

**Before the
U.S. COPYRIGHT OFFICE
LIBRARY OF CONGRESS
Washington, DC 20559**

In the Matter of)	
)	
Exemption to Prohibition on Circumvention of)	
Copyright Protection Systems for Access)	Docket No. RM 2011-07
Control Technologies)	

COMMENTS OF SONY COMPUTER ENTERTAINMENT AMERICA LLC

IN OPPOSITION TO

**PROPOSED CLASS # 3: COMPUTER PROGRAMS THAT ENABLE
LAWFULLY ACQUIRED VIDEO GAME CONSOLES TO EXECUTE
LAWFULLY ACQUIRED SOFTWARE APPLICATIONS, WHERE
CIRCUMVENTION IS UNDERTAKEN FOR THE PURPOSE OF ENABLING
INTEROPERABILITY OF SUCH APPLICATIONS WITH COMPUTER
PROGRAMS ON THE GAMING CONSOLE**

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I. SUMMARY OF OPPOSITION

Pursuant to the Copyright Office’s Notice of Proposed Rulemaking¹ in connection with the triennial rulemaking proceeding on circumvention of copyright protection systems for access control technologies,² Sony Computer Entertainment America LLC (“SCEA”) submits this comment in opposition to proposed exemption labeled 3,³ which is proposed Class #2 as submitted by the Electronic Frontier Foundation (“EFF”), in the following form⁴:

Proposed Class #2: Computer programs that enable lawfully acquired video game consoles to execute lawfully acquired software applications, where circumvention is undertaken for the purpose of enabling

¹ Notice of Proposed Rulemaking, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2011-7, 76 Fed. Reg. 78,866 (Dec. 20, 2011).

² Notice of Inquiry and Request for Comments, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2011-7, 76 Fed. Reg. 60,398 (Sept. 29, 2011) [hereinafter *Notice of Inquiry*].

³ SCEA’s election not to submit responsive comments with respect to other proposed exemptions in this proceeding should not be construed as an indication that SCEA, Sony Corp., or any affiliate thereof either supports or opposes such proposed exemptions.

⁴ Comments of the Electronic Frontier Foundation, In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2011-7, at 19 (Dec. 1, 2011) [hereinafter *EFF Submission*].

interoperability of such applications with computer programs on the gaming console.⁵

SCEA develops and sells the PlayStation®3 entertainment system (“PS3”), which is one of the three major console-based video gaming platforms available in the United States, and itself owns the copyrights in many video games. SCEA opposes proposed exemption 3 because, if granted by the Librarian, it will allow persons to circumvent⁶ the technological protection measures (“TPMs”) embedded in the copyrighted software (“PS3 firmware”) that operates the PS3. These TPMs protect two categories of copyrighted works: the PS3 firmware and the copyrighted video games that are developed and published – both by Sony and by third parties – for play on that system. These video games are highly creative and number more than a thousand. If the exemption is granted, it is virtually certain that successful hackers, under the guise of the exemption, will create the tools that enable even novice users to make, distribute, download, and play back illegal copies of games. In evaluating the request for exemption 3, the Register cannot ignore this serious market reality.

The burden of demonstrating that the exemption should be granted lies squarely with EFF. EFF must carry that burden with respect to each of the video game platforms it describes, including Nintendo’s Wii, Microsoft’s Xbox 360, and SCEA’s PS3, demonstrating that, as to each, the inability to circumvent the console’s unique technological protections results in adverse effects on noninfringing uses and the weighing of the statutory factors requires granting the exemption.⁷ As described more

⁵ SCEA notes the discrepancy between EFF’s Proposed Class #2 as set out on the first page of its submission and as set out on page 19, in that the latter includes the phrase “sole purpose” (emphasis added), while the former omits the word “sole.” Because the Notice of Proposed Rulemaking does not include the word “sole” in Proposed Exemption 3, these comments assume that the description set out on page 1 of the *EFF Submission* accurately identifies the proposed class.

⁶ EFF refers to the circumvention of video game consoles as “jailbreaking,” a colloquial term used originally to refer to circumventing locks on wireless telephone handsets to enable their use on more than one wireless network, a practice first sanctioned by the Register in 2006. *See* Recommendation of the Register of Copyrights in RM 2008-8, Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control, at 79 (June 11, 2010), available at <http://www.copyright.gov/1201/2010/initialed-registers-recommendation-june-11-2010.pdf> [hereinafter *2010 Recommendation*]. Although that term has been used by the Register and others to encompass hacking of computer software more generally, SCEA’s view is that the term has no applicability to a video game console that a consumer purchases for entertainment and as to which he or she is not technologically or contractually bound to obtain services from a single supplier. For that reason, SCEA has expressly chosen to eschew the term “jailbreaking” in these comments and in this proceeding.

⁷ *See* Comments of the Entertainment Software Association, In the Matter of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2011-7, at 2, n.3 (Feb. 10, 2012) [hereinafter *ESA Submission*].

fully below, EFF has failed to satisfy that burden both generally and with respect to the PS3.

EFF has failed to show that the TPMs used on the PS3 console have any meaningful adverse effect on noninfringing uses of the copyrighted works that are protected by the TPMs. With respect to video games, to the extent that EFF argues that TPMs have an adverse effect on users' ability to make noninfringing uses of them, that argument is without merit. Licensed PS3 games are designed for and will only play on a PS3 console. Accordingly, the only noninfringing use for the games is that which the TPMs were specifically (though not solely) designed to protect: playing the games on a PS3. With regard to the PS3 firmware, there are numerous alternatives to the PS3 console for the uses that, according to EFF, purportedly would be advanced by granting the exemption – computational research using the consoles and the development and playback of “homebrew” (hobbyist) games and other applications.

SCEA has always tried to encourage the homebrew community and culture, understanding that it can help to broaden the popularity of computer games and encourages individuals to take a deeper interest in development of more complex games. SCEA introduced a development system, the Net Yaroze, for the original PlayStation and was the first and only seventh-generation console maker to give homebrew enthusiasts the ability to run an alternative operating system on their consoles. Unfortunately, as discussed below, that feature had to be discontinued after it was used to compromise the security of the PS3.

SCEA values the homebrew community. To the extent that the TPMs disable the capability to make homebrew uses of the console – and, as discussed in Section III.C.4 below, the TPMs do not prevent and have not prevented researchers and small, independent developers from using PS3s for their purposes – the issue being raised is solely one of cost and mere inconvenience. There is no need or right to have access to the PS3 firmware given the plentiful alternatives. There are, therefore, insufficient grounds for granting an exemption to the anti-circumvention provisions, which SCEA employs to protect important intellectual property rights.

EFF also has not demonstrated that the uses within the proposed exemption would be noninfringing. As described below, those uses are not fair uses because they fall outside the purposes set out in the preamble to Section 107 and are in no way transformative. Moreover, SCEA's PS3 firmware, which circumventing persons would need to copy, is a highly creative work and would need to be copied and used in its entirety to effect the hack. Circumvention would have a marked and significant adverse effect on the value of the copyrighted firmware because it would result in a diminution in the value and production of copyrighted video games, thereby lessening the market for the PS3 console. Finally, because the act of circumvention would, in many if not most cases, be the first step in making the resulting circumvention tool or unauthorized video

game program available to others, such acts would constitute contributory copyright infringement and/or be regarded as inducing infringement.

EFF asserts that proposed exemption 3 is narrowly tailored. As a technical and practical matter, however, the act of circumvention that proposed exemption 3 would authorize would not and could not be confined to the execution of “lawfully acquired software applications” for the “purpose of enabling interoperability of such applications with computer programs on the gaming console.” It is not feasible to distinguish between facilitating lawfully acquired applications and facilitating applications that are not lawfully acquired. This is so with respect to both the act of circumvention and to the creation of a circumvention tool that is used for or results from such an act. Similarly, it is technologically impossible to limit the act of circumvention to facilitating interoperability, as distinct from acts that result in the creation, or enable the playback, of illegally-made copies of video games or other applications. Therefore, even if Section 1201(a)(1)(B) and the legislative history could be read to authorize the Librarian to grant an exemption for a “class of works” that is, in actuality, defined by reference to particular uses and users’ purposes, the record demonstrates that such a class does not exist and proposed exemption 3 should not be granted.

Finally, none of the statutory factors set forth in Section 1201(a)(1)(C) weighs in favor of granting the exemption. In particular, as to the first of these factors, there is no factual support for the proposition that meaningful numbers of new copyrighted works will be created by homebrewers whether or not circumvention is authorized. To the extent that any such works are created, however, their number will be far outweighed by the increase in the unauthorized copying and distribution of copyrighted video games and the resulting loss in their value.

In addition, and as to the fourth statutory factor, authorized circumvention, coupled with the proliferation of tools to aid in circumvention, will have a considerable negative effect on the market for and value of copyrighted video games. Based on its experience with circumvention of earlier versions of the PS3 firmware, SCEA knows that hacking results in a significant increase in illegal copying and distribution of its and others’ video games, which will substantially diminish the incentives of SCEA and others to develop and publish video games for the PS3 platform.

For the foregoing reasons, the Register should recommend to the Librarian that proposed exemption 3 not be granted.

II. INTRODUCTION

A. Nature of the Proposed Exemption

1. Video Game Consoles Are Not Like Smartphones

EFF phrases its proposed exemption as parallel to the exemption granted by the Librarian in 2010 for circumvention of smartphones, and asserts that the argument – particularly, the fair use analysis – for granting an exemption for circumvention of video game console firmware is and ought to be similar to the approach taken by the Register and the Librarian in the context of the smartphone exemption.⁸ This approach, however, elides the differences between the purposes and functions of smartphones and video game consoles, the environments in which they operate, and the effect and purpose of their respective TPMs.

A smartphone is a versatile and now virtually ubiquitous device that is, for many, indispensable to daily life. It is, of course, mobile, and is designed to perform many functions beyond that of a simple telephone or wireless communications device – including, at a bare minimum, an alarm clock, calendar, web browser, music player, and camera – and allows for the installation of hundreds of thousands of third-party apps in a host of categories.⁹ The operating system on a smartphone is necessarily more general than that of a video game console, providing functionality common to the needs of various types of users and supporting the widest range of user-level software. By contrast, a video game console is a highly specialized, function- and location-specific device that is, at least primarily, designed to play video games. This means that, as distinct from general purpose computers, the PS3’s hardware, *i.e.*, the physical components of the console, is optimized for the tasks most utilized in game-playing.¹⁰ The operating system, or “firmware,” licensed to users of the console is sleek, designed to run as efficiently as possible and consume few system resources while providing a high quality user experience.¹¹

⁸ See *EFF Submission*, *supra* note 4, at 31.

⁹ See THE APP STORE, <http://www.apple.com/iphone/built-in-apps/app-store.html> (last visited Feb. 10, 2012) (describing over 500,000 apps in categories such as Business, Travel, Sports & Fitness, Social Networking, News, Lifestyle, Games, Entertainment, Education, Family & Kids, and Music).

¹⁰ The PS3 central processor (“CPU”), for example, contains only 256 MB of system memory. By comparison, the least expensive computer available online from Dell.com includes a processor with 1 GB, or four times the memory of the PS3 CPU, plus another 2 GB of system memory. The PS3 compensates for its lack of general computing power with an array of highly specialized graphics processing units (“GPUs”) that are specifically designed to render graphics, principally for video game play, and are unsuited for most other applications.

¹¹ See *infra* Section II.B.2.

As video games have increased in complexity and incorporated new features, such as networked gaming, interconnectivity with handheld gaming devices, and integration with social networking websites, so, too, consoles have added network connectivity to support these features. Additionally, modern video game consoles typically include DVD and video-on-demand capability and, in the case of the PS3, a Blu-ray player. Nonetheless, the core function of a video game console is to play video games and, consequently, consoles are designed especially for the video game environment. Integral to that environment are the TPMs necessary to preclude malicious use and unauthorized copying and distribution of video games, including through commercial piracy.¹² In other words, the TPMs that protect the firmware, which is, of course, itself a copyrighted work, are absolutely integral to safeguarding the copyright interests in the copyrighted video games played on the consoles.

In evaluating proposed exemption 3, the Register should carefully examine the technical, practical, and business effects of granting the exemption on the copyrights in video games, and not just on the console firmware. In doing so, the Register should look at the record regarding circumvention of SCEA's PlayStation platform, and of other TPMs used in the video game industry, and resist any suggestion that the factual or analytical precedents in the 2010 Recommendation with respect to smartphones are applicable.

B. The PlayStation 3

The PlayStation 3 is SCEA's flagship video game console and entertainment system. It is the third in a line of SCEA consoles that dates back to December 1994. The PlayStation 2, released in 2000, is the most successful video game console in history, having sold more than 150 million units to date. The PS3 was originally released in 2006, and has been sold continuously since then. Over 60 million units have been sold to date. The handheld product for the PlayStation platform, known as the PlayStation Portable ("PSP"), was originally released in 2005. The next-generation handheld PlayStation, PlayStation Vita, is set to be released in North America in February 2012.

The PS3 incorporates several features that set it apart from the other seventh-generation consoles,¹³ Nintendo's Wii and Microsoft's Xbox 360. The PS3 is the only console to include a Blu-ray player, which enables consumers to watch Blu-ray movies in addition to playing video games. The PS3 also allows users to access the PlayStation Network ("PSN"), a free service exclusive to the PlayStation family of consoles, which

¹² Video game developers and publishers rely on the TPMs embedded in video game consoles for the assurance that the games they develop and distribute will not be subject to unlawful copying and rampant free distribution, so that they will be able to see a fair return on their financial investment. *See infra* Section III.B.1.d).

¹³ The seventh generation refers to consoles released since late 2005.

provides a variety of enhancements to the gaming experience. This includes multiplayer gameplay, trophies for achieving goals in certain games, player rankings, social networking and instant messaging, and web browsing. PSN also enables access to the PlayStation Store, which allows users to download free and paid content to their PS3, including full PSN games and demos playable on the PS3, patches and add-ons for existing PS3 games, video content, music, and other customizations for the PS3 console. The PlayStation Store offers a variety of games that appeal to all types – from the casual family user to hard-core gamers.

The PS3 also provides users with access to the Sony Entertainment Network, which includes a global catalog of over 10 million copyrighted music tracks; SD, HD and 3D videos, including movies from every major studio; streaming audio and video content from providers such as Pandora, NPR, Hulu Plus, Netflix, and MLB.tv; images and related services from Picasa, Photobucket, and Shutterfly; and content from services such as Twitter and Yahoo!.

1. PlayStation 3 Games

Over 1,100 games on disc and downloadable from PSN are available for PS3, of which over 200 are exclusive to the PlayStation console. SCEA is itself a significant publisher of PS3 video games, publishing approximately 15-20% of the games that have been developed for and are now available for that platform, including the widely acclaimed Uncharted and God of War franchises. In addition to SCEA's own games, others, ranging in size from small independent developers, including individuals,¹⁴ to large global entertainment software companies, such as Take-Two Interactive Software and Electronic Arts, develop and publish games for the platform.

Third-party video game publishers pay licensing fees to SCEA when they publish PlayStation games. Developers utilize a software development kit (“SDK”), purchased from SCEA, in order to create games native for the PlayStation. The SDK consists of hardware and software updated regularly to match the updates applied to PS3 systems, and contains proprietary elements belonging to Sony and other hardware manufacturers whose chips are incorporated in the PS3 system.

The cost of licensing is not a bar to start-up game developers who wish to develop for the PS3. A developer with experience and technical ability and a concept for a video game can apply to be an SCEA-licensed developer at no cost. Once accepted, licensed developers may obtain a free license for the SDK software and purchase the associated

¹⁴ For example, Bernie Schulenburg, who developed “Where-is-my-Heart,” a “Playstation mini” downloadable from the PSN, as “basically a clumsy attempt to come to an understanding of myself and my family.” See PLAYSTATION BLOG, <http://blog.us.playstation.com/2011/11/02/%e2%80%9cwhere-is-my-heart%e2%80%9d-hits-psn-next-week-free-for-playstation-plus/> (last visited Feb. 10, 2012).

tools. Start-up developers who do not wish to invest in PS3 development tools have the option of aligning themselves with others who own the tools, or requesting a tool loan from SCEA.

Once development of a video game is completed, the publisher submits it to SCEA for rigorous quality assurance. This includes ensuring that the game meets the quality standards and user interface requirements common to all PlayStation games and has been rated by the Entertainment Software Ratings Board, the independent association that rates video games. It also includes a security check to guarantee that the game does not contain malicious or damaging code that could affect the integrity of the PS3 or the PSN.¹⁵ Once a game passes the quality checks, SCEA prepares a delivery package which is digitally signed with SCEA's proprietary encryption key. The delivery package can then be distributed, either on a Blu-ray disc or via the PlayStation Store.

