



July 10, 2009

Mr. Robert Kasunic  
Principal Legal Advisor  
Office of the General Counsel  
United States Copyright Office  
101 Independence Avenue, S.E.  
Washington, D.C. 20559-6000

Re: June 22, 2009 questions posed to DVD-related panelists and to documentary filmmakers and noncommercial video remix creators.

Dear Mr. Kasunic:

The Electronic Frontier Foundation (EFF) submits these responses to your supplemental questions, sent on June 22, 2009, to the DVD-related panelists (Proposed Classes 4A-H) and documentary filmmakers and amateur video remix creators (Proposed Classes 11A-B).

EFF has separately joined a July 9, 2009 joint submission responding to your questions, which you have already received. EFF submits this additional response to address certain points in more detail.

*Is it a violation of Section 1201(a)(1) to use screen capture software...to reproduce clips from copyrighted motion pictures or audiovisual works?*

*First*, this question, along with the related ones posed in your June 22 letter, raise a fundamental difficulty with screen capture software as relates to Proposed Classes 4 and 11: it is impossible for anyone to answer the question with any certainty.

As stated in the July 9 joint submission, it is our understanding that the use of the screen capture utilities you identified (WM Capture, SnagIt, and Snaps Pro X) does not violate Section 1201(a)(1). However, because these screen capture utilities are distributed only in binary form, significant reverse engineering (which itself may implicate Section 1201(a)(1), the exclusive rights of the respective copyright owners, and potential contractual questions) would be necessary to confirm this belief. In short, it is impossible for educators, documentarians, or noncommercial remix creators to know how these products work, how they will continue to work in future revisions, or whether other screen capture utilities operate in the same manner. Without knowing this information, it is impossible to be certain whether the use of these products violates Section 1201(a)(1).

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Moreover, given the legal uncertainties involved, it is not clear that even those who designed the software can answer the question with confidence. As the July 9, 2009 joint submission states, DVD-CCA and several motion picture studios have taken the position in pending litigation against the RealDVD software that CSS-protected DVDs incorporate several “layers” of technical protection measures and that circumventing any aspect of this system violates Section 1201(a)(1). These litigants have steadfastly refused to explain publicly how these technologies operate, which leaves makers of screen capture utilities poorly situated to understand what they are allegedly circumventing.<sup>1</sup>

These uncertainties regarding the legal posture of screen capture utilities underscore why they are inadequate substitutes for DVD ripping, *especially for noncommercial video remix creators*. As set forth in our original submission proposing Class 11A, and further explained at the hearings in both Palo Alto, CA, and Washington, DC, these creators lack the legal sophistication to appreciate the counter-intuitive distinctions that Section 1201(a)(1) potentially draws between technologies that all accomplish the same thing—extracting video clips from CSS-protected DVDs. Even assuming these creators were somehow to learn that some screen capture utilities may be more “legally favored” than other methods of clip extraction, the uncertainties above will make the line less than bright.

In short, while the availability of screen capture utilities might be some comfort to users who have access to substantial reverse engineering capabilities and sophisticated counsel prepared to parse what DVD protection “layers” may be safely bypassed without Section 1201(a)(1) liability, these tools provide little comfort to noncommercial remix video creators who lack access to these resources, and who are therefore likely to confront these legal questions only when it is too late.

*Second*, the widespread availability of screen capture utilities further demonstrates that granting exemptions for Proposed Classes 4 and 11 could not plausibly harm the market for works released on CSS-encrypted DVDs. Just as the widespread availability of DVD rippers has not dampened the market for DVDs, so, too, the availability of screen capture utilities has not done so.<sup>2</sup> It is difficult to understand how the noninfringing activities of

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<sup>1</sup> See Notice of Motion and Motion of Studio Plaintiffs for Preliminary Injunction; Memorandum of Points & Authorities in Support Thereof, *RealNetworks, Inc. v. DVD Copy Control Ass’n*, No. C 08-4548-MHP (filed Mar. 19, 2009), at 4-5 (redacting description of 5 “critical features” of CSS, as well as RipGuard and ARccOS); Memorandum of Points and Authorities in Support of DVD Copy Control Ass’n, Inc., for Preliminary Injunction, *RealNetworks, Inc. v. DVD Copy Control Ass’n*, No. C 08-4548-MHP (filed Mar. 19, 2009), at 7-8 (same) (both available from <<http://www.eff.org/cases/universal-city-studios-v-realnetworks>>).

<sup>2</sup> See Comment of the Electronic Frontier Foundation to the U.S. Copyright Office, Dec. 2, 2008, at 25-27 (<<http://www.copyright.gov/1201/2008/comments/lohmann-fred.pdf>>).

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educators, documentarians, or noncommercial video remix creators would somehow tip the scales.

*Third*, technologies have already been incorporated into Microsoft's Windows operating system that are designed to disable screen capture utilities altogether. In Microsoft's Vista version of Windows, this technology is known as "Protected Media Path" (PMP) and includes a "Protected Environment" feature intended to disrupt software-based screen capture products.<sup>3</sup> This functionality encrypts video on the PC and ensures that protected video will not play in the presence of screen capture utilities. While we are not aware of any DVD software player on the PC that currently uses PMP features to block screen capture utilities, these capabilities are already present on millions of PCs using Windows Vista and could be activated in future DVD software players licensed by DVD-CCA.

