish were circumvention of CSS permitted. Aside for this one inaccurate citation, the 2003 Recommendation includes *absolutely no citation to any evidence in the record* to support this conclusion, despite its frequent reiteration. Although the 2003 Recommendation does cite to the 2000 Final Rule, the empirical realities surrounding CSS and circumvention have changed considerably since 2000.

<sup>14</sup> 17 U.S.C. § 1201(a)(1)(C)(iv).

<sup>15</sup> 2005 NOI at 3.

First, it is indisputable that, notwithstanding the anti-trafficking prohibitions contained in § 1201(a)(2), during the past 3 years tools capable of circumventing CSS have been widely and freely available, both from the Internet and retail sources. 321 Studios, for example, sold more than 1 million units of its popular DVD X Copy software through major retail outlets in the U.S. before an injunction was issued against it.<sup>16</sup> At the same time, similar DVD ripping software has been made available, for free, over the Internet for all major personal computer operating systems. For Windows, the leading popular application appears to be DVD Shrink.<sup>17</sup> For the Macintosh, MacTheRipper and Handbrake are two free, popular DVD decryption solutions.<sup>18</sup> Those who prefer Gnu-Linux or other open source operating systems also have a variety of free, effective DVD ripping solutions at their disposal, most relying on the open source library libdvcss.<sup>19</sup> Many other less popular DVD ripper alternatives, some distributed for free, others for a small fee, also compete with these leading products. Even DeCSS, the first widely distributed DVD decryption software, remains widely available online, even though it has long-since been surpassed in ease-of-use and sophistication by its descendants.<sup>20</sup>

These tools have not only been available, but have been distributed to a large number of mainstream personal computer users during the past 3 years. DVD ripping software, once the domain of a small band of enthusiasts, is now reviewed in mainstream publications, including *USA Today*, *MacWorld* and *PC Magazine*.<sup>21</sup> While it was available, DVD X Copy was stocked on the shelves of mainstream retailers like Best Buy and CompUSA. Given the reported sales of DVD X Copy, as well as the widespread availability of free alternatives, it appears that millions of Americans now have DVD circumvention tools at their disposal.

The potential impact of these CSS circumvention tools on movie industry incentives has doubtless been exacerbated by the rapid spread of inexpensive DVD burners, which are now standard equipment in new computers and easily added to older computers for less than \$50. As a result, today most DVD ripping software comes preconfigured to copy, compress, and burn DVDs to recordable DVD media, which can be purchased today for less than \$1 per blank. This has made it simple for a computer user of average skill to create a near-perfect duplicate of a

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<sup>16</sup> See Tom Spring, *DVD Ripping Flourishes*, PC WORLD (Feb. 9, 2005) (available at <<http://www.pcworld.com/news/article/0,aid,119549,00.asp>>).

<sup>17</sup> See <<http://www.dvdshrink.org/>>.

<sup>18</sup> See Dan Frakes, *Rip, Save, Watch*, MACWORLD (Mar. 21, 2005) (available at <<http://www.macworld.com/weblogs/macgems/2005/03/mactheripper/index.php>>); Dan Frakes, *DVD to iPod Made Easy*, MacWorld (Jan. 2, 2006) (available at <<http://www.macworld.com/weblogs/macgems/2006/01/handbrakelite/index.php>>).

<sup>19</sup> See Dave Phillips, *DVD Players*, LINUX JOURNAL (Dec. 1, 2003) (available at <<http://www.linuxjournal.com/article/6921>>).

<sup>20</sup> See Anuj C. Desai, *Software as Protest: the Unexpected Resiliency of U.S. Based DeCSS Posting and Linking*, 20 THE INFORMATION SOCIETY 101 (2004) (available at <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=729931](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=729931)>).

<sup>21</sup> See Edward C. Baig, *May the DVD X Copy Lead Me Not Into Temptation*, USA TODAY (Feb. 4, 2003) (available at <[http://www.usatoday.com/tech/columnist/edwardbaig/2003-02-04-baig\\_x.htm](http://www.usatoday.com/tech/columnist/edwardbaig/2003-02-04-baig_x.htm)>); Dan Frakes, *Rip, Save, Watch*, MACWORLD (Mar. 21, 2005) (available at <<http://www.macworld.com/weblogs/macgems/2005/03/mactheripper/index.php>>); Cade Metz, *CD and DVD Burning*, PC MAGAZINE (May 4, 2005) (available at <<http://www.pcmag.com/article2/0,1759,1791568,00.asp>>).