2. The PlayStation 3 Firmware

The PS3, like all sophisticated consumer electronics, requires an operating system both to maintain basic low-level functionality – such as reading and writing to storage devices, processing output to video, and overseeing the computing resources available – and to provide the user interface that allows users to interact with the PS3, navigate onscreen menus, and select and load video games to play. In the PS3, this operating system is embodied in firmware – a relatively streamlined piece of code stored in non-volatile memory that is the first code executed each time the PS3 is turned on.

The user interface on the PS3 is highly distinctive and creative, featuring a unique navigation system called the XrossMediaBar (“XMB”). This intuitive interface is specially designed to work seamlessly with the PS3 controller, and is also used in many of Sony's other consumer electronics products, such as television monitors, Blu-ray players, cameras, and mobile phones. The interface is customizable, allowing users to select themes that change aspects of the PS3 menu, such as the background image, menu icons, fonts, color, and sound effects.

SCEA devotes substantial development resources to the PS3 firmware. The firmware is under continuous development to add new features, to provide support for new hardware and peripherals, and to discover and patch potential security flaws. The firmware must be designed to run as efficiently as possible, so as not to diminish the computational resources available for the playing of video games. The firmware must also provide a user experience that meets SCEA's stringent quality standards and is consistent with Sony's worldwide brand for high quality products. Updates are released on an as-needed basis, generally about once a month. Firmware engineers operate under

¹⁵ For example, a game that is described by the developer as not network-enabled should not attempt to access the networking components of the PS3.

constraints of time, resources, and quality. Firmware updates, especially those related to security issues, are often urgent, and must be developed under significant time pressure.

The PS3 firmware is licensed to users of the PlayStation according to the terms of the System Software License Agreement for the PlayStation 3 System to which users agree when they purchase and use a PS3.¹⁶ Under the terms of the PlayStation License, users do not own the firmware.¹⁷ In connection with the licensed use of the firmware, users are not permitted, *inter alia*, to use the firmware with unauthorized software or hardware, to use tools to circumvent security, to violate any laws including software piracy laws, to obtain copies of the firmware through non-official channels, or to modify the firmware in any unauthorized way.¹⁸

3. The OtherOS Feature

OtherOS was a feature of PS3 consoles, running system software version 1.60 or later, which allowed users to install certain Linux-based operating systems on the console.¹⁹ Doing so enabled the PS3 to be used not only for its primary purpose, as a video game console, but also for secondary purposes, such as running productivity software and as a development tool for games that would be able to run on the PS3's processor. In connection with OtherOS, SCEA employed a Linux support technician to respond to requests for assistance from the Linux community.

OtherOS came as a successor to earlier PlayStation development tools that were intended for hobbyist use, including the Net Yaroze for the original PlayStation, and Linux for PlayStation 2. As with these earlier hobbyist development tools, OtherOS did not allow unrestricted access to the PS3 hardware. Users were able to access most

¹⁶ See System Software License Agreement (Version 1.4) for the PlayStation®3 System (Dec. 10, 2009) [hereinafter *PlayStation License*] (Attached as Exhibit A).

¹⁷ See *id.* at para. 1 (“You do not have any ownership rights or interests in the System Software [defined to include software and firmware]. All intellectual property rights therein belong to SCE and its licensors, and all use or access to such System Software shall be subject to the terms of this Agreement and all applicable copyright and intellectual property laws.”).

¹⁸ See *id.* at para. 2 (prohibiting certain uses, including use of firmware in connection with “unauthorized, illegal, counterfeit, or modified” software and use of any other software to cause the firmware “to accept or use unauthorized, illegal, or pirated software”).

¹⁹ See *Overview of the Open Platform for the PLAYSTATION3 System*, PLAYSTATION, <http://www.playstation.com/ps3-openplatform/index.html> (last visited Feb. 10, 2012). Linux is an open-source operating system based on the Unix architecture. It comes in a variety of implementations, or “flavors”, which vary in the components included and the user interface provided. Due to its open-source nature, Linux can be ported to essentially any hardware environment by users. Linux is generally distributed freely under the GNU public license or other similar open-source licensing scheme.

elements of the main processor, but were restricted from access to the RSX graphics processing unit. The RSX development tools are proprietary to Nvidia and are licensed exclusively with the PlayStation software development kit.

SCEA estimates that, at most, fewer than 2,000 PS3 owners (less than 1/10 of 1% of PS3 owners) used OtherOS. Although one of the stated purposes of OtherOS was to allow for hobbyist game development for the PS3, in reality it appears that very few games were developed in the OtherOS environment. As described in Section II.D below, the TPMs in the PS3 firmware were hacked last year. The hackers exploited vulnerabilities in Linux running as an OtherOS, which Sony could not control or patch. Sony concluded, therefore, that it had no choice but to give users a choice between continuing to use the OtherOS feature or continuing to access the PSN. As a result, the hack had the practical effect of forcing Sony to remove OtherOS and, with it, the open functionality that Sony had made available to would-be developers of applications for the PS3 platform. System software version 3.21, released on April 1, 2010, disabled OtherOS functionality for those PS3 owners who wanted to remain on the PSN.²⁰

Since OtherOS was removed, the PS3 has not been successfully hacked. Hackers using non-updated PS3s, however, have been able to publish outdated lists of private encryption keys utilizing the same type of approach that was used in the original hack of the PS3. Because this practice is limited to deprecated versions of the firmware, however, the current version of the PS3 system remains secure.²¹

C. Technological Protection Measures in the PlayStation 3

1. The Importance of TPMs for Console-Based Video Games

Unauthorized copying and distribution of video games poses a direct threat to the copyright interests of SCEA and developers and publishers for the PlayStation platform. The hacking of software on the PS3 or any other video game platform will result in an increase in the number of unlawful copies, which will, in turn, decrease the sales of authorized copies, thereby stifling video game developers' and publishers' incentives to

²⁰ The removal of OtherOS was the subject of a putative class action lawsuit against SCEA in the Northern District of California. *See* First Amended Consolidated Class Action Complaint, *In re Sony PS3 "OtherOS" Litig.*, No. CV-10-1811-RS, 2011 WL 1002249 (Mar. 9, 2011). On December 8, 2011, Judge Seeborg dismissed the final count of the complaint. *See* Order Granting Motion to Dismiss Without Leave to Amend, and Denying Motion to Strike as Moot, No. CV-10-1811-RS, 2011 WL 6117892 (N.D. Cal. Dec. 8, 2011).

²¹ For example, in its list of the most pirated games of 2011, TorrentFreak, a website that monitors download activity on the BitTorrent network, does not list games downloaded for the PS3, because it gets "considerably less downloads" than for the Nintendo's Wii, Microsoft's Xbox, and PCs. *See The Most Pirated Games of 2011*, TORRENTFREAK, <http://torrentfreak.com/top-10-most-pirated-games-of-2011-111230/> (last visited Feb. 10, 2012).

create and distribute games. These developers and publishers may choose to produce lower-cost and less complex games or, in some cases, reduce, or even cease, developing for that platform. Consumers who own the console that has been hacked will suffer, whether due to the reduction or cessation of games for the platform or to a lessening in the quality of games themselves.²² These effects are more fully elaborated in the ESA Submission.²³ SCEA is a member of the ESA and fully endorses those comments.

Given this reality, SCEA, like the other console manufacturers, includes TPMs, both in the firmware resident in the console and in each video game distributed on disc or downloaded. The TPMs ensure an environment in which only authorized copies of video games are playable on the console and, in so doing, cut off incentives to infringe the copyrights in those games.

2. Operation of TPMs on the PS3

The TPMs on the PS3 constitute an integrated system, with components residing in the firmware and on video game discs and downloads. They operate as a series of checks on programs as they are loaded into memory and executed. The protection provided by the PS3 TPMs start with the most basic function, the bootloader, which is the first software component to execute when the PS3 system is powered up. Before the bootloader loads the next component of the firmware, it performs an integrity check to ensure that the firmware has not been tampered with. As each component is loaded and the system grants access to more resources, further checks are done on the next level of the firmware to be loaded. This “bootstrapping” method ensures that any unauthorized modification to the firmware is detected before it can cause harm.

Once the firmware is fully loaded, it acts as a TPM on the video games and other applications that are run on the PS3. When a user loads a game, the firmware first checks to see if the firmware has itself been properly updated to provide the resources the game requires. The firmware also verifies the game’s digital signature to ensure that the game is authorized to run on the PS3 and that it has not been modified. The verification process ensures that the only games that can be loaded and played on the PS3 are those that have been vetted for potential security flaws and that are consistent with the expected high quality user experience. These checks, built into the firmware, are the primary means by which the PS3 environment creates disincentives for the unauthorized copying and distribution of video games: such copies will not be authorized by the checking function of the TPM and, therefore, will not be playable on a console. In addition to

²² This is readily apparent from the PC games market, which experienced a significant drop-off in sales and development once unauthorized copying and distribution became rampant.

²³ *ESA Submission, supra* note 7, at 2-3.

safeguarding copyright interests, the TPMs are essential to maintaining SCEA's brand inasmuch as they ensure both system security and quality control.

Given how the TPMs build from the basic functions to the complex, any interruption in the chain means that the entire environment is no longer secure. Normally, if a component fails a security check, the system will not continue to boot up, or the unauthorized copy of the game will not load. Allowing circumvention of the TPMs would mean that the basic security checks could be skipped and the firmware could be freely modified to bypass or eliminate the process by which the authenticity of a copy of a video game would be verified. The methodologies for circumvention and their adverse effects on the PlayStation are described in more detail in Section II.D below.

3. Alternatives to Circumvention of PS3 TPMs

EFF claims that circumvention is necessary to allow researchers and independent programmers to use the PS3 console for research and development purposes. That claim is not supported by necessity because SCEA is willing to work with researchers to provide them with access to the PS3's processors. One notable example is Folding@home, an application developed by Stanford University and distributed through the PlayStation Network that harnesses thousands of networked PS3's to determine the folding structure of proteins.²⁴ This application was developed in connection with SCEA developers, and uses the full power of the PS3 platform in a secure manner. Because it facilitates the use of PS3 consoles in a distributed computing model, it permits a scale not achievable through the circumvention of TPMs on individual PS3 consoles. The U.S. Air Force also worked with SCEA to acquire 1,760 older model PS3s in order to create the Defense Department's largest interactive supercomputer.²⁵

Hobbyists who are not creating retail games and who do not want to have their applications validated by the rigorous quality assurance process for authorized PS3 games have other options for development that do not require circumvention of the PS3's TPMs. Principally, they may develop software for any of the multitude of open platforms available in the marketplace. EFF argues that the PS3 should be hacked to enable the running of Linux; Linux, however, can be installed on any PC and on many other devices

²⁴ See *About Folding@home*, FOLDING@HOME DISTRIBUTED COMPUTING FOR PLAYSTATION 3, <http://www.scei.co.jp/folding/en/index.html> (last visited Feb. 10, 2012). See also FOLDING@HOME DISTRIBUTED COMPUTING, <http://folding.stanford.edu/English/Main> (last visited Feb. 10, 2012).

²⁵ See Kyle Orland, *U.S. Air Force Creates Powerful Supercomputer Out of PS3s*, GAMASUTRA (Nov. 30, 2010), http://www.gamasutra.com/view/news/31784/US_Air_Force_Creates_Powerful_Supercomputer_Out_Of_PS3s.php (noting that Sony and a distributor helped defense engineers acquire older PS3 units which "allow for the installation of Linux as an 'Other OS'").

that do not have TPM, including Android mobile devices, GPS devices,²⁶ and even a toaster.²⁷ Moreover, to the extent that there are some hobbyists who feel they absolutely must run their programs on a PS3 console, they can develop for the Adobe Flash platform, which allows games to be played on any web browser, including the browser built into the PS3. Therefore, homebrewer-hobbyists have no *need* to have access to the PS3 firmware, albeit some (and, it appears, a very small community) might have a *preference* for doing so.

D. Circumvention of the PS3 and Its Effects

Users have circumvented the TPMs in earlier versions of the PS3 firmware. How and why acts of circumvention can occur provides a useful illustration of why even a narrowly tailored exemption cannot, in practical or technical terms, authorize only benign, noninfringing uses.

In early 2010, hackers announced that they had successfully circumvented the TPMs on the PS3 firmware. The hack was achieved by exploiting vulnerabilities in Linux operating in the OtherOS environment that allowed them to access protected system memory and obtain some of the private encryption keys that form the basis of the TPMs. The stated intent of the hackers who circumvented the PS3's TPMs was not to enable illegal copying and distribution of video games. They said that they neither endorsed nor condoned piracy. They were not, however, studying the firmware for interoperability, seeking to create new works, or conducting scientific research. Nor were they seeking to restore OtherOS to the PS3 as it was still being offered and was, in fact, the means by which the hackers circumvented the TPMs.

In January 2011, one hacker published the PS3's private encryption keys on the Internet. Almost immediately and virtually exclusively, those keys were used to create "jailbreak" software that would modify the PS3's firmware to allow unsigned code (*i.e.*, code not authorized by Sony) to be run on the PS3 console. This software was then used to bypass the TPMs to run illegally made copies of games. SCEA saw an immediate rise in the number of illegal copies but no increase in homebrew development.

Today, even novice users can easily purchase a USB drive that contains the tools that will allow them to run illegal copies of any video game or other applications on a PS3 that has not had firmware updates.²⁸ The tools on the USB drive, of course,

²⁶ *Linux Source Code*, GARMIN, <http://developer.garmin.com/linux/> (last visited Feb. 10, 2012).

²⁷ *Defcon Pics – toaster running linux – Powered by PhotoPost*, VISUALIZE.US, <http://vi.sualize.us/view/4055804346ef2414d161b292aa9c3e56/> (last visited Feb. 10, 2012).

²⁸ Distribution of various methods of the circumvention of the PS3 TPMs, for outdated versions of the firmware, are already prevalent on the Internet, and easily found by searching for "PS3 Jailbreak." See, e.g., PS3BREAKSTORE, <http://www.ps3breakstore.com/> (last visited Feb. 10, 2012) (selling PS

incorporate keys that were obtained illegally and violate both Sections 1201(a)(2) and 1201(b) as they are designed to circumvent TPMs that control access to and protect the integrity of copyrighted firmware from unauthorized copying and the making of derivative works. In addition, the modified firmware is itself an unauthorized derivative work, the running of which is beyond the scope of and violates the PlayStation License and is, therefore, infringing.

The same keys can be used to create tools that allow users to take a legitimate copy of a game, break the encryption on it, and create unauthorized copies. Such tools are often referred to as “backup managers,” with the winking instruction that they are only to be used to make personal backup copies of games.²⁹ Users share these “backup copies” on the Internet through well known pirate websites and services like BitTorrent. Other users can then download the unauthorized copies onto their modified consoles and play them as if they were licensed copies. These games are infringing and their download violates the rights of reproduction and public distribution. Furthermore, using the keys, the video games may be modified, thereby creating infringing derivative works that allow users to alter their gaming experience. In the case of networked games, these modifications can adversely affect online game play and innocent players using authorized copies of software on unmodified PS3 systems.

III. EFF HAS FAILED TO MAKE OUT A PRIMA FACIE CASE IN SUPPORT OF THE EXEMPTION

A. EFF Has Not Carried Its Burden as the Proponent of an Exemption

EFF has failed to carry the burden that Section 1201(a)(1)(B), as elaborated by the Register in the Notice of Inquiry, requires.³⁰ Section 1201(a)(1)(B) authorizes the Librarian to grant an exemption only where its proponent meets its burden of demonstrating that users of a particular class of works are, or are likely to be in the succeeding three-year period, adversely affected by virtue of an access control “in their ability to make noninfringing uses” of the works. The proponent must demonstrate that the exemption has a “‘substantial’ adverse effect,” which means that the impact must be “more than ‘*de minimis*,’” and must be “distinct, verifiable, and measurable.” Moreover,

Jailbreak modchips for \$9.99 and \$14.99); *How to Jailbreak PS3 3.70*, PS3JAILBREAKK, <http://www.ps3jailbreakk.com/> (last visited Feb. 10, 2012) (providing a jailbreak download and instructions and stating “As soon as you figure out how to jailbreak PS3 3.70 please remember to share with all your friends who really need to know how to accomplish this and remind them to share this website too.”); *How to JailBreak PS3*, SONY JAILBREAK PS3, <http://sonyjailbreakps3.com> (last visited Feb. 10, 2012) (providing a jailbreak download and instructions).