*Can a portion of a motion picture on a DVD protected by CSS be decrypted, leaving the remainder of the motion picture encrypted by CSS?*

*Is it necessary to make a copy of the entire motion picture as a first step to make a copy of only a portion of the motion picture?*

In order to shed some light on these questions, we examined the source code of libdvdcss, a popular open source software "library" used in a variety of open source software projects (not authorized by DVD-CCA) that access, play, and rip content from DVDs.<sup>4</sup> Based on this research, we were able to ascertain the following characteristics of the software:

*First*, libdvdcss is *capable* of decrypting the entirety of motion pictures stored on CSS-protected DVDs. This is because it uses decryption methods that extract or derive all the "title keys" necessary to decrypt CSS-protected DVDs. It is our understanding that this is not unique to libdvdcss but rather is a universal characteristic of DVD rippers.

*Second*, libdvdcss is able to decrypt an arbitrary clip of a motion picture stored on a CSS-protected DVD, if the software that incorporates the libdvdcss library exposes that

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<sup>3</sup> See Dave Marsh, Output Content Protection and Windows Vista, WinHEC 2005 Version, April 27, 2005, at 5 (<[http://download.microsoft.com/download/5/D/6/5D6EAF2B-7DDF-476B-93DC-7CF0072878E6/output\\_protect.doc](http://download.microsoft.com/download/5/D/6/5D6EAF2B-7DDF-476B-93DC-7CF0072878E6/output_protect.doc)>).

<sup>4</sup> As a software "library," libdvdcss is intended to be incorporated into larger software programs that require DVD decryption functionality. So, rather than representing a complete DVD ripper solution, libdvdcss provides the DVD decryption functionality when incorporated into Linux-compatible DVD rippers.

functionality to the user and the DVD is authored with the relevant navigation metadata.<sup>5</sup> It is clear from the libdvcss source code that the software only reads the portions of the DVD that it has been asked to read and only decrypts those portions. These portions are specified in terms of 2048-byte sectors (probably comprising a few frames of video). The software can read any number of sectors and the decryption is only invoked when particular sectors are read. So, for example, a DVD ripper incorporating libdvcss could read from DVD only those sectors that represent a clip selected by a user, decrypt those, and store the resulting video to a hard drive without decrypting other sectors on the DVD. There is no point at which the entire disc or chapter is *necessarily* decrypted.<sup>6</sup>

In other words, libdvcss supports the ability to extract a clip from a CSS-protected DVD such that only that particular clip ends up stored in decrypted form on the hard drive of the user's computer. In this regard, its functionality appears to be similar to that offered by other popular DVD ripping applications.<sup>7</sup>

It is worth emphasizing, however, that various DVD ripping applications may operate in a different manner from libdvcss—some, for example, may decrypt DVDs on a title-by-title or chapter-by-chapter basis (resulting in the decryption of more than the desired clip). Moreover, noncommercial video remix creators may want to decrypt a larger portion of a motion picture in order to facilitate the excerpting of multiple clips. Similarly, some creators may prefer to decrypt longer clips and use video editing software with which they are familiar to edit the clip. As a result, we stand by the language of our proposed Class 11A—so long as the creator is decrypting for a purpose that is ultimately noninfringing (an inquiry for the courts, not this rulemaking, to decide), the requirements of this rulemaking have been met and the creator should be relieved of any liability under Section 1201(a)(1). The question of whether the creator took “too

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<sup>5</sup> It is our understanding that DVDs can be authored such that users have to watch the DVD from beginning to end without any option of navigating within the film using fast-forward, rewind, or chapter skipping. We are not aware how common these DVDs might be, but DVDs authored in this manner may require the user to decrypt all of the motion picture from its beginning through the end of the desired clip.

<sup>6</sup> Again, the ability of libdvcss to identify the particular sectors that make up a particular clip may be influenced by the navigation metadata authored in the DVD.

<sup>7</sup> For example, Handbrake and Mac The Ripper permit users to decrypt and store only a portion of the content on a DVD. However, without access to the source code of those applications, it is difficult to know for certain how much of the motion picture is decrypted and stored in RAM in the course of extracting the relevant clip. Because we do not have access to the source code of these applications, and testing these applications on CSS-protected DVDs might implicate Section 1201(a)(1), we cannot say with certainty how much of a DVD these applications decrypt in the course of extracting a clip from a CSS-protected DVD.

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much” of the work is one that is better addressed in the infringement analysis, rather than as a limitation on the scope of the proposed exemption.<sup>8</sup>

Thank you for the opportunity to address your questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Fred von Lohmann', with a long horizontal flourish extending to the right.

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<sup>8</sup> See *Sony Computer Enter., Inc. v. Connectix Corp.*, 203 F.3d 596, 606 (9th Cir. 2000) (holding that, where “intermediate copying” is concerned, the third fair use factor regarding the amount and substantiality of the original work taken is entitled to “very little weight”).