CSS-protected DVD in a matter of a few mouse clicks.<sup>22</sup> The rise of “all you can rent” video rental operations, a model pioneered by Netflix, has facilitated inexpensive access to a large library of DVDs from which copies can be made by interested computer users.

Over the 3-year period addressed by this rule-making, none of these realities is likely to change. There is no indication that the availability of free DVD rippers will be curtailed (legal actions have proven ineffective, as illustrated by the continued availability of DVD rippers notwithstanding the injunctions against 321 Studios and DeCSS). DVD burners and blank media will become cheaper, while new technologies like Apple’s video-enabled iPod and Microsoft’s Xbox 360 will give consumers more ways to enjoy DVD content once it has been decrypted and copied using a DVD ripper.<sup>23</sup>

The efficacy of CSS as a mechanism for preventing widespread unauthorized copying has also been eroded by the rise of peer-to-peer file sharing and other so-called “darknet” technologies.<sup>24</sup> In a digital environment characterized by high-bandwidth communications channels, the leakage of even a small number of formerly “protected” copies into these channels leads to their widespread distribution without any further need for circumvention by the ultimate users.

This insight predicts that, so long as even a small number of individuals are able to circumvent CSS, decrypted copies of formerly CSS-encrypted films are likely to be widely distributed to large numbers of less sophisticated users, none of whom will need access to circumvention tools themselves. This, of course, is precisely what has occurred during the past 3 years, with the spectacular rise of Bit Torrent, eDonkey, and other P2P mechanisms for the distribution of movies.<sup>25</sup> In addition, private networking technologies like Grouper and Waste make it simple for smaller groups to share films and television shows copied from DVDs.<sup>26</sup> Despite efforts by law enforcement and the motion picture industry, the reality is that much of the most popular material released on DVD will continue to be freely available via Darknet channels during the next 3 years.

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<sup>22</sup> “Dual-layer” DVD burners have now become standard, making it possible to burn DVD copies without the necessity of re-compressing content to fit onto a single-layer disc.

<sup>23</sup> The latest “video iPods” are able to store and play videos, including video extracted and compressed from DVDs. Many websites instruct iPod owners how to accomplish this using software that is widely available for free. Microsoft’s Xbox 360, along with many other inexpensive “home media adapters,” make it possible for those who decrypt DVDs to stream those copies from a computer to a television located in another room. These innovations will almost certainly fuel the demand for DVD copying software.

<sup>24</sup> The term “darknet” and its implications for digital distribution were developed in a paper authored by senior Microsoft engineers in 2002. See Peter Biddle, Paul England, Marcus Peinado & Bryan Willman, *The Darknet and the Future of Content Distribution* (2002) (available at <<http://crypto.stanford.edu/DRM2002/darknet5.doc>>); see also Fred von Lohmann, *Measuring the Digital Millennium Copyright Act Against the Darknet: Implications For the Regulation of Technological Protection Measures*, 24 LOY. ENT. L. REV. 635 (2005).

<sup>25</sup> See Joe Wang & Michael Hastings, *All TV Shows, All the Time*, NEWSWEEK (June 27, 2005) (available at <<http://msnbc.msn.com/id/8259047/site/newsweek/>>).

<sup>26</sup> See Jon Healey, *Testing Copyright Limits*, L.A. TIMES (Apr. 12, 2005).

The Darknet insight also points up another reason that CSS has become largely superfluous as a copyright protection measure. As the Copyright Office has itself noted, there are numerous ways to make copies of the motion pictures released on DVD even without circumventing CSS. For example, the Copyright Office noted that using the “analog hole” to copy a DVD, while relatively tedious, does not violate § 1201(a)(1).<sup>27</sup> Similarly, today a great deal of the motion picture content circulating in Darknet channels was obtained from camcorder and prerelease sources other than CSS-protected DVDs.<sup>28</sup>

In summary, developments during the most recent exemption period have made it clear that, whatever its efficacy in the past, CSS is no longer effective at protecting digital content on DVD from massive infringement. There is no indication that this will change during the coming exemption period. Millions of U.S. consumers already possess circumvention tools capable of defeating CSS. Millions more are able to download DVD content from P2P networks and other darknet channels without having to circumvent CSS at all. And new technologies, including portable media players, home media servers, and “me-to-me” streaming solutions, are giving consumers ever more reasons to copy DVDs.