²⁹ See *infra* Section III.C.3 & note 112.

³⁰ See *Notice of Inquiry*, *supra* note 2, at 60,400.

the proponent is required to show, by a preponderance of the evidence, that actual harm currently exists or is “likely” to occur in the succeeding three-year period. Speculation alone is insufficient; rather there must be “proof that adverse effects are more likely than not to occur.”³¹

EFF has failed to carry its burden. As an initial matter, EFF’s analogy to smartphones and the Librarian’s 2010 decision, based on the Register’s 2010 Recommendation, to create an exemption to allow use of independently developed applications on smartphones, is misplaced and should be given no weight. Given the substantial differences between the smartphone and video game environments, the Register should disregard recycled arguments regarding the 2010 exemption for the smartphone.

First, unlike the increasingly ubiquitous and, for some, virtually indispensable smartphone, users (such as the researchers and homebrewers posited by the EFF) who wish to use the PS3 for uses other than those for which it is designed, have plentiful alternatives to PlayStation and other video game consoles. Second, the use of TPMs on consoles is intended to protect not just the firmware but also, and perhaps more importantly, valuable and highly creative video games, which are works separate from the console’s firmware that are fully protected by copyright.

Third, circumventing the TPM on a video game console diminishes the experience of other console users. Many video games are currently played through a network against other live players. Those who modify their consoles are able to alter the gaming experience by, *e.g.*, giving themselves unlimited lives or points, or by increasing their functionality by allowing faster running, flying, or increased strength. These modifications affect gameplay for all players, especially those who choose not to circumvent the TPM on their consoles. Many users choose to play on a PlayStation, as opposed to other gaming platforms, because they know the environment is safe from such activity. Without these assurances, and if such modifications were to proliferate, many users would be driven from the PlayStation platform.³² This would result not only in a diminution in the value of the firmware in the console but also, as the PlayStation platform becomes less popular, in an increasingly diminished incentive to create video games for that platform.

³¹ *Id.*

³² Nicholas Deleacon, *Jailbreaking Your PS3: All Fun & Games Until Your Online Gaming is Ruined*, TECHCRUNCH (Jan. 17, 2011), <http://techcrunch.com/2011/01/17/jailbreaking-your-ps3-all-fun-games-until-your-online-gaming-is-ruined/> (“I can tell you that there’s nothing quite as discouraging as having your game ruined by hackers. . . . [And] there was no quicker way to get me to stop playing than to run across a [hacker].”).

Fourth, it is indisputable that circumvention of the firmware on video game consoles will enable – indeed, may often be intended to facilitate – the unauthorized copying and commercial piracy of a large number of valuable copyrighted works, including video games and other content accessible through the PlayStation. Because video games are expensive and time-consuming to produce, developers need assurance that their investments will be recoupable, and that their copyrighted works will not be subject to unauthorized copying and distribution and to commercial piracy soon after the game is released.³³

Beyond the strained analogies between the video game console and the smartphone, EFF's filing shows, at best, an impact of SCEA's TPMs on allegedly noninfringing activities that is, if anything, *de minimis* and, in any event, nothing more than one of inconvenience. First, EFF has not demonstrated that there is any significant number of researchers who prefer to use the PS3 console over other readily available and far more flexible computing platforms, much less any researcher who *does* wish to use the PS3 and has been prevented from doing so through legitimate, authorized means such as the use of unhacked PS3 consoles running not-yet-updated firmware, or the use of the distributed computing model employed by Stanford in the Folding@home project. Second, EFF has not shown that there is any significant number of users that would like to use the PS3 to play back legitimate applications independently developed using tools other than licensed PS3 development tools. Nor has EFF shown that any such hobbyists could not develop and play those same applications on PCs or other devices that do not rely on TPMs.

In support of its filing, EFF submits only the most meager of evidence. As to SCEA's PlayStation 3 platform, it submits nothing more than two affidavits from two researchers who once used that platform for isolated and now quite historical research uses and rue that that platform is no longer "open." There is no indication that proposed research uses of the platform currently are, or would be over the next three years, substantial, especially in light of numerous readily available alternative technologies, such as PCs, as well as SCEA's record of authorizing access to the PS3 platform for legitimate research purposes. EFF does not attempt to show that researchers are unable to use unhacked PS3s for their intended purposes. For one thing, older PS3s that run OtherOS can still be used as long as the firmware is not updated, and researchers would not need to update the firmware if they do not intend to use the PS3 for its intended purpose of playing back games. Moreover, distributed computing projects such as Stanford's Folding@home demonstrate that researchers can access *thousands* of networked, *unhacked* PS3s at once through the PSN.

³³ Keith Stuart, *PlayStation 3 hack – how it happened and what it means*, THE GUARDIAN: GAMES BLOG (Jan. 7, 2011), <http://www.guardian.co.uk/technology/gamesblog/2011/jan/07/playstation-3-hack-ps3> (“[P]iracy on the Nintendo DS and Sony PSP has . . . seen dozens of third-party developers and publishers abandoning the platform.”).

As to the asserted need to have access to SCEA's PlayStation consoles for homebrew applications and to play back homebrew games, EFF provides no facts. It submits affidavits from two homebrewers who use Nintendo's Wii system that assert that there is a substantial homebrew community for that system. Nintendo's system, however, is different from SCEA's PS3. The PS3's hardware, including the specially-developed Cell CPU and RSX GPU, has unique characteristics and is far more powerful and complex than that in the Wii.³⁴ The independent development of games that take advantage of the PS3's exceptional capabilities is a far more difficult and substantial undertaking than developing for the Wii.

EFF submits no homebrew-related affidavits as to the PS3, although it cites to a PS3 application that allows users to create backup copies of PS3 software, *i.e.*, to facilitate the making of unauthorized copies.³⁵ Although EFF's submission cites websites that evidence the sharing of a small number of games by a small number of PS3 homebrew users, the contents of those sites hardly are or establish facts on which the Register can or should rely. In fact, the PS3 has never had a large homebrew community, in part because creating games for the PS3 (unlike, by comparison, the development of apps for a smartphone) is technologically difficult and requires a significant amount of resources.³⁶

Taken together, the evidence submitted by EFF fails to demonstrate by a preponderance of the evidence that the TPMs used for Sony's video game environment are currently causing, or will in the next three years cause, a substantial adverse impact on an identifiable population of users.

B. EFF Has Failed to Provide Facts and Legal Analysis that the Uses Affected by the Prohibition Are Noninfringing

Section 1201(a)(1)(B) requires that the proponent demonstrate that the users of a copyrighted work are or will be adversely affected "in their ability to make noninfringing uses" of a "particular class of copyrighted works." This requires that EFF "provide sufficient facts and legal analysis" to demonstrate that the underlying use is

³⁴ The PS3 has one 3.2GHz PowerPC processor running, seven 3.2 GHz proprietary special-purpose processors, and the 550 MHz RSX proprietary graphics processing unit. The Wii has one 729 MHz PowerPC processor and one 243 MHz graphic processor.

³⁵ See *EFF Submission, supra* note 4, at 28. EFF asserts, citing to Section 117(a)(2), that the backing up of PS3 video game software might be a "practice generally sanctioned by the Copyright Act." Video game software, however, is not principally a computer program but is, instead, an audiovisual work, as to which Section 117 is inapplicable.

³⁶ EFF cites to a long list of homebrew games; only one of them was developed for the PS3. See *id.* at 26-28, nn.156-180.

noninfringing.³⁷ EFF has failed to carry its burden. In particular, the discussion of fair use in EFF’s filing – which principally relies on a purported (but faulty) equivalence between “jailbreaking” of smartphones for purposes of interoperability and circumvention of TPMs on video game consoles to “run independently created software” – is unpersuasive, given the differences in the two environments.³⁸

1. EFF’s Proposed Uses Are Not Fair Uses

EFF is incorrect in asserting that the uses for which proposed exemption 3 would authorize circumventing the TPMs in a video game console’s firmware are noninfringing fair uses. All four Section 107 factors weigh against a finding of fair use.

Before analyzing those factors, however, it is important to emphasize that the two principal types of uses that EFF asserts as noninfringing – installing software for the purpose of linking PlayStation consoles for research purposes and installing homebrew applications and playing back homebrew games – are remote from the purposes set out in the preamble to Section 107. Playing back a homebrew video game on an operating system is pure entertainment, and does not give rise to comment, news, reporting, teaching (including multiple copies for classroom use), scholarship, or research. Nor does installation of homebrew applications for the purported purposes of backing up a video game or using the PlayStation console as an FTP file server. As to the use of PlayStation consoles for research purposes, unauthorized copying of copyrighted works to facilitate that research does not advance any of these Section 107 purposes. To the extent that the PlayStation consoles are *used* for research, that is outside the uses with which copyright concerns itself inasmuch as it is unrelated to the type of research that Section 107 is intended to promote – research into, or that involves, the copyrighted work (*i.e.*, the firmware) itself.

Moreover, in considering whether the uses described by EFF are fair, the Register should not discount the obvious use of a compromised operating system to play unauthorized copies of copyrighted video games. Even if there were legitimate reasons to circumvent the TPMs on a video game console, experience shows that allowing unrestricted access to the firmware leads to immediate, widespread copying and distribution of copyrighted video games that is and would be highly destructive to the copyright interests of SCEA and video game publishers.³⁹ The Register must not ignore that this is by far the most significant use of hacked PS3s.

³⁷ See *2010 Recommendation*, *supra* note 6, at 10, 12.

³⁸ See *EFF Submission*, *supra* note 4, at 31 (“[T]he fair use analysis for Proposed Class #2 [*i.e.* Proposed Exemption 3] is virtually identical to the fair use analysis for Proposed Class #1.”).

³⁹ Distribution of various methods of the PS3 jailbreak, for outdated versions of the firmware, is already prevalent on the Internet, and easily found by searching for “PS3 Jailbreak.” See *supra* note 28.

The Register previously opined, in the context of the smartphone exemption, that circumvention that results in the playback of unauthorized copies of content is irrelevant to the “purpose and character of the use” because the use being considered in that case could be narrowly defined solely to enable interoperability.⁴⁰ Without opining on the merits of that conclusion in the context of smartphones, which is, as discussed above, a wholly different context, SCEA respectfully submits that no such conclusion can properly be reached as to video game consoles, particularly in light of the direct and demonstrable link between circumvention of the TPM by “white hat” hackers in late 2010 and early 2011 and the immediate widespread proliferation of tools to copy and play unauthorized copies of games on PS3s. Moreover, as discussed in the ESA Submission, the technological steps necessary to circumvent the TPM on a video game console for the purposes of using homebrew software or enabling OtherOS functionality are the same as the steps that would enable the use of unauthorized copies of software or video game or other content.⁴¹ In short, notwithstanding careful crafting of the exemption by the Librarian, the stated limitations are and will be entirely illusory, with the practical effect that the Librarian would be sanctioning, on the recommendation of the Register, widespread copying and distribution of unauthorized copies and, potentially, commercial piracy.

Finally, as discussed below in Section III.B.2, circumvention, as authorized by proposed exemption 3, would inevitably be part of activities that are far from benign: circumvention acts will result in the creation and subsequent distribution of circumvention tools that will violate Section 1201(a)(2) and will constitute secondary copyright infringement. Those types of uses are hardly consistent with the equitable underpinnings of Section 107 and the public interest purposes that are set forth in its preamble.

a) The Purpose and Character of Use

EFF asserts that the first fair use factor weighs in favor of an exemption because the uses that proposed exemption 3 would sanction are transformative,⁴² since they would add “further purpose or character” to the original work. Circumventing the TPM on a

⁴⁰ See *2010 Recommendation*, *supra* note 6, at 95.

⁴¹ *ESA Submission*, *supra* note 7, at 3-4.

⁴² EFF’s analysis of the purpose and character of these uses focuses on whether they are transformative. Principally, however, this factor looks to whether a use is commercial. To the extent that circumvention would allow users to avoid paying for authorized software, license fees, or alternative technology, the uses are commercial. See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1015 (9th Cir. 2001) (“[R]epeated and exploitative copying of copyrighted works, even if the copies are not offered for sale, may constitute a commercial use. In the record before us, commercial use is demonstrated by a showing that repeated and exploitative unauthorized copies of copyrighted works were made to save the expense of purchasing authorized copies.”) (citations omitted).

console and modifying the firmware is in no way a transformative use of the firmware; it does not “add[] something new, with a further purpose or different character, altering the first with new expression, meaning or message.”⁴³ Running the firmware (even firmware modified to a *de minimis* extent by hackers), whether to support the play back of illegally made copies or derivative works of games or legitimate independently developed applications or games, is in no way transformative – it is using the firmware in just the way that it was originally developed by SCEA.

(1) Playing Homebrew Games or Installing Other Homebrew Applications Are Not Transformative

Using the firmware to play homebrew games or run other homebrew applications is not a new or different use or function. The console’s primary function is to facilitate the playing of games, and the use of the console for running slightly different, albeit unauthorized applications, is hardly transformative of the firmware. In the playing of homebrew games, there is no “further purpose or character” because gameplay on the console is the very purpose for which the firmware is designed and made available. Moreover, using firmware to run an independent application is not a different function for the firmware. The Register largely has agreed that the alteration of an operating system for purposes of enabling compatibility with independently created applications may well not be transformative.⁴⁴

(2) Use of PS3 Consoles for Research Purposes Is Not Transformative

EFF also argues that the PS3 consoles could be used for research purposes and that the installation of operating systems for research is transformative. As discussed above, the use of the consoles as intended – to perform processing functions – is not transformative. Although, some years back, a handful of researchers might have wanted to use the consoles for a purpose different than playing video games – *i.e.*, for research rather than gameplay – these uses do not support a finding of fair use.

First, as discussed above, this use is not transformative because SCEA had designed and contemplated that the PS3 could be used for research purposes, and, in fact, has authorized research uses of that platform, such as Folding@home and use of PS3s by the U.S. Air Force. Second, research uses of the PS3 platform are unlikely to be significant today or over the next three years. Though it may be feasible to create a networked cluster of PS3s for some other purpose, that use is not likely today or in the

⁴³ *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994).

⁴⁴ 2010 *Recommendation*, *supra* note 6, at 95 (“[T]he proponents of the exemption make no claim of “transformative use and . . . it is unlikely that they would be considered transformative Apple’s observation that the use is not transformative is accurate.”).

future to be a significant noninfringing use because it is not necessarily or, in reality, the cheapest or most sensible solution.

(3) Reverse Engineering Cases Are Inapplicable

EFF asserts that Ninth Circuit precedent regarding reverse engineering for purposes of installing computer operating systems and creating new games is applicable here. Moreover, the Register previously has relied on those cases in the 2010 Recommendation's analysis of the first fair use factor with regard to smartphones. Those cases and their facts are, however, distinguishable in this context.

In *Sega Enters. Ltd. v. Accolade, Inc.*,⁴⁵ a competitor reverse-engineered object code to make its video games compatible with, and run on, the Sega console by studying the operating system code and replacing Sega's code with its own code. The Ninth Circuit concluded (as the Register has recognized) that the copying was for a "legitimate, non-exploitative purpose, and that the commercial aspect of its use can best be described as of minimal significance."⁴⁶ By contrast, circumvention pursuant to proposed exemption 3 presumably would not be by a direct competitor who would be creating its own operating system, but rather would be by individuals who are replicating and distributing the circumvention tools. Those tools would enable and facilitate potentially massive amounts of unauthorized copying and distribution of video games and have a profoundly adverse effect on SCEA and video game publishers. No such collateral damage was identified in *Sega*. Moreover, in *Sega*, discovery, declarations, and the facts propounded at a preliminary injunction hearing all demonstrated to the district court that Accolade's actions would lead to "an increase in the number of independently designed video game programs."⁴⁷ Here, however, EFF has produced no such facts. To the contrary, as discussed above in Section II.C.1, the sanctioning of circumvention of the PS3's TPMs would likely have a chilling effect on the development of authorized games for the PS3. The Register has no factual basis, provided by EFF or otherwise, for concluding that allowing users to circumvent the TPMs for purposes of reverse-engineering the firmware on the PS3 platform would result in a substantial increase in independently designed video games for that platform.

EFF also cites to *Sony Computer Entm't, Inc. v. Connectix Corp.*,⁴⁸ but that case, too, is distinguishable. In *Connectix*, the PlayStation firmware was copied for the purpose of creating a personal computer-based platform, *i.e.*, to allow for the playback of

⁴⁵ 977 F.2d 1510 (9th Cir. 1992).

⁴⁶ *Id.* at 1522-23 (quoted in 2010 Recommendation, *supra* note 6, at 94).

⁴⁷ *Id.* at 1522.

⁴⁸ 203 F.3d 596 (9th Cir. 2000).

PlayStation games in a new environment using a PlayStation emulator. Based on the factual record in that case, the Ninth Circuit concluded that Connectix's acts were "modestly transformative" in creating a new platform,"⁴⁹ and that Connectix was a "legitimate competitor in the market for platforms on which Sony and Sony-licensed games can be played."⁵⁰ Nothing in the decision suggests that Connectix's activities would have facilitated unlawful copying of PlayStation games themselves. By contrast, as noted above, none of the uses for which EFF is seeking an exemption are transformative, and there are no facts to suggest that the exemption is being sought for purposes of enabling video games that SCEA or other publishers developed for the PlayStation platform to be played on another platform. Accordingly, regardless of whether *Connectix* itself was correctly decided, that decision is not germane in this context because Connectix's purposes – of facilitating platform-shifting of authorized games – are unrelated to either the playback of unauthorized video games or research uses of the PS3 platform.

In support of its argument, EFF cites to other fair use cases, such as *Kelly v. Arriba Soft Corp.*⁵¹ and *Perfect 10, Inc. v. Amazon.com.*⁵² Those decisions are even less factually or legally germane than *Sega* and *Connectix*, and just as inapposite in the present context, because they deal with questions of whether the defendant's uses were fair insofar as they were transformative, *i.e.*, they served a different function or purpose than the original intended uses. As noted above, however, the proposed uses for which proposed exemption 3 is being sought are not transformative.

(4) Section 1201(f) Is Inapplicable to the Fair Use Analysis Under Section 1201(a)(1)

Although EFF does not seek to rely on Section 1201(f) in asserting that the first factor cuts in favor of a fair use finding, the 2010 Recommendation with respect to smartphones appears to conclude that the Register's fair use analysis in that case was informed by Section 1201(f). Such a conclusion, however, is unsupported by the language and structure of the DMCA. First, the metes and bounds of permitted circumvention – for purposes of the statutory exemption for reverse engineering from Section 1201(a)(1) *and* (a)(2) – are set out in Section 1201(f) itself. There is nothing to indicate that Congress' express statutory exemption from anti-circumvention liability for reverse engineering is intended to affect or inform the analysis as to whether that act of authorized circumvention would also (or not) infringe a copyright as determined by a

⁴⁹ *Id.* at 606.

⁵⁰ *Id.* at 607.

⁵¹ 336 F.3d 811 (9th Cir. 2003).

⁵² 508 F.3d 1146 (9th Cir. 2007).

court.⁵³ Indeed, given that anti-circumvention claims under the Digital Millennium Copyright Act and copyright claims are different and independent, a conclusion to the contrary would be surprising.

Second, Section 1201(f) specifically creates an exemption applicable to Section 1201(a)(2), so that the provision to others of a circumvention tool created under the aegis of Section 1201(f) is specifically authorized. The Librarian's grant of an exemption pursuant to a Section 1201(a)(1) rulemaking does not affect whether the distribution of the tool so created violates Section 1201(a)(2).⁵⁴

For the foregoing reasons, the first factor weighs strongly against a finding of fair use when a user copies the entirety of the PS3 firmware to circumvent its TPMs.

b) Nature of Copyrighted Work

The second fair use factor, the nature of the copyrighted work, weighs strongly against a finding of fair use. "This factor recognizes that fair use is more difficult to establish when the work being used is at the core of intended copyright protection. . . .

⁵³ See H.R. Rep. No. 105-551, pt. 2, at 42, 43 (1998) ("[T]he goal of this section is to ensure that current law is not changed, and not to encourage or permit infringement"); *id.* ("[T]hese acts are permitted only to the extent that doing so does not constitute infringement, or violation of other applicable law."). In this regard, the *2010 Recommendation*, *supra* note 6, at 92, 94, misconstrues a statement in the House Manager's Report in support of the bill that became the Digital Millennium Copyright Act in suggesting that it "endorses" or "relies on" *Sega*. Rather, consistent with the language of H.R. Rep. No. 105-551 cited above, the House Manager's Report simply underscores Congress' intention that current copyright case law (for "certain acts of identification and analysis done in respect to computer programs") not be "changed," *i.e.*, that the Section 1201(a)(1) and (a)(2) prohibitions regarding circumvention and dissemination of circumvention tools ought not to have the effect of precluding reverse engineering that does not infringe copyright, but only to the extent expressly permitted by the terms of Section 1201(f). See Staff of H. Comm. on the Judiciary, 105th Cong., Section-by-Section Analysis of H.R. 2281 as Passed by the United States House of Representatives on August 4, 1998, at 14 [hereinafter *House Manager's Report*].

⁵⁴ In this regard, the *2010 Recommendation* is somewhat puzzling to the extent that it might be read to suggest that an exemption under Section 1201(a)(1) for the iPhone (the circumventer "not falling within the four corners of the [Section 1201(f)] statutory exemption") would actually allow a person who circumvents to provide circumvention "means" to another person to "install and run the independently created application on his or her iPhone." See *2010 Recommendation*, *supra* note 6, at 93-94 & n.318. In contrast to Section 1201(f), which expressly establishes a statutory exemption from Section 1201(a)(2) liability, an exemption granted by the Librarian under Section 1201(a)(1) in no way authorizes the person who engages in authorized circumvention pursuant to that exemption to disseminate his or her circumvention tools, which is an act that could, given the facts, violate Section 1201(a)(2). Indeed, elsewhere the Register seems to recognize this point. See *id.* at 170-71 ("Nothing in this rulemaking can or is intended to insulate [circumvention services] from liability under Section 1201(a)(2) to the extent that they fall within its scope. [Whether such activity falls within Section 1201(a)(2)] is not a matter to be resolved in the rulemaking.").

Creative and original works are accorded greater protection than factual works.”⁵⁵ In analyzing the second factor, courts “may consider, among other things, whether the work was creative, imaginative, and original . . . and whether it represented a substantial investment of time and labor made in anticipation of a financial return”⁵⁶

EFF invokes *Sega, Connectix*, and the 2010 Recommendation with respect to smartphones to assert that the second factor weighs against fair use. As noted above, the two Ninth Circuit cases cited by EFF are inapposite in the context of EFF’s request. Moreover, even if the Register had before her a factual record, akin to the record before the district courts in those two cases, to conclude that the operating system of a smartphone principally comprised functional, uncopyrightable elements, or was of the view that the second fair use factor invariably cuts in favor of a fair use finding whenever operating systems are being copied, her conclusions then and in that context cannot and should not apply to the firmware in a video game console.

First, that computer software may perform functions has no relevance to whether it is “factual” or “creative,” at least for purposes of a fair use analysis.⁵⁷ Computer software does not contain, recite, or compile facts, which may, for example, in the context of a biography be more likely to be subject to fair use. “Functional” is not the same thing as “factual.”

Second, computer programs are highly creative works, requiring programmers to craft code to solve highly intricate problems with exacting precision, a process that has been compared to writing a poem to fit a meter or composing a musical score to fit within the available range of notes.⁵⁸ Designing computer software involves enormous

⁵⁵ *Storm Impact, Inc. v. Software of the Month Club*, 13 F. Supp. 2d 782, 789 (N.D. Ill. 1998) (finding that the works at issue “are computer games, original and creative works. They are not facts or news. This weighs in favor of [the copyright holders].”).

⁵⁶ *MCA, Inc. v. Wilson*, 677 F.2d 180, 182 (2d Cir. 1981).

⁵⁷ See *Lotus Dev. Corp. v. Paperback Software Intern.*, 740 F. Supp. 37, 58 (D. Mass. 1990) (“[A] court must not allow one statutory mandate – that functionality or usefulness is not itself a basis for copyrightability – to absorb and destroy another statutory mandate – that elements of expression are copyrightable.”).

⁵⁸ See National Commission on New Technological Uses of Copyrighted Works, Final Report, at 15 (1979) (“As previously noted, a program is created, as are most copyrighted works, by placing symbols in a medium. In this respect, it is the same as a novel, poem, play, musical score, blueprint, advertisement, or telephone directory.”); Arthur R. Miller, *Copyright Protection for Computer Programs, Databases, and Computer-Generated Works: Is Anything New Since CONTU?*, 106 HARV. L. REV. 977, 984 (1993) (“Computer programs and other more traditional literary works, and the processes by which they are created are quite similar. Computer programs, like other literary works, are expressive. The imagination, originality, and creativity involved in writing a program is comparable to that involved in more time-honored literary works and far exceeds various mundane efforts that have long enjoyed protection under the copyright rubric.”). The view of the Register (and courts) that, as a general

investments of time and resources.⁵⁹ Computer programs are not second-class literary works. There is no support in the Copyright Act for the supposition that the second fair use factor inevitably cuts against the copyright owner of a computer program.

Third, leaving aside views with respect to fair use and operating systems in general, or the operating system that operates an iPhone, the firmware, including the TPMs, that drives the PS3 is a highly creative work, which provides the user with a seamless, visible interface designed to provide the highest quality user experience in an intuitive, visually stunning manner. Teams of engineers and designers work together over a period of multiple-person months to create and refine this interface, a continuously ongoing process. SCEA's investment in developing and refining the firmware is substantial and it reflects and embodies multiple creative and engineering decisions. In all, the PS3 firmware is at the creative end of the fair use spectrum, both in light of the user interface that users see and in providing highly efficient processing on the PS3 platform.⁶⁰

In light of the highly creative nature of the PS3 firmware, the second factor also weighs against a finding of fair use.

c) Amount and Substantiality of Portion Used

The uses for which EFF proposes exemption 3 would involve copying and running the firmware in its entirety, and EFF implicitly acknowledges that fact. The third factor, which requires consideration of whether the amount used is “reasonable in relation to the purpose of the copying,”⁶¹ weighs against finding that EFF's proposed uses are fair. Even if only a small portion of the work is copied, the use will not be considered fair if that portion involves the essence or essential part of the copyrighted work.⁶²

proposition, software has functional elements that would not be subject to copyright protection, *see 2010 Recommendation, supra*, note 6 at 96, has no bearing on the long-established and uncontroverted proposition that computer software is fully copyrightable and that the copying of an entire program violates Section 106 absent an applicable statutory exemption.

⁵⁹ *See Wall Data Inc. v. Los Angeles Cnty. Sheriff's Dept.*, 447 F.3d 769, 780 (9th Cir. 2006) (finding that because computer software was protected by copyright and was developed over several years, requiring a multi-million dollar investment, the nature of the copyrighted work weighed against a finding of fair use).

⁶⁰ *Cf. Advanced Computer Software Servs. of Mich., Inc. v. MAI Sys. Corp.*, 845 F. Supp. 356, 365 (E.D. Va. 1994) (finding that software is a creative work because “[i]t is not a mere compilation of existing information; it is instead a specially designed and crafted work which represents a substantial investment of time and labor”).

⁶¹ *Wall Data*, 447 F.3d at 780 (copying of an entire work weighs against a finding of fair use).

⁶² *Harper & Row, Publishers, Inc. v. Nation Enters.*, 471 U.S. 539 (1985) (finding that the Copyright Act requires an evaluation of “the portion used in relation to the copyrighted work as a whole,” and

Copying of virtually the entire work evidences copying of the essential portion of the work and weighs against a finding of fair use.⁶³ In order to exploit the hack that circumvents the TPMs on a PS3 video game console, the user must run a slightly modified copy of the entire firmware.

EFF relies on language in the 2010 Recommendation with respect to the smartphone in which the Register acknowledged that the entire work was copied, but emphasized that the amount of the modifications to the copyrighted work were *de minimis*. That reliance is misplaced. For purposes of determining whether the use is noninfringing, what is germane is the total amount of the work that is copied (which is relevant to a violation of Section 106(1)) and not the amount of the total work that is modified for purposes of creating an unauthorized derivative work (which may, according to the Register, be a fair use with respect to Section 106(2)). For purposes of determining whether the copying of the entire work is a fair use, the amount of material that the user modifies or adds is irrelevant once it has been determined that the reproduction is itself not transformative.⁶⁴

The third fair use factor, therefore, disfavors a finding of fair use.

d) Market for the Copyrighted Work

EFF asserts that the fourth fair use factor cuts in favor of granting the exemption because circumvention will not negatively affect the market for the video game firmware. EFF contends that circumvention will, in fact, “stimulate the market for the work;” EFF is dismissive of concerns that circumvention could result in “potential incidental damage, such as security concerns or device integrity, that might arise from users that jailbreak their devices.”⁶⁵ In essence, EFF is arguing that it (a) knows better than SCEA how best to market firmware in video game consoles and the extent to which TPMs are important to SCEA, other video game publishers, and players, and (b) that security concerns and unauthorized reproduction and distribution of video games should be of no concern to the Librarian. On both counts, EFF is incorrect.

analyzing those portions used, not the amount of modification); *Cable/Home Comm. Corp. v. Network Prods., Inc.*, 902 F.2d 829, 845 (11th Cir. 1990).

⁶³ *Cable/Home Comm.*, 902 F.2d at 845 (finding that a chip that copied 86% of a computer program constitutes virtually all of the copyrighted work and weighs against a finding of fair use).

⁶⁴ *Cf. Harper & Row*, 471 U.S. at 565 (“As the statutory language indicates, a taking may not be excused merely because it is insubstantial with respect to the *infringing* work.”).

⁶⁵ *EFF Submission*, *supra* note 4, at 33.

The fourth fair use factor addresses “whether the infringing use threatens the potential market for, or value of, a copyrighted work.”⁶⁶ It also considers whether “unrestricted and widespread conduct of the sort engaged in by the defendant” would diminish the value of copyrighted works.⁶⁷ Because unrestricted and widespread circumvention would significantly harm the market for SCEA’s copyrighted firmware, as well as SCEA- and third-party-produced video games, the fourth factor cuts strongly against finding that uses authorized by proposed exemption 3 would be non-infringing.

EFF’s assertion that “opening up the operating system is likely to stimulate the market,”⁶⁸ is without support. In fact, history teaches that circumvention of the TPMs on the PS3 console’s firmware, under the aegis of the proposed exemption, will have the opposite effect: it will lead to substantial illegal reproduction and distribution of video games.⁶⁹ As discussed above in Section II.D, this is exactly what happened when hackers circumvented the TPMs on the PS3 *for reasons other than enabling piracy*. It was only SCEA’s ability to quickly patch the security vulnerabilities (in part by eliminating the OtherOS feature) that prevented the type of significant losses that followed the hacking of the PSP. As the PS3 and PSP hacks demonstrate, the result of sanctioned circumvention of the PS3’s TPMs will be that publishers, unable to recoup development costs, will stop investing in software for the system. A shrinking of the market for the video games played on the PS3 will, in turn, diminish the market for the PS3 console itself, and, of course, its embedded firmware. As ESA emphasizes, third-party developers and publishers are far less likely to develop and distribute games for an insecure platform, or one where widespread copying of their games is more likely.⁷⁰

⁶⁶ *Wall Data*, 447 F.3d at 781.

⁶⁷ *Campbell*, 510 U.S. at 590.

⁶⁸ *EFF Submission*, *supra* note 4, at 33.

⁶⁹ *See, e.g., What are the benefits of jailbreaking PS3?*, YAHOO! ANSWERS, <http://answers.yahoo.com/question/index?qid=20100922180738AA15iup> (In answering what the benefits are of purchasing a \$99 tool to jailbreak the PS3, a commenter states, “Well the good thing is that you save money by either buying games and copy it to the hdd so you can see fast enough so get almost what you paid for, or better you borrow a game and copy.” [sic]); Nathan Brown, *PS3 Hacked Wide Open*, EDGE (Jan. 4, 2011), <http://www.edge-online.com/news/ps3-hacked-wide-open> (“While the various hackers are all keen to distance themselves from piracy . . . the primary consequence of the console being hacked wide open is sure to be lost game sales.”). By way of analogy, hacking of SCEA’s PSP handheld system and consequent piracy of copyrighted games is estimated to have resulted in \$68 million lost revenue.

⁷⁰ *See ESA Submission*, *supra* note 7, at 2-3. *See also* Stuart, *supra* note 33 (stating that piracy on the Nintendo DS and PSP cost the industry \$41 billion from June 2004-January 2011 and caused dozens of third-party developers and publishers to abandon the platforms); Nathan Brown *supra* note 69.

Maintaining a safe and secure platform is crucial to keeping game publishers confident enough in the system to continue to create new works. An exemption that would unlock the PS3 – for any purpose, even if thought to be benign – would give malicious users free rein to play unauthorized copies of games on the PS3, and would be similarly harmful and have a direct, negative effect on the value of SCEA’s – and other publishers’ – copyrighted firmware and video games.