### **C. Despite the Widespread Availability of CSS Circumvention Tools, Motion Picture Studios Continue to Embrace the DVD Format.**

What impact has the widespread circumvention of CSS had on the availability of digital audiovisual content on DVD? As mentioned above, the Copyright Office in 2000 and 2003 feared that the grant of even a limited DVD exemption might undermine the motion picture industry’s incentives to continue making content available on DVD. Had the Copyright Office’s worries been well-founded, then the broad availability of DVD ripping software should have resulted in a conspicuous downturn in the number of DVDs released, or at least a substantial diminution in DVD profitability such that number and diversity of DVD releases would be effected.

The empirical evidence proves just the opposite. During the previous exemption period, DVD sales and profitability continued to grow at an astonishing pace.<sup>29</sup> In fact, DVD sales have proven to be more profitable for motion picture studios in recent years than the formats they replaced, even at a time when DVD ripping software has been popular.<sup>30</sup> In addition, major motion picture studios have continued to release new DVD titles in ever-increasing numbers, including classic titles, television series, and growing array of “direct to DVD” releases. This evidence suggests that the decisions of Hollywood executives to release material on DVD has more to do with the potential for profits than confidence in the security of CSS. Whatever the contribution of CSS to the availability of content on DVD may have been in the past, today the motion picture industry’s willingness to release material on DVD is plainly not correlated to any security provided by CSS.

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<sup>27</sup> See 2003 Recommendation at 116.

<sup>28</sup> See Jeff Howe, *The Shadow Internet*, WIRED MAGAZINE (Jan. 2005) (available at <<http://wired-vig.wired.com/wired/archive/13.01/topsite.html>>).

<sup>29</sup> Sales of DVDs grew 4.5% in 2005, 27.3% in 2004, and 40.3% in 2003. See VIDEO BUSINESS NEWS Year End Market Research (available at <<http://www.videobusiness.com/info/CA6301486.html>>).

<sup>30</sup> See Ross Johnson, *Getting a Piece of a DVD Windfall*, N.Y. TIMES (Dec. 13, 2004).

**D. The DVD Exemptions Will Authorize Circumvention in Limited Circumstances Unlikely to Effect Incentives for DVD Distribution.**

The DVD Exemptions would authorize circumvention solely for noninfringing purposes and would not authorize distribution of CSS circumvention devices. Accordingly, when compared with the widespread circumvention already being practiced, it is highly unlikely that the activities permitted by the DVD Exemptions would adversely impact movie studio incentives for DVD distribution.

The DVD Exemptions all seek to permit noninfringing uses of DVDs by for librarians, educators, and researchers. None of these activities involve widespread distribution of copies that might compete with commercial DVD releases. In particular, the exemption proposed by the Library Copyright Alliance and Music Library Association is principally aimed at the creation of clip compilations intended for classroom use, a transformative use that will not compete with the original DVD. Similarly, the proposal submitted by film school professors would be limited to noninfringing uses by specialty libraries and educators. Because the DVD Exemptions would only apply to the act of circumvention, rightsholders would remain free to pursue infringement actions against any whose uses they believe are infringing.

The DVD Exemptions, moreover, would not authorize the distribution of circumvention tools. As the Copyright Office has repeatedly pointed out, it lacks the authority under § 1201(a) to grant any exemption to the “anti-trafficking” provisions of § 1201(a)(2) or (b). Accordingly, any impact on the market for commercial DVDs would be minimal, as the DVD Exemptions would not authorize the distribution of tools primarily designed to circumvent CSS. Motion picture studios would retain their full remedies against distributors of DVD ripping software.<sup>31</sup>

**E. In the Absence of Evidence Establishing that They Would Erode the Availability of DVDs, the DVD Exemptions Should be Granted.**

EFF expects the motion picture studios will oppose the DVD Exemptions, as they have opposed similar proposed exemptions in the past. Unless those objections are backed by concrete evidence that the grant of the DVD Exemptions will result in diminished availability of audiovisual content on DVDs, the Copyright Office should grant the exemptions.

The motion picture studios are likely to rely on self-serving statements regarding the industry’s reliance on CSS as a linchpin for DVD distribution. Those statements, however, should be discounted in light of the evidence discussed above. Even if CSS was critical to enticing studios to enter the DVD market in 1997, it has long since ceased to be an effective security measure. Widespread unauthorized copying of DVDs, moreover, has not prevented the DVD from remaining fantastically profitable for the motion picture industry.