Circumvention will diminish the market for the PS3 in yet another way. Part of the reason consumers purchase consoles like the PS3 is that they are assured of a quality experience on a closed system, which, while seen by EFF as unduly limiting in some respects, is a guarantee of quality and security. Unlike the circumvention of smartphone operating systems, circumvention of TPMs on video game consoles would directly harm the experience of other users, including those who continue to use legitimate copies of the games and firmware. Modification of the firmware allows modification of games that are played over a network. This can include the ability to move more quickly than the game would normally allow, receive unlimited points or lives, obtain weapons unavailable to a legitimate user, or engage in other forms of cheating or harassment. This practice, commonly referred to as “griefing,” is detrimental to, and ruins the gaming experience for, non-modifying users,⁷¹ and can even render a game completely unplayable for those who choose not to modify the firmware on their consoles.⁷² As one video game writer explained, “Online gamers must have confidence established by the console manufacturer, their online network, and even from the game designers themselves that everyone involved in the game is on equal footing. . . . If that confidence does not exist, then those users will simply stop paying for services and the

⁷¹ See Nicholas Deleon, *Jailbreaking Your PS3: All Fun & Games Until Your Online Gaming Is Ruined*, TECHCRUNCH (Jan. 17, 2011), <http://techcrunch.com/2011/01/17/jailbreaking-your-ps3-all-fun-games-until-your-online-gaming-is-ruined/> (“The worst part about this [PS3 Jailbreak hack] . . . is that it appears to be hurting legitimate gamers more than anyone else. A quick YouTube or Google search turns page after page of results on how, after having Jailbroken a PS3, you then hop online with games like Call of Duty: Black Ops and basically run amok, ruining legitimate gamers’ fun in the process.”); Nick R. Brown, *Opinion: Should Console Jailbreaking be Legalized?*, GAMASUTRA (Dec. 7, 2011), http://www.gamasutra.com/view/news/38969/Opinion_Should_Console_Jailbreaking_Be_Legalized.php (“[I]f such a thing were legalized, jailbreaking could negatively affect the gaming experience of paying customers, whose expectations are to enter a protected walled garden world that provides for a fair and balanced online game playing experience.”).

⁷² Nick R. Brown, *supra* note 71 (“[Jtagging, or jailbreaking the Xbox 360,] also accelerated a massive hacking campaign in 2009 involving Activision’s massively popular game Call of Duty: Modern Warfare 2, in which jtagged hardware owners were able to create game lobbies in which the jtagged users were able to auto aim, see through walls, modify point distribution, and partake in other forms of cheating. This particular game was rendered completely unplayable on the PlayStation 3 as well in early 2011 due to the hacking that took place on that console.”).

manufacturers' revenue streams will dry up and hurt the company's ability to provide future hardware and service provisions."⁷³

These concerns are neither speculative nor hypothetical, and their consequences for the value of copyrighted software are demonstrable. As discussed above, SCEA experienced circumvention of the TPM on its PSP, which eroded publisher confidence in the system as sales of legitimate software declined dramatically and customers' interest in the platform eroded. Experience shows that once the temporary euphoria for free games subsides, the result is a decline in users' enthusiasm for the device, with the consequence that consumers become less inclined to purchase game consoles and games for that platform.

EFF suggests that these sorts of concerns – under the rubric of “device integrity” – are irrelevant to the fourth fair use factor, and, in the 2010 Recommendation with respect to smartphones, the Register described Apple's similar concerns as ones driven by a “fear” of “harm to its reputation.”⁷⁴ If the Librarian grants EFF's request, the exemption will sanction the copying of the entirety of SCEA's firmware and the stripping out of the TPMs, resulting in both the creation of unauthorized derivative works of the firmware and illegal copying and distribution of SCEA's and others' copyrighted works. Unlike certain types of market impairments that result from use of a copyrighted work, such as tarnishment or criticism that diminishes sales, these actions would have a direct and demonstrable negative monetary effect on – and would supersede – the actual and the potential markets for exploiting rights in the firmware and video games that constitute the PS3 environment. For these reasons, the fourth fair use factor does not favor granting proposed exemption 3.

2. Uses Proposed to Be Exempted from the Anti-Circumvention Provision Are Not Noninfringing Because They Would Constitute or Result in Secondary Copyright Infringement

EFF purports to seek a narrow exemption that, it contends, would not authorize circumvention to create or play back unauthorized copies of video games. This ignores the practical reality with respect to circumvention of PS3: the same tools that permit the playing of noninfringing but unauthorized applications necessarily permit the playing of *infringing* games or applications. Once that door is open, it is open to all corners – and there can be no doubt that the door will be used far more by committed infringers than by “homebrew” hobbyists or academic researchers.

⁷³ *Id.*

⁷⁴ 2010 Recommendation, *supra* note 6, at 99.

As indicated above, the dissemination of tools designed to circumvent TPMs “for the purpose of enabling interoperability of lawfully acquired software applications with computer programs on the gaming consoles” is likely to violate Section 1201(a)(2), which condemns tools that are used for the primary purpose of circumventing TPMs. Section 1201(a)(2) contains no exception for tools that have, as their primary (or any other) purpose, circumvention that is nonetheless authorized pursuant to an exemption to Section 1201(a)(1) liability, whether that exemption is statutory or granted by the Librarian.⁷⁵

Beyond Section 1201(a)(2), however, acts of circumvention undertaken purportedly under the authority of proposed exemption 3 may also be infringing to the extent that they are part and parcel of a broader set of activities that constitute secondary copyright infringement. The modifications to the PS3 firmware that EFF seeks to permit – ostensibly in support of the development of applications and the playback of homebrew games – will permit users to create and run unsigned, unauthorized copies of copyrighted games.⁷⁶ Indeed, given the small homebrew community for PS3, that is the likeliest use of the circumvention tool that would be developed under the umbrella of the exemption. This is further made clear by EFF’s reference to the “MultiMAN” software that allows users to create a “backup” of a PS3 video game, where the making of such backup copies is not authorized by the Copyright Act and where the reality is that such “backup” copies (or the original copies) will be unlawfully distributed.⁷⁷

⁷⁵ Section 1201(a)(2) does not permit the dissemination of tools that have, as their primary purpose, circumvention authorized by a statutory or Librarian-granted exemption. If that were the case, then there would have been no need for Congress, in certain of the statutory exemptions (*e.g.*, Sections 1201(f)(2), 1201(g)(4), and 1201(j)(4)), to exempt from Section 1201(a)(2) liability persons who disseminate circumvention tools created under such exemptions, or, in others (*e.g.*, Section 1201(d)(4)), to emphasize that the statutory exemption from liability under Section 1201(a)(1) does not constitute a defense with respect to a claim brought under Section 1201(a)(2).

⁷⁶ GeekDad Rewind, *Nintendo and UK High Court Sound the Death Knell for Chiptunes*, WIRED (Aug. 16, 2010), <http://www.wired.com/geekdad/2010/08/death-knell-for-chiptunes/> (“Let’s talk straight here, people. In gamer circles the term ‘homebrew’ is often used as a code word for piracy. This certainly doesn’t mean that anyone who owns a Game Boy flash cartridge or runs custom firmware on his PSP is a pirate, but sometimes this homebrew argument is invoked with a sly nod and wink in reference to the fact that the same devices and applications that allow burgeoning code monkey to create his own games can also be used to play illicit ROMs.”). *Cf.* Danny Cowan, *Tap-Fu Developer Claims 90% iPhone Piracy Rate*, GAMASUTRA (Oct. 26, 2009), http://www.gamasutra.com/view/news/25809/TapFu_Developer_Claims_90_iPhone_Piracy_Rate.php (“[Independent Developer] Smells Like Donkey attributes the platform’s high piracy rates to the ease in which iPhone users can ‘jailbreak’ their devices and run unofficial code. The developer claims that pirating an iPhone game is ‘MUCH easier than actually buying it on iTunes.’ Tap-Fu was pirated and made available as a cracked download less than 40 minutes after its initial App Store release.”).

⁷⁷ See *EFF Submission*, *supra* note 4, at 28.

In short, the following direct infringements of the rights of SCEA and of other developers and publishers of PlayStation video games will be committed using a circumvention tool created under the auspices of proposed exemption 3: 1) the reproduction of unauthorized copies of video games, which will violate copyright owners' rights under Section 106(1); 2) the creation of modified works of such games, which violates their derivative works rights under Section 106(2); and 3) both installing modified firmware on a PS3 console and playing back illegally-made copies of video games on the console, which are acts expressly prohibited by the PlayStation License and, as such, constitute infringements of that firmware.⁷⁸ These infringing acts are not excused by fair use or any other statutory exception.

Persons who circumvent and, in so doing, create or modify a tool and who then provide that tool to others knowing that the tool will be used to commit direct infringement are engaged in a practice that is highly likely to be contributory copyright infringement. Their activities will meet both elements of the violation: they will have constructive knowledge of the directly infringing activity and the tool that they provide will materially contribute to and facilitate the direct infringements.⁷⁹ The noninfringing uses of which such tools would be capable are, moreover, hardly likely to be "commercially significant" or "substantial," given the small number of homebrewers and researchers, as compared to those who would seek to obtain and play unauthorized copies of video games. Therefore, the *Sony Betamax* defense would not be available to such persons.⁸⁰

Depending on the facts, it is also not improbable that individuals who actively propagate tools they have designed could have liability for intentionally inducing direct copyright infringement. As suggested by the language quoted from websites in the preceding footnotes,⁸¹ it is not uncommon for such persons to distribute their circumvention tools on websites that are dedicated to facilitating the availability of unauthorized copies of video games, and to participate in discussions about how such tools could be used to play back such copies on video game consoles.⁸²

⁷⁸ See *PlayStation License*, *supra* note 16, at paras. 1 and 2 (System Software license is subject to all other terms and conditions of Agreement, including provisions that prohibit user from using either "unauthorized, illegal, counterfeit, or modified . . . software in connection with the System Software" or "any software to cause the System Software to accept or use unauthorized, illegal, or pirated software").

⁷⁹ See *A&M Records, Inc. v. Napster*, 239 F.3d 1004, 1019 (9th Cir. 2001).

⁸⁰ See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 422 (1984).

⁸¹ See *supra* notes 28, 69-72, 76.

⁸² See *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005); *Arista Records LLC v. Lime Grp. LLC*, 784 F. Supp. 2d 398 (S.D.N.Y. 2011) (evidence of purposeful conduct and intent to

For the foregoing reasons, it is highly probable that many of the activities that would occur under the aegis of proposed exemption 3 would not be noninfringing, as Section 1201(a)(1)(B) requires, and, therefore, EFF’s request for exemption 3 should not be granted.⁸³

3. The Limitations on the Exemption Sought by EFF Are Illusory and the Record Does Not Warrant Crafting an Exemption that Does Not Describe a “Class” of Works
 - a) The Purported Limitations on the Exemption Sought by EFF Are Illusory

Proposed exemption 3 would allow circumvention “undertaken for the purpose of enabling interoperability”⁸⁴ of “lawfully obtained applications” with “computer programs

induce infringement in connection with distribution and encouragement of use of peer-to-peer software program).

⁸³ Nor are the activities sought to be protected by proposed exemption 3 noninfringing on the basis that they fall within the ambit of Section 117, which allows the lawful owner of a copy of a computer program to copy or adapt the program if the new copy or adaptation “is created as an essential step in the utilization of the computer program in conjunction with a machine and . . . is used in no other manner.” That section is inapplicable for two reasons. First, copying a work to alter the firmware, for the purpose of playing homebrew games or installing other homebrew applications is not an “essential step” in utilizing the firmware as developed and licensed to end users. Second, only an owner of a lawful copy of a computer program is entitled to invoke Section 117. *See Vernor v. Autodesk, Inc.*, 621 F.3d 1102, 1107 (9th Cir. 2010), *cert. denied*, 132 S. Ct. 105 (2011). Under *Vernor*, which is the most recent and definitive iteration of when a software user is a licensee rather than an owner of a copy, a user is a licensee “where the copyright owner (1) specifies that the user is granted a license; (2) significantly restricts the user’s ability to transfer the software; and (3) imposes notable use restrictions.” *Id.* at 1111. Applying *Vernor* to the terms of the PlayStation License, it is clear that PS3 users are licensees, and not owners, of the firmware: the PlayStation License specifies that the user is granted a license; it significantly restricts the user’s ability to transfer the software by lease, rental or sublicense; and it imposes very substantial and notable use restrictions. *See PlayStation License, supra* note 16, at paras. 1-3. Accordingly, Section 117 is inapplicable to PS3 users and, therefore, it provides no basis for concluding that the uses within proposed exemption 3 would be noninfringing.

⁸⁴ It is unclear whether the purposes for which EFF is seeking the exemption actually constitute “interoperability,” as that term is commonly used. “Interoperability” has been used in contexts where the intention is to allow the use of new software with an existing interface or the use of existing software with a new interface. Neither of EFF’s proposed uses would seem to fall squarely within these categories. Instead, proposed exemption 3 would allow reverse engineering of the firmware (interface) for the purpose of creating a modified interface in order to use new software. More accurately, the purposes seem less about creating an environment for interoperable software than about running software on a video game console, as to which there is “no unqualified right.”

on the gaming console.”⁸⁵ Although those words have meaning on paper, they are divorced from the reality that any hack undertaken to create or play illegally-made copies of games uses the very same firmware modification that would be used to enable homebrew or research purposes. It is practically and technologically infeasible a) to design computer programs to execute only “lawfully obtained software applications” and b) to circumvent for the “purpose” of enabling such applications to be interoperable.

First, EFF has not shown how video game console firmware could execute only lawfully obtained software applications but not those unlawfully obtained. In this regard, the circumvention of SCEA’s TPMs led immediately to the manufacturing of circumvention tools that enabled the unauthorized copying of video games owned by SCEA and other publishers for the PlayStation platform. Indeed, illegal copies of PS3 firmware made using the hack of its TPMs began immediately after the keys were published, and illegal copies of games began appearing within hours.⁸⁶ The devastating threat to SCEA from this circumvention was widely recognized. As one commenter stated, “further developments may ensure that anyone with the relevant software tools and technical knowledge could produce applications that will run on any PS3. It would then effectively be an open system. And naturally, the floodgates that have prevented widespread piracy on the console for the last few years could be smashed to pieces.”⁸⁷

Moreover, to the extent that EFF asserts that in order to use a circumvention tool to play back an unauthorized copy of a game a user would need to install “a special software file,”⁸⁸ that “file” is trivial. In the case of the previous PS3 hack, the files used to enable infringing acts became available almost immediately after the PlayStation keys were posted on line, opening the door for users to download illegal copies of video game software. Moreover, all software hacks require an additional file or the taking of

⁸⁵ As a matter of drafting, it is unclear which “computer programs” are the subject of proposed exemption 3: a) computer programs installed by a manufacturer of a console on the console, or b) any computer program, including those developed independently, that would enable execution of lawfully obtained software applications. Presumably, EFF only intends that circumvention of the former be permitted – consistent with the purposes of Section 1201(a)(1)(B), to authorize certain circumvention of classes of works that copyright owners protect using TPMs – but EFF’s language, which appears to have been modeled on the Librarian’s smartphone and wireless telephone handset exemptions granted in 2010, is unclear.

⁸⁶ Jonah Falcon, *PS3 Software Piracy Begins as First Game is Played on an Unmodded PlayStation 3*, TMRZOO (Jan. 10, 2011), <http://www.tmrzoo.com/2011/19431> (“That didn’t take long, did it? The rootkey crack that was uncovered by Geohot and other modders has the door wide open for rampant PlayStation 3 piracy, and the first pirated game on an unmodded PS3 has been done . . . Geohot may have claimed he doesn’t condone software piracy, but pirates are singing his name in honor right now.”).

⁸⁷ Stuart, *supra* note 33.

⁸⁸ *EFF Submission*, *supra* note 4, at 30-31.

additional steps, such as loading the file or inserting a disc, before the infringing copy of the video game (or other program) can be loaded onto the device. The necessity of executing such a trivial additional step does not make the original hack non-infringing.⁸⁹

Second, SCEA now would have to undertake a substantial revision of the PS3 to allow for secure access to the resources necessary for playing back homebrew games and for research while preserving TPMs that would preclude the playback of unauthorized copies of video games and other uses that would violate the PlayStation License or otherwise be infringing. Section 1201(a)(1)(B) does not require or contemplate that copyright owners would need to undertake revisions of their copyrighted works or their TPMs to accommodate uses that the Librarian concludes should be immune from Section 1201(a)(1) liability.

Third, such efforts, even if possible, also would be expensive – likely prohibitively so – and, at a minimum, would increase the cost of PS3 consoles to consumers. Moreover, such efforts would be detrimental to the vast majority of users due to the trade-offs required to devote finite resources to the development of complicated new features. Finally, even if such firmware were substantially revised by SCEA and were made available, it would most likely be beyond the ability of any but sophisticated engineers, and certainly beyond the casual homebrew developer, to reverse-engineer the firmware to allow for interoperability along the lines requested by EFF.

For the foregoing reasons, it is not feasible or practical to accommodate the real world firmware to an exemption that is purportedly “narrowly tailored” to facilitate interoperability solely with “lawfully obtained software applications.”

b) Proposed Exemption 3 Does Not Specify a “Class” of Works for Which Circumvention Might Be Permitted

EFF requests an exemption that is not delimited by a class of works, such as computer programs, but, instead, by the purpose for which a user intends to circumvent those works. The statute plainly is focused on circumvention by users of a “copyrighted work which is in a particular class of works” and the legislative history expressly confirms that the classes to which the statute refers are to be defined by reference to the categories of copyrightable subject matter, and by sub-categories thereof.⁹⁰ This is made particularly clear by the House Manager’s Report, which provides that the “illustrative list of categories” in Section 102 is a “starting point,” using “computer programs,” as

⁸⁹ See *ESA Submission*, *supra* note 7, at 33.

⁹⁰ See *H.R. Rep. No. 105-551*, *supra* note 53, at 37, 38 (goal of proceeding is to assess whether TPMs “with respect to particular categories of copyrighted materials” diminish the ability of individuals to use works in ways that are otherwise lawful; “particular class of copyrighted works” should be a “focused subset of the broad categories of works of authorship” in Section 102).

distinct from “scientific journals,” as an example and, then, further distinguishing between two types of computer programs – PC-based business productivity applications and video games distributed in formats playable only on dedicated platforms.⁹¹ The House Manager’s Report cautions, moreover, that the boundaries of “particular classes” should not be drawn “too narrowly,” such as particular genres of motion pictures, and specifically states that “singling out specific types of works” by creating classes that are “too narrow” would be “inconsistent with the intent of this bill.”⁹²

Nothing on the face of the statute or in the legislative history appears to give the Librarian authority to craft exemptions pursuant to Section 1201(a)(1)(B) proceedings by reference to the uses for which the circumvention was undertaken, let alone the state of mind – *i.e.*, the purposes – of the person engaged in circumventing the TPMs that prevent access to a class of copyrighted works.

Until 2006, the Register agreed with the clear language of the statute and the legislative history to the effect that the Librarian could only establish exemptions for classes of copyrightable works.⁹³ That interpretation of the statute and the Librarian’s authority was correct.

In 2006, however, the Register departed from her prior decisions and concluded, based on the record before her, that classes may be defined with respect to the type of use or user, or even the user’s purpose.⁹⁴ The Register has followed that approach since then,

⁹¹ See *House Manager’s Report*, *supra* note 53, at 7 (cited in *Notice of Inquiry*, *supra* note 2, at 60,402).

⁹² *Id.*

⁹³ 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, at 13 (Oct. 27, 2003), available at <http://www.copyright.gov/1201/2003/index.html> [hereinafter *2003 Recommendation*] (“And it is not permissible to classify a work by reference to the type of user or use (*e.g.*, libraries, or scholarly research); *id.* at 61 (“[T]he purpose of this rulemaking is to determine whether there are ‘particular class[es] of works’ which should be exempted – not whether particular *uses* should be exempted.”); *id.* at 84 (“statutory language and the legislative history did not provide support for classification” on the basis of use or user). See also *2010 Recommendation*, *supra* note 6, at 14 (“legislative history appears to leave no other alternative than to interpret the statute as requiring a ‘class’ to be defined primarily, if not exclusively, by reference to attributes of the works themselves”), *id.* at 15 (rejecting “proposals to classify works by reference to the type of user or use”).

⁹⁴ See Recommendation of the Register of Copyrights in RM 2005-11, Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, at 10 (Nov. 17, 2006), available at <http://www.copyright.gov/1201/2006/index.html> [hereinafter *2006 Recommendation*] (“However, in the current proceeding the Register has concluded, based upon the record before her, that in appropriate circumstances a ‘class of works’ that is defined initially by reference to a Section 102 category of works or a subcategory thereof, may additionally be refined not only by reference to the medium on which the works are distributed or the access control measures applied to them, but also by reference to the particular type of use and/or user to which the exemption shall be applicable.”) (cited in *Notice of Inquiry*, *supra* note 2, at 60,402).

as with the 2010 Recommendation for smartphones and cellphone connections to wireless networks.

Leaving aside whether there is any statutory authority for the approach taken by the Register and the Librarian, granting exemptions based on purpose would, contrary to Congress' purpose in establishing the Section 1201(a)(1)(B) process, seem to have negative effects on copyright owners in both legal and practical terms. That approach introduces real-world uncertainty into the scope of the exemption. It increases the difficulty of copyright owners, such as SCEA, in policing circumvention of their TPMs and, ultimately, in proving that circumvention activities are unlawful because they are outside the scope of the Librarian's exemption.

Here, the attempt to limit proposed exemption 3 to an act that has, as its "purpose," enabling interoperability of lawfully obtained applications with PS3 firmware is problematic. Once a person circumvents the TPMs and has access to the firmware, subsequent modification of the software can be for any purpose, including to allow the creation and execution of unauthorized copies of video games on the console. One "purpose" cannot readily be differentiated from another. Proposed exemption 3 would go beyond what the statute requires or contemplates by burdening SCEA with having to litigate whether persons invoking the exemption as a defense in a Section 1201(a)(1) action circumvented for "the [i.e., exempted] purpose," as opposed to multiple purposes, only one of which was permissible.

Proposed exemption 3 is based on criteria – uses and purposes of circumvention – never envisioned or authorized by Congress.⁹⁵ Moreover, to the extent that the exemption that it proposes is for activities undertaken with "the purpose" of enabling interoperability, the exemption slices exceedingly fine. In this regard, and as the House Manager's Report underscores, EFF's proposed exemption is "inconsistent" with the intent of Congress.

C. SCEA's TPMs and the Prohibition on Circumvention Do Not Adversely Affect Significant Numbers of Noninfringing Users and Uses

The record does not reflect that SCEA's use of TPMs on PlayStation consoles is adversely affecting significant noninfringing uses.

⁹⁵ See *H.R. Rep. No. 105-551*, *supra* note 53, at 38 ("class of copyrighted works" should be a "subset of the broad categories of authorship"); *id.* at 37 (task is to determine whether access control measures "with respect to particular categories of copyrighted materials," diminish otherwise lawful uses).

1. The Evidence Is Scant that a Significant Quantity of Noninfringing Uses Are Impaired by Sony's TPMs

EFF has not demonstrated the extent to which numbers of users actually might want to circumvent SCEA's TPMs for the purportedly legitimate purposes of using PS3 consoles for research or to play back homebrew games or install other homebrew applications. From all indications, the number of such users is likely to be insignificant and isolated and is entirely anecdotal. EFF's citation to a handful of websites – some of which involved homebrew games developed under SCEA's OtherOS – hardly supports its assertion that there is a “large community of console jailbreakers” – other than for illegal copies of games – for the PS3, leaving aside whether there might be such communities for the Wii or Xbox platforms. Unlike smartphones, it simply is not the case that there are thousands of independently developed video games and there is no evidence comparable to the record that the Register considered in her 2010 Recommendation that the number of iPhones for which operating systems were circumvented by users was approximately 350,000.

Moreover, as noted in Section III.C.2 below, even if development of homebrew games for the PlayStation were a significant pursuit, such games can just as easily be developed on and for a PC platform or for the Adobe Flash Player and, therefore, SCEA's TPMs impose no meaningful burden on homebrewers. Accordingly, the record here is eminently distinguishable from the development of independent apps for smartphones, for which there is no ready substitute or alternative available.

In reviewing this factor, the Register has considered whether copyright owners' assertions that circumvention violates Section 1201(a)(1) or threats of enforcement adversely affect noninfringing uses. In this regard, EFF cites to SCEA's litigation against Mr. Hotz as evidence that the prohibition has had an adverse effect on noninfringing uses and that “Sony's known desire to litigate” means that all “researchers and homebrew developers” could potentially face similar litigation.⁹⁶

In point of fact, SCEA has sought to encourage and support homebrewers (without compromising security or the needs of licensed game developers), and its OtherOS system was specifically designed to allow for innovative uses of the platform. SCEA has always had a multi-tiered licensing program, which allows small and independent developers to develop directly for the PS3. These programs range from tool loan programs for smaller developers, university programs, and programs for large commercial developers that purchase multiple suites of PlayStation SDK tools.⁹⁷ SCEA also has actively encouraged and collaborated in uses of the PS3 for research, as with the

⁹⁶ *EFF Submission, supra* note 4, at 30.

⁹⁷ *See supra* Section II.B.1.

Folding@home and U.S. Air Force research projects and supports hobbyists through its Move.me program, a program that allows development on PCs for its Move device.

In short, SCEA's practices demonstrate that it supports persons who engage in the legitimate development and playback of homebrew games or other applications or researchers using PS3 consoles. Accordingly, EFF's characterization of SCEA as threatening to enforce its rights under Section 1201(a)(1) should play no role in the Register's determination.

2. That TPMs on the PS3 Might Make It Inconvenient to Use the Console for Research and Playback of Homebrew Games Is Insufficient to Grant the Requested Exemption

The Register has stated that when TPMs protecting a copyrighted work make it merely inconvenient to use that work for a particular purpose, and when alternatives to that work are available, there is likely to be insufficient factual support for the exemption.⁹⁸ This is because “there is no unqualified right to access works on any particular machine or device of the user's choosing,”⁹⁹ and “[m]ere inconvenience is not sufficient to support the designation of a class of works [because the] statute does not provide that this rulemaking is to enable the most convenient method of consuming [copyrighted works.]”¹⁰⁰

The Register has previously found uses analogous to those that proposed exemption 3 would sanction to be mere inconvenience when alternate operating systems¹⁰¹ or other alternatives¹⁰² exist, when the exemption is sought for the purposes of

⁹⁸ See *Notice of Inquiry*, *supra* note 2, at 60,400-01.

⁹⁹ See *2000 Recommendation*, *supra* note 94, at 64,563; see also Final Rule, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2005-11, 71 Fed. Reg. 68,472, 68,478 (Nov. 20, 2006) [hereinafter *2006 Final Rule*] (holding that a proposed exemption will not be recommended “simply because some uses are available”); Final Rule, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2002-4E, 68 Fed. Reg. 62,011, 62,017 (Oct. 28, 2003) [hereinafter *2003 Final Rule*] (holding that the inability to play the desired material “on a particular device or with a particular operating system is simply a matter of personal preference and inconvenience”).

¹⁰⁰ Final Rule, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2008-8, 75 Fed. Reg. 43,825, 43,835 (July 20, 2010) [hereinafter *2010 Final Rule*].

¹⁰¹ See Recommendation of the Register of Copyrights in RM 99-71, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 65 Fed. Reg. 64,556, 54,568-69 (Oct. 27, 2000) [hereinafter *2000 Recommendation*] (finding that circumvention of CSS and region coding for Linux users was a problem of “preference and inconvenience” because of the “reasonable availability of alternate operating systems (dual bootable) or dedicated players for televisions”); see also *2003 Recommendation*, *supra* note 93, at 145 (decision revisited) and *id.* at 123

making backup copies,¹⁰³ and when certain programs are tethered to certain devices.¹⁰⁴ As the Librarian stated in the context of a similar request to allow circumvention so that users could operate the applications of their choosing on a closed device, “[t]he proposal . . . is a matter of consumer preference or convenience that is unrelated to the types of uses to which Congress instructed the Librarian to pay particular attention, such as criticism, comment, news reporting, teaching, scholarship, and research as well as the availability for use of works for nonprofit archival, preservation and educational purposes.”¹⁰⁵

The uses for which EFF is seeking the exemption, including creating and running software for research and developing and playing back homebrew applications, including independently developed video games, can be performed at least as easily on a variety of platforms other than the PlayStation. Most obviously, personal computers with relevant specifications much higher than the PS3’s are available for most of these purposes. These may cost slightly more than the PS3 but, of course, they are readily programmable, general purpose devices.¹⁰⁶ Other alternatives include designing games for Adobe Flash Player, a versatile browser-based platform that would allow homebrewers to play their games on the browser built into the PS3.¹⁰⁷ Perhaps the most straightforward approach

(circumvention of regionally coded DVDs mere inconvenience where PCs and other devices could play the DVDs).

¹⁰² See *2003 Recommendation*, *supra* note 93, at 119 (finding that inability to copy ancillary works for criticism and comment, while inconvenient in some cases, did not warrant an exemption since acceptable alternatives existed).

¹⁰³ See *2003 Recommendation*, *supra* note 93, at 6 (finding that “to the extent that some commenters found it more convenient to travel with backups or keep backups of their works in multiple locations . . . the prevention of such uses appears to represent an inconvenience rather than an adverse effect on noninfringing uses”).

¹⁰⁴ *Id.* at 130 (finding in the context of ebooks tethered to specific devices that inability to shift to other device was mere inconvenience where the consumer had the choice to purchase the book in a specific electronic format); *id.* at 157 (technical measures that prevent access of CDs on certain playback devices is mere inconvenience); *2000 Recommendation*, *supra* note 101, at 72 (thwarting of desire to space shift works tethered to certain devices is mere inconvenience).

¹⁰⁵ See *2006 Final Rule*, *supra* note 99, at 68,478.

¹⁰⁶ A PlayStation console costs between \$249 and \$299, depending on the hard drive size. See *PlayStation 3 Systems*, PLAYSTATION, <http://us.playstation.com/ps3/systems/>. A careful review of the two affidavits from researchers submitted by EFF indicates that they wanted to use the PS3 console principally due to its support for Linux and because the console provided them with access to relatively inexpensive computing power. Moreover, one of the researchers indicated that he had been in the process of moving to other computer systems and that he now has access to ample funding. These, then, are matters of convenience, not necessity.

¹⁰⁷ Dan Chruscinski, *How to Play Flash Games on PS3 Internet*, EHOW, http://www.ehow.com/how_5840226_play-flash-games-ps3-internet.html; *20 Free Tutorials to*

would be to design games for the PC platform using the many free or inexpensive tools available, and to connect the PC to an HD television, which typically requires a cable available at any consumer electronics store (the same cable required to connect a PS3 to a TV).¹⁰⁸

Homebrewers who are developing games for the PS3 platform are not doing anything that is qualitatively different from developing games for the PC. Homebrewers do not utilize the PlayStation's proprietary development tools; that is principally due to the complexity and cost involved in creating games that take advantage of the PS3's unique capabilities. Rather, they develop games in a manner similar to PC game developers – for example, before OtherOS was compromised, homebrewers could develop games for Linux, as they could on a Linux PC system. The only differences between the PS3 console and a PC are the physical components involved and, as noted, PCs with relevant specifications comparable to or greater than a PS3 can be purchased relatively inexpensively.¹⁰⁹ Therefore, the functionality that EFF wants to make available to the PS3 homebrew community through this proceeding can be achieved through other, simpler methods. For this reason, SCEA's TPMs simply pose barriers of inconvenience, and not impediments to access unique copyrighted works, for the uses that EFF seeks to have the Librarian sanction.

3. The Desire to Develop and Run Homebrew Applications for Video Game Consoles Is Insufficient to Merit an Exemption

EFF argues that homebrew applications, such as file transfer protocol ("FTP") servers, usefully add desired functionality to the PS3.¹¹⁰ That argument is unpersuasive.

Create Your Own Flash Game, DEZINER FOLIO (Feb. 6, 2008),
<http://www.dezinerfolio.com/2008/02/06/20-free-tutorials-to-create-your-own-flash-game>.

¹⁰⁸ *Connect Your Laptop to a TV*, BESTBUY,
<http://www.bestbuy.com/site/Electronics+Promotions/Connect-Laptop-to-TV/pcmcat212600050003.c?id=pcmcat212600050003>; Matthew Burley, *How to Play PC Games on a TV*, EHOW, http://www.ehow.com/how_5691233_play-pc-games-tv.html.