The motion picture industry has been characterized by a willingness to “cry wolf,” threatening to curtail distribution unless their demands are met. At the dawn of color television, the motion picture industry refused to make its products available, citing fears that color programming would undermine incentives for theatrical releases. Similarly, the industry initially rejected the VCR, arguing that unauthorized home recording would undermine the theatrical

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<sup>31</sup> Should the DVD Exemptions be granted, those who come within their scope would be entitled to develop CSS decryption tools for their own use, or to acquire such tools. The “anti-trafficking” provisions do not prohibit possession, acquisition or receipt of circumvention tools.

market. More recently, the industry threatened to withhold high-definition content from DTV broadcast unless its demands for a “broadcast flag” mandate were met. In each case, these threats did not result in diminished access for the public because the motion picture industry found that the prospect of profits proved irresistible. There is evidence suggesting that a different result will obtain where the DVD Exemptions are concerned.

The DVD Exemptions satisfy the statutory factors that Congress instructed the Copyright Office to consider. As discussed above, the exemptions will not harm the market for or value of the works. The uses contemplated are noninfringing educational uses, including the creation of clip compilations for classroom use. For the reasons discussed by the proposing parties, alternatives that do not involve circumvention are inferior for the educational uses contemplated. In light of these factors, the DVD Exemptions should be granted for the upcoming exemption term.

#### **IV. Phone Unlocking Exemption.**

- *Computer programs that operate wireless telecommunications handsets* (proposed by The Wireless Alliance and Robert Pinkerton).

EFF supports the proposed exemption for circumvention of access control measures used to limit “unlocking” of cellular phone handsets. Two EFF employees have direct experience with the frustrations created by U.S. “locked” cellphones when taken to Europe. Both have phones that are technically capable of interoperating with European cellular network standards, but are blocked by “locking” features from using their phones on those networks. As a result, they have been required to pay much higher per-minute roaming rates in those foreign markets when traveling on business.

For all the reasons cited by the proposing parties, EFF urges the Copyright Office to recommend that this exemption be granted.

#### **V. Computer Security Exemption.**

- *Sound recordings and audiovisual works distributed in compact disc format and protected by technological measures that impede access to lawfully purchased works by creating or exploiting security vulnerabilities that compromise the security of personal computers* (proposed by Prof. Edward Felten and J. Alex Halderman).<sup>32</sup>

EFF supports the proposed exemption for circumvention of access controls on compact discs, several of which have recently been demonstrated to create security vulnerabilities in certain personal computers.

Recently, EFF was instrumental in uncovering security flaws contained in the SunnComm MediaMax CD copy protection technology used by Sony-BMG and several other music labels, leading to the issuance of several security patches by SunnComm.<sup>33</sup> Other flaws in First4Internet’s XCP CD copy protection technology were discovered by independent security researchers, as well.<sup>34</sup> These CD copy protection technologies have now been issued on more

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<sup>32</sup> See Comments of Prof. Edward Felten and J. Alex Halderman (available at <[http://www.copyright.gov/1201/2006/comments/mulligan\\_felten.pdf](http://www.copyright.gov/1201/2006/comments/mulligan_felten.pdf)>).

<sup>33</sup> See Information Security Partners, Media Max Access Control Vulnerability (available at <<http://www.eff.org/IP/DRM/Sony-BMG/MediaMaxVulnerabilityReport.pdf>>).

<sup>34</sup> See Mark Russinovich, Sony, Rootkits, and Digital Rights Management Gone Too Far

than 100 commercial released CD titles.<sup>35</sup> Millions of copies have been sold. Although Sony-BMG and SunnComm have taken steps to remedy the security vulnerabilities created by the technologies they introduced into the marketplace, future technologies may introduce new vulnerabilities.

As described by the proposing parties, security research in this field has been hampered by the legal risks created by § 1201(a)(1). The recording industry has taken the position that technical measures designed to “control access on different [personal computer] platforms” qualify for protection under § 1201(a).<sup>36</sup> In light of this, legitimate security researchers find themselves chilled when examining these technologies, to the detriment of computer security generally.

For the reasons set forth by the proposing parties, EFF urges the Copyright Office to recommend that this exemption be granted.

## **VI. Conclusion.**

For the reasons discussed above, EFF urges the Copyright Office to grant the proposed exemptions.

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(<<http://www.sysinternals.com/blog/2005/10/sony-rootkits-and-digital-rights.html>>).

<sup>35</sup> For a complete list of CDs effected by XCP, see <<http://cp.sonybmg.com/xcp/english/titles.html>>; for a complete list of CDs effected by MediaMax, see <[http://www.sunncomm.com/CD/List\\_CD\\_A.html](http://www.sunncomm.com/CD/List_CD_A.html)> and <[http://www.sunncomm.com/CD/List\\_CD\\_B.html](http://www.sunncomm.com/CD/List_CD_B.html)>.

<sup>36</sup> 2003 Recommendation at 153.