¹⁰⁹ The PS3's core processor is comparable in computing power to PC processors available today. The PS3's specially designed RSX graphics processing unit ("GPU") is only accessible through the manufacturer's proprietary programming interface. As a result, homebrewers have never had access to the RSX GPU, even when OtherOS was installed on the PS3 console. To the extent that homebrewers want to develop applications for advanced graphics accelerators, they do not need to have access to the PS3 console, because there are alternatives available from a variety of manufacturers that are compatible with PCs.

¹¹⁰ *EFF Submission*, *supra* note 4, at 28.

First, to the extent that EFF would like users to be able to convert the PS3 console into an FTP server, it is obvious that doing so would serve only one function – assisting in the transfer of unauthorized copies of games between and among PCs and PS3s, without having to copy the video games to DVDs. This is made clear by the comments on the very website that EFF cites as the exemplar of homebrew applications.¹¹¹

Second, other popular homebrew applications such as multiMAN – which EFF touts as another “prime example” of useful applications for PS3 – are backup managers primarily used to decrypt and copy protected PS3 games so that they can be illegally distributed.¹¹² The Register has previously rejected similar applications for DVDs due to a lack of showing that making backup copies was a noninfringing use.¹¹³ Making backup copies of video game discs is not a fair use or otherwise subject to an exception from Section 106.

Third, FTP servers and other simple applications of that type can be developed for and run on any PC. Given the availability of other platforms as alternatives to the PS3 console, the mere desire to run those types of homebrew applications on the console does not warrant granting an exemption.

4. SCEA’s Authorization of Research and Independently Developed Video Game Applications for PS3 Consoles Cuts Against Granting the Requested Exemption

The Register has recognized that where a copyright owner authorizes certain uses, such authorization can serve as a substitute for circumvention and, in such cases, may

¹¹¹ E.g., Playgame38, Comment to *PS3 FTP Server Homebrew Application*, PS3HAX, <http://www.ps3hax.net/2010/09/ps3-ftp-server-homebrew-application-2/> (“Holy CRAP! . . . A lot of piracy could happen from this. I was able to look at all of my installed games . . . and they were unencrypted. . . . [T]he possibility to dump games and then “install” them via FTP. Just wow...”); Syn, Comment to *PS3 FTP Server Homebrew Application*, PS3HAX, <http://www.ps3hax.net/2010/09/ps3-ftp-server-homebrew-application-2/> (“Pure epicness with this, all PSN games are now free if people start sharing”); MeLLo, Comment to *PS3 FTP Server Homebrew Application*, PS3HAX, <http://www.ps3hax.net/2010/09/ps3-ftp-server-homebrew-application-2/> (“I was wondering, if i download a game to the ps3 and before installing, transfer the file to the pc using the ftp server, would be possible to install the game on another ps3?”); Internazionale, Comment to *PS3 FTP Server Homebrew Application*, PS3HAX, <http://www.ps3hax.net/2010/09/ps3-ftp-server-homebrew-application-2/> (“Well I think he wants to download a game which have been already decrypted by backup manager and to transfer it from his PC to the internal PS3. That’s not very legal...”).

¹¹² See Cyan, *multiMAN beginner’s guide*, GBATEMP (May 2, 2011), <http://gbatemp.net/topic/291170-multiman-beginners-guide/> (giving instructions on setting up multiMAN, creating copies of retail game discs to hard drive, copying to an external hard drive, and playing “backup” games).

¹¹³ *2006 Recommendation*, *supra* note 94, at 81-82; *2003 Final Rule*, *supra* note 99, at 62,015.

obviate the need to grant the exemption.¹¹⁴ In the case of SCEA, it has been open to granting authorizations for uses of the PlayStation for legitimate purposes, including both research and the independent development of games. SCEA's authorization process is efficient and, unlike with respect to the use of CSS-protected DVDs, does not require that users seek permission from multiple copyright owners.

a) SCEA Is Open to Authorizing Research Uses

When asked, SCEA has authorized user-developed research applications on the PlayStation platform. Most notably, for example, SCEA has maintained a relationship with Stanford University, one result of which is the long-running "Folding@home" Project. This uses the PS3 technology to band together computers and PS3s to create "one of the largest super computers in the world."¹¹⁵ More than 20,000 PS3s are actively involved in that project. SCEA has also worked with various researchers to assist in "porting" their distributed research software to the PS3, offering engineering support and modifications for these uses. SCEA has worked with various universities to provide – free of charge – versions of the PS3 development environment for educational purposes. SCEA has also supported the U.S. Air Force's use of PS3's to create a large super computer for tasks such as radar enhancement, pattern recognition, satellite imagery processing, and artificial intelligence research. SCEA's commitment to research projects is ongoing, and there are new projects under development that SCEA has authorized and agreed to support.

Notably, however, a number of researchers who have approached SCEA ultimately have decided that the PS3 was not an ideal platform for their research. The PS3 platform, although ideally suited to high-end gaming, is not as well suited to research projects. Due to the particular programming requirements and relatively small amount of processor memory, software must be written specifically for the PS3 and often requires a great deal of engineering to work efficiently.

b) SCEA Authorizes and Supports Independent Video Game Development

SCEA also supports small-scale commercial video game developers in their efforts to create games for the PS3. SCEA's licensed developer program is open to any game developer – no matter how small – with a good idea for a game and the technological knowhow to produce it. If the developer's idea is accepted by SCEA, the developer is allowed to license SCEA's development kit. Many small developers contract with a larger studio to obtain access to the development kit; others purchase

¹¹⁴ 2010 Recommendation, *supra* note 6, at 68.

¹¹⁵ See *supra* note 24.

access themselves. Once the developer has finished creating the game, SCEA performs quality assurance checks, including making sure the game does not have any security vulnerabilities, and decides whether to approve the game for download on the PlayStation Network. This process is not used solely by large development companies, and there are quite a few small studio developers who currently provide games for the PS3.¹¹⁶ Thus, at least with respect to SCEA, EFF is simply incorrect in asserting that the “formal approval process can be demanding and complicated” and that licensing of the development kit is routinely refused “if the developer is not an established game company.”¹¹⁷

SCEA also has an active program, which it calls the “Pub Fund,” to recruit small developers it believes could develop small commercial games. These publishers are provided with either development advances or a purchase commitment to provide them with sufficient funds to develop their games. In addition, as discussed above, SCEA offers the Move.me program, which allows small developers, hobbyists, or other enthusiasts the ability to develop Move applications on PCs.

IV. THE SECTION 1201(a)(1)(C) FACTORS ALL WEIGH AGAINST GRANTING AN EXEMPTION

Even if the Register finds that EFF has met its burden of making out a prima facie case for an exemption for TPMs used in the video game environment, the Register must also weigh the five factors set out in Section 1201(a)(1)(C) to determine if, on balance, the exemption is warranted. In considering these factors, the Register is instructed to consider both the positive effects of the TPMs as well as their access-inhibiting effects, and the extent to which they are necessary for and facilitate the development and distribution of copyrighted works, in this case both the firmware and the video game software that is played on the consoles.¹¹⁸

In this case, the factors separately and together argue strongly against granting the exemption. The value of SCEA’s TPMs for the video game environment and the harm that would result from granting the exemption greatly outweigh whatever might be the *de minimis* inhibiting effect of the TPM on research and homebrew users of the PS3 video game firmware.

¹¹⁶ See Greg Miller, *PlayStation Network’s Top-Selling Indie Games*, IGN (Dec. 13, 2011), <http://ps3.ign.com/articles/121/1214682p1.html> (listing top-selling Indie Games that are Third-Party Self-Published, published through SCEA, or published through Sony’s Pub Fund).

¹¹⁷ *EFF Submission*, *supra* note 4, at 24.

¹¹⁸ See *House Manager’s Report*, *supra* note 53, at 6.

A. The Availability for Use of Copyrighted Works

This factor requires the Register to assess what effect the prohibition on circumvention has on the availability for use of copyrighted works. Importantly, as noted above, the use of TPMs coupled with the statutory prohibition on circumvention can lead to the increased availability of copyrighted works, including by supporting distribution models that benefit the public generally.¹¹⁹ That is precisely the situation with respect to the TPM on SCEA's video game console firmware.

EFF argues that permitting circumvention of TPMs on video game consoles will increase the availability of firmware. For the reasons set out below, its submission is not persuasive in this respect.

1. Research Uses Are Unrelated to Making Copyrighted Works Available

EFF asserts that pre-existing software can be installed for research purposes; however, that use neither increases the availability of the video game console firmware nor stimulates new copyrighted works. The prohibition on circumvention for purposes of research has not been shown to have stifled research in any way, and certainly does not result in impairing the creation of new copyrighted works.

As an initial matter, the PS3 console is not intended to be a general-purpose computing platform and it is not necessarily well-suited for research applications. Moreover, EFF's affidavits relating to research applications for the PlayStation are stale, describing uses that originated five or more years ago. Although these researchers may have found the PlayStation to be the cheapest and most convenient building block to use at the time, those facts, standing alone, would not support granting the exemption. In addition, the computing world has rapidly advanced since the time of the research that those two individuals conducted. Today, it is relatively inexpensive to build a PC with relevant specifications comparable to those in a PS3, and the Linux operating system is, as it always has been, free. The inconvenience that these research teams allegedly faced, insofar as they may have had to use clusters of PCs rather than clusters of PS3s, is not a significant harm, and does not merit granting an exemption.

Moreover, SCEA has authorized research uses on the PS3, such as Folding@home, in certain circumstances. Finally, of course, neither the researcher-affiants nor the U.S. Air Force cited by the EFF needed to be able to circumvent the PS3's TPMs to use their consoles for research purposes.

¹¹⁹ *Notice of Inquiry*, *supra* note 2, at 60,401.

For these reasons, granting proposed exemption 3 would not result in enhancing the availability for use of the PS3 firmware.

2. Homebrew Applications, Including Video Games, Can Readily Be Developed and Used on a Multitude of Platforms

The prohibition on circumvention does not interfere with the ability of amateur developers to develop games and other applications. Personal computers are ubiquitous and provide users with all the development capabilities they would have had under OtherOS. With a purchased or home-built PC, development of video games is indistinguishable from homebrew development for the PS3. To the extent a PS3 console is cheaper than purchasing a PC, that is an example of inconvenience. Moreover, neither of the affidavits submitted by EFF relating to homebrew communities discussed the PS3.

In reality, most development of video games takes place on PCs, regardless of the console or platform for which the game is being developed. Thus, there is no current or forecast need to enable homebrewers to take games developed, and fully playable, on PCs and shift them to the PS3 platform. They can use PCs to develop games, distribute them and play them on televisions in a way that is quite comparable to what they were able to do using OtherOS on the PS3 console. Indeed, EFF itself concedes that the PS3 platform is not essential, acknowledging that it is “a preferred platform” for homebrewers.¹²⁰ Finally, homebrew game developers can develop games for a browser-embeddable platform, such as Adobe Flash, and play those games on the PS3 via the PS3’s built-in web browser.

3. Granting the Exemption Will Not Lead to Greater Availability of Copyrighted Works

EFF argues that circumvention will allow homebrew utilities – such as “backup” programs – and video games to be developed to run on the PS3 platform. EFF, however, has provided no support for concluding that the community of “homebrew” developers is anything but “small” or that granting the exemption would lead to increased homebrew activity.

That the homebrew community for PS3 is and is likely to continue to be small is not surprising. Even during the period when OtherOS was available for homebrew developers, only a very small quantity of homebrew games actually were developed. This was so even though SCEA provided a person who was tasked with working with the Linux homebrew community to provide support for novice developers. Still, the program was lightly utilized.

¹²⁰ *EFF Submission, supra* note 4, at 34.

In the face of this direct experience by SCEA with homebrew development on an open PS3 platform, EFF nonetheless describes the PS3 homebrew community as a “robust online community,” based on its citation to a handful of websites.¹²¹ Upon closer inspection, these sites show that the legitimate PS3 homebrew community is anything but that. Since the beginning of 2011, only a few dozen games have been released, mostly in pre-final “alpha” versions. Moreover, a significant portion of these are “ports” from other platforms, *i.e.*, video games that already exist for other systems such as the PC or Wii. Generally, homebrewers create these ports as a proof of concept that it can be done, and that they are talented enough to do so. The total number of active homebrew game developers over the past year appears to be ten or fewer,¹²² while the number of PS3 developers worldwide numbers in the thousands. EFF does not assert, and there is no proof, that it is SCEA’s TPMs, rather than the innate difficulty of programming in the PS3 environment, that account for the diminutive size of the PS3 homebrew community.

4. TPM on Video Game Consoles Is an Essential Part of an Environment and Business Model that Makes Widely Available a Variety of Copyrighted Video Games from Multiple Providers, Including SCEA

Effective TPM on video game consoles creates an environment essential to the development and widespread availability of creative video games. Video games are both complex and costly. Many of the most sophisticated ones rival Hollywood movies in development costs, with some rumored to cost in excess of \$100 million and many costing in the range of \$15 to \$45 million. Besides devising a game concept and programming the mechanics of the game itself, video games today involve voice and live acting or motion capture, sound design and mixing, and development of visual environments, including sophisticated lighting and textures, that mimic reality.

The existence of TPMs on the PS3 console encourages not only SCEA, as itself a significant video game publisher, but also other well-known video game publishers to develop and market high quality video games. SCEA and the others do so based on earning revenues from the sale of the video games, which is the only source of revenue for video game publishers not affiliated with a hardware manufacturer. As is the case for other copyright owners, TPMs ensure that publishers’ ability to recoup their investment and earn revenues from the exploitation of the copyrighted games will not be

¹²¹ *Id.* at 25.

¹²² See PS3-HACKS, <http://ps3.dashhacks.com/tag/ps3-homebrew> (last visited Feb. 10, 2012); JAILBREAK SCENE, <http://jailbreakscene.com>; PS3 Homebrew (last visited Feb. 10, 2012); PS3 HOMEBREW, <http://ps3homebrew.org/category/homebrew-2> (last visited Feb. 10, 2012).

meaningfully impaired by the proliferation of unauthorized copies of their games, including through commercial piracy.¹²³

The importance of maintaining TPMs to protect a robust and vital market in video game development and publishing is well illustrated by the example of the market for PC games. Historically, game producers (*i.e.*, those not affiliated with a particular console) had developed games for a variety of platforms, including various consoles and PCs. PC versions of games were typically distributed with some sort of copy protection or authentication mechanism to ensure that users had purchased a valid copy of the game. Over time, users learned how to crack the copy protection on PC games and unprotected versions of games were made available on so-called “warez” sites and, later, via services such as BitTorrent. Because PCs are open systems, and have no restrictions on the software they will run, there was effectively no way to ensure copy protection on PC games. As a result, game development specifically for play on PCs came close to disappearing, at least until the advent of massive multiplayer online games. Those, however, require use of a proprietary game server – a type of access control that limits game play only to authenticated, valid users.

Allowing circumvention of the TPM on PS3 firmware will lead to the proliferation of tools designed to assist others in their circumvention and infringing activities. Prior to the circumvention of the PS3’s TPMs by hackers, the extent to which illegal copies of PS3 games had proliferated had not been significant. The hacking of the PS3 firmware has led to a cornucopia of how-tos and applications being published that guide the novice user through “jailbreaking” a PS3.¹²⁴ Granting proposed exemption 3 will only accelerate this process, because circumvention will be claimed to be for legitimate purposes and, to the extent that it was not and SCEA could find the perpetrators, SCEA would be required to pursue them and litigate the question of their “purpose” in circumventing.

The financial effect of circumventing TPM on a game system is hard to assess with precision due to the difficulty in measuring lost sales. A 2008 study commissioned by SCEA to investigate the prevalence of circumvention on the PSP concluded that millions of PSP users had engaged in some sort of circumvention activity, resulting in tens of millions of dollars of lost revenue to SCEA. This loss in revenue affects the game

¹²³ See *ESA Submission, supra* note 7, at 30-31 (comparing video game console TPMs to those used on DVD players and explaining that these TPMs enable greater access to copyrighted works whose creators would otherwise not allow their content to appear on the PS3 for fear that their content will not remain secure or free from digital piracy).

¹²⁴ See *supra* note 39.

developers and publishers, whose incentives to develop and publish games for a platform that cannot ensure an adequate revenue stream are commensurately reduced.¹²⁵

Given the general lack of interest in homebrew game development on the PlayStation platform, from the OtherOS days to the present, it is clear that the gains in production of homebrew games that EFF argues will result from granting the exemption – which will be modest, if any – will not offset the diminution in commercial video game production that will follow from the proliferation of unauthorized copies of video games. Granting the requested exemption is, by any measure, likely to result in a net loss in the availability of copyrighted works.

B. The Availability for Use of Works for Nonprofit Archival, Preservation, and Educational Purposes

EFF does not assert that granting proposed exemption 3 is likely to affect the use of works for nonprofit archival, preservation, and educational purposes. Because this factor does not weigh in favor of granting the exemption, the general presumption against granting exemptions ought to mean that this factor should count against doing so with respect to exemption 3. The previously expressed view of the Register that this factor only works in one direction, such that it can either favor the granting of the exemption or come out as “neutral,”¹²⁶ is incorrect.

In enacting Section 1201(a)(1)(C), Congress tasked the Register and Librarian with determining whether the technological protection measures at issue adversely affected the ability of individual users to make lawful uses of the copyrighted works; the factors in Section 1201(a)(1)(C) were enacted into law to achieve that end. In order to carry out this directive effectively, the Register must weigh each statutory factor as either supporting an exemption because the prohibition adversely affects non-infringing use, or weighing against an exemption because the absence of any adverse effects means that the prohibition against circumvention, as codified, should apply. In this case, because the exemption will not favorably affect a laudable public purpose – the availability of works for nonprofit archival, preservation, and educational purposes – the Register must acknowledge that the uses that would otherwise be favored by an application of this factor in favor of granting proposed exemption 3 are not currently adversely affected by the prohibition. Therefore, this factor should weigh against granting proposed exemption 3.

¹²⁵ See Stuart, *supra* note 33 (stating that piracy on the Nintendo DS and PSP cost the industry \$41 billion from June 2004–January 2011 and caused dozens of third-party developers and publishers to abandon the platforms).

¹²⁶ See, e.g., *2010 Recommendation*, *supra* note 6, at 101.

C. The Impact That the Prohibition on the Circumvention of Technological Protection Measures Applied to Copyrighted Works Has on Criticism, Comment, News Reporting, Teaching, Scholarship, or Research.

The impact of granting proposed exemption 3 would not affect criticism, comment, news reporting, teaching, scholarship, or research. For this reason, the third statutory factor also should weigh against the granting of an exemption.

EFF argues that circumvention of video game consoles has led to “substantial developments in scholarship and research,” and that the proposed exemption would expand these activities.¹²⁷ EFF is incorrect, both in its assessment that past research and scholarship uses have been “substantial,” and in its assertion that such uses would be more than nominal during the next three years.

EFF has not demonstrated that the existence of PS3’s TPMs have had any impact at all on research or scholarship uses. The fact is that the PS3 is designed specifically to run high-performance games. It is not ideally suited for most research or scholarship uses, due principally to the complexity of adapting software for efficient use of the PS3 processor and the relatively small amount of memory. These design characteristics of the PS3 cannot be said to have had a negative impact on scholarship and research. As noted, Sony has collaborated with researchers and academics to make PS3s available for research purposes, and EFF’s two affidavits describing historical uses of the PS3 console are not probative of the potential scholarship or research uses over the next three years. If anything, the PS3 is becoming even less useful as a tool for research, as researchers have developed equally good or better building blocks for creating computing clusters.

EFF does not argue, and there is no showing, that authorizing circumvention for purposes of playback of homebrew games or other applications would advance criticism, comments, news reporting, scholarship, or research. Video games are created and played for entertainment, not any of these privileged purposes. Moreover, all of these purposes currently are furthered by the closed PS3 system, which can only exist and flourish with effective TPMs.

As the Librarian stated in the context of a request similar to that of EFF, Congress instructed the Librarian to pay “particular attention” to certain uses, “such as criticism, comment, news reporting, teaching, scholarship, and research as well as the availability for use of works for nonprofit archival, preservation and educational purposes.”¹²⁸ Where those uses would not be furthered by granting of the exemption, it should not be

¹²⁷ *EFF Submission, supra* note 4, at 35.

¹²⁸ *2006 Final Rule, supra* note 100, at 68,478.

granted. There is no demonstrable impact of the prohibition on circumvention of SCEA's TPMs on scholarship or research. Accordingly, this statutory factor, like the second, weighs against the granting of proposed exemption 3.

D. The Effect of Circumvention of Technological Protection Measures on the Market for or Value of Copyrighted Works

EFF focuses on whether the exemption would be likely to adversely affect the market for the firmware and operating system. That approach is mistaken because this factor requires that the Register look at the effect of the exemption on all of the works that are protected by a TPM in firmware or operating systems.¹²⁹ The TPMs used on the PS3 protect not only the console's firmware but over 1,000 copyrighted video games.

As described in Section II.D above, there is no speculation or absence of demonstrable facts as to the effect of circumvention activities on the market for and value of copyrighted video games. The websites identified by EFF, for example, make available tools developed by "homebrewers" that enable direct copyright infringement as well as violations of Section 1201(a) that would not fall within EFF's proposed exemptions. These include tools such as backup managers, which allow users to make infringing copies of copyrighted games and play them on previous versions of the PS3 firmware.¹³⁰ The proliferation of circumvention tools in 2010 resulted in the appearance of unauthorized copies of video games for the PS3 platform in significant numbers.

Circumvention tools are designed to allow users to replace the PS3 firmware with modified or downgraded versions, granting access to versions of firmware that allow circumvention of the TPM on video games.¹³¹ These tools do not increase the availability of copyrighted works; on the contrary, by promoting the unauthorized reproduction and distribution of copyrighted video games, they inflict significant damage on SCEA and other video game publishers, thereby discouraging innovation and development of new video games.

As discussed above, history teaches that circumvention of TPMs used in the video game environment will result inevitably in infringing copies not only of SCEA's own,

¹²⁹ See *2010 Recommendation*, *supra* note 6, at 102 (considered possibility that exemption for smartphone jailbreaking will lead to unlawful copying and distribution of copyrighted content protected by access controls, but discounted as speculation); *id.* at 150 (considered argument that proprietary applications and downloaded content could be compromised by jailbreaking exemption, but discounted based on absence of demonstrated examples and DRM used directly on third-party content).

¹³⁰ See, e.g., *Backup Managers*, PS3-HACKS, <http://ps3.dashhacks.com/tag/backup-managers> (last visited Feb. 10, 2012) (listing releases of PS3 backup managers).

¹³¹ See, e.g., *PS3 Downgrade*, PS3-HACKS, <http://ps3.dashhacks.com/tag/ps3-downgrade> (last visited 2/3/2012) (listing releases of PS3 firmware downgrade utilities).

commercially valuable video games but also those of other video game publishers. That infringement will diminish the value of those video games and adversely affect publishers' incentives to produce them. These facts, which are in this record, must be considered by the Register.¹³²

EFF argues that proposed exemption 3 is narrowly tailored to apply only to noninfringing uses and, therefore, that the Register should ignore the extent to which circumvention could indirectly facilitate infringement. As described above, the tailoring on paper of an exemption that would permit circumvention for the sole purposes of executing only lawfully obtained applications on a video game console provides protection that is largely illusory. There is no meaningful distinction between circumvention that would facilitate the interoperability of unlawfully obtained software, on the one hand, and lawfully obtained software, on the other. The hack that permits circumvention does both. Accordingly, the effort to narrowly tailor proposed exemption 3 will be ineffective to prevent unauthorized circumvention and should not be relied upon by the Register in considering whether to look favorably on recommending that proposed exemption 3 be granted.

E. Such Other Factors as the Librarian Considers Appropriate

In the case of SCEA and its famous PlayStation video game system, Section 1201(a)(1) and the TPMs used by SCEA operate in tandem to protect legitimate, long-recognized copyright interests. Console games require years of development and significant investments in artwork, voice work, sound effects, and game design. Due to the substantial resources involved, SCEA as well as other video game publishers require a secure distribution platform to enable them to make money on their investment and foster innovation in further video game development.

Although EFF attempts to glaze over the distinctions between the smartphone and video game environments, the differences should not be underestimated by the Register. Smartphone apps are inexpensive to develop and do not involve the level of expertise required to code a video game for the PlayStation. Apps are also inexpensive to purchase, perhaps decreasing the temptation of users to download unauthorized copies of authorized apps.¹³³

The environment in which video games are developed is more akin to that of motion picture production, involving the work product of an entire team of developers

¹³² Cf. *2010 Recommendation*, *supra* note 6, at 102 (concluding that there is no factual basis for speculation that an exemption would expose copyrighted content that is protected by access controls to unlawful copying and distribution).

¹³³ Even so, many sources exist to guide users through circumventing the operating system on their iPhones, downloading unauthorized apps, and running them.

and artists, who invest in video game productions with the hope and need to recoup their investments. The intellectual property rights at risk in this environment are substantial, and experience continues to show that technological protection measures are necessary to maintain its security from the proliferation of unauthorized copies.

SCEA itself owns copyrights to many of the video games that would be subject to unlawful copying, distribution, and use if circumvention were permitted by the Librarian. It also benefits from the availability of hundreds of other video games that others produce for the PlayStation. SCEA's interests are not to protect a monopoly over the PS3 console or to preclude interoperability with its system. They are in safeguarding its and other video game publishers' copyright rights. Indeed, until security concerns made it necessary to remove the feature, SCEA included OtherOS, as an open system, on the console.

SCEA has developed and maintained its TPMs not only to limit access to the firmware on the PS3 console for purposes of ensuring security and integrity of the platform, but also to protect its copyright interests in both the firmware and in video games.¹³⁴ Given that those interests strongly outweigh whatever minor benefits there may be from granting proposed exemption 3, the Register and the Librarian should decline to do so.

V. CONCLUSION

Each request for an exemption must stand on its own footing, with its proponent satisfying its burden, and with the Register and the Librarian concluding that the benefits of granting the exemption outweigh the prohibition on circumvention of the TPM. Moreover, with respect to video game software, given the differences among platforms, the record and analysis must demonstrate that the exemption is warranted with respect to each platform.

For all the above reasons, proposed exemption 3 should be rejected. Its proponent has failed to show current or prospective actual or potential harm from the use of TPMs on SCEA's video game consoles. EFF has not demonstrated, as a legal or factual matter, that the proposed uses that the proposed exemption would sanction are noninfringing. Ample technological alternatives are available to the PS3 for all of the uses cited by EFF.

¹³⁴ Cf. *2003 Recommendation*, *supra* note 93, at 138, 141 (cited favorably in *2006 Recommendation*, *supra* note 94, at 71-72) (“DRM policies serve a legitimate purpose for limiting access to certain devices in order to protect the copyright owners from digital redistribution of works”; “effect of circumvention . . . would be likely to decrease the digital offerings for these classes of works, reduce the options for users, and decrease the value of these works for copyright owners”).

In addition, SCEA encourages and supports both research and independent development activities using the PlayStation platform. Finally, with respect to the PlayStation platform, the statutory factors that the Register is required to analyze, singly and together, weigh against granting proposed exemption 3 and the Register and the Librarian should reject that proposed exemption.

Respectfully submitted,

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Exhibit A

SYSTEM SOFTWARE LICENSE AGREEMENT (Version 1.4) FOR THE PlayStation®3 SYSTEM

December 10, 2009

PLEASE READ THIS SYSTEM SOFTWARE LICENSE AGREEMENT CAREFULLY TO UNDERSTAND YOUR RIGHTS AND OBLIGATIONS.

ACCESS TO OR USE OF THE SYSTEM SOFTWARE IN THE SONY COMPUTER ENTERTAINMENT INC. ("SCE")'S PlayStation®3 COMPUTER ENTERTAINMENT SYSTEM UNIT ("PS3™ system") IS EXPRESSLY CONDITIONED UPON ACCEPTANCE OF THE TERMS OF THIS AGREEMENT.

This Agreement is a contract with SCE. This Agreement applies to any system software or firmware included in the PS3™ system, and any patches, updates, upgrades, or new versions of the system software or firmware provided to or made available for your PS3™ system through any SCE service or online network, SCE website or PS3™ system game disc (software is collectively, "System Software").

1. LICENSE GRANT

Subject to the terms and conditions of this Agreement, all System Software is licensed to users solely for personal, non-commercial use on the PS3™ system in the country in which the PS3™ system was designed by SCE to operate. To the extent permitted by applicable law, your rights to use or access the current version of the System Software will cease upon installation of a newer version of the System Software onto your PS3™ system, whether such installation occurs through manual or automatic download by SCE through SCE's online network, or otherwise. SCE does not grant any license to System Software obtained by users in any manner other than through SCE's authorized distribution methods. Your use or access to open source software or freeware included with the System Software is subject to additional terms and conditions set forth in the instruction manual or documentation for the PS3™ system or at <http://www.scei.co.jp/ps3-license/index.html>. Such additional terms are hereby incorporated by reference. You do not have any ownership rights or interests in the System Software. All intellectual property rights therein belong to SCE and its licensors, and all use or access to such System Software shall be subject to the terms of this Agreement and all applicable copyright and intellectual property laws. Except as expressly granted in this Agreement, SCE and its licensors reserve all rights, interests and remedies.

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the System Software, including use of tools to bypass, disable, or circumvent any encryption, security, or authentication mechanism for the PS3™ system; (ii) violate any laws, regulations or statutes, or rights of SCE, its affiliated companies, or third parties in connection with your access to or use of the System Software, including the access, use, or distribution of any software or hardware that you know or should have known to be infringing or pirated; (iii) use any hardware or software to cause the System Software to accept or use unauthorized, illegal, or pirated software or hardware; (iv) obtain the System Software in any manner other than through SCE's authorized distribution methods; or (v) exploit the System Software in any manner other than to use it in your PS3™ system in accordance with the accompanying documentation and with authorized software or hardware, including use of the System Software to design, develop, update, or distribute unauthorized software or hardware for use in connection with the PS3™ system for any reason. Without limiting the scope of SCE's remedies, any violation of these restrictions will void the PS3™ system's warranty and affect your ability to obtain warranty services and repair services from SCE or its affiliated companies.

3. SERVICES AND UPDATES

From time to time, SCE may provide updates, upgrades or services to your PS3™ system to ensure it is functioning properly in accordance with SCE guidelines or provide you with new offerings. Some services may be provided automatically without notice when you are online, and others may be available to you through SCE's online network or authorized channels. Without limitation, services may include the provision of the latest update or download of new release that may include security patches, new technology or revised settings and features which may prevent access to unauthorized or pirated content, or use of unauthorized hardware or software in connection with the PS3™ system. Additionally, you may not be able to view your own content if it includes or displays content that is protected by authentication technology. Some services may change your current settings, cause a loss of data or content, or cause some loss of functionality. It is recommended that you regularly back up any data on the hard disk that is of a type that can be backed up. Other services or content may be made available to you by third parties who may require you to accept their terms and conditions and privacy policy ("Third Party Agreement"). SCE may refer to or provide you with links to websites that third parties independently operate or maintain ("Linked Sites"). SCE and its affiliated companies do not control or direct Linked Sites, nor do SCE and its affiliated companies monitor, approve, endorse, warrant or sponsor any information, conclusions, recommendations, advertisement, products, services or content described on Linked Sites. You acknowledge and agree that SCE and its affiliated companies have no liability to you for the information on the Linked Sites. Your reliance on any such information is at your own risk, and you assume all responsibilities and consequences resulting from your reliance. Please see your user's manual for information on controlling access to Linked Sites via PS3™ system's parental control. Notwithstanding any provision of any terms and conditions, in the event of any conflict between this Agreement and the Third Party Agreement, this Agreement shall control as between you and SCE.

4. COLLECTION OF INFORMATION/ AUTHENTICATION

SCE may retrieve information about your hardware and software for authentication, copy protection, account blocking, system monitoring/diagnostics, rules enforcement, game

management, marketing purposes, tracking user behavior and other purposes. The information collected is not your personally identifying information. SCE may use DNAS (Dynamic Network Authentication System), a proprietary system designed to authenticate game titles and the PS3™ system when you connect the PS3™ system to a network, to collect this information. Any unauthorized transfer, exhibition, export, import or transmission of programs and devices circumventing DNAS may be prohibited by law. SCE reserves the right to use any other authentication or security system, or method in connection with the PS3™ system. You can find more information on how SCE or its affiliated companies may use the collected information by referring to the privacy policy on the SCE company's website for your territory. The applicable privacy policy applies to your use of the PS3™ system.

5. INTERNET FEATURES

Use of any feature that requires access to internet connection, including the PS3™ system's internet browser ("Internet Features") is at your own risk. Internet Features may require wireless LAN access which may NOT be available at your location, free of charge, or free from interruption or disconnections. See your wireless LAN provider for details. Internet Features may NOT support all wireless LAN access connection points or Web sites. Browsing websites, or accessing any of the content may result in viruses, loss or corruption of data, or other problems. You must comply with all applicable laws and regulations. See other terms and conditions of use in the user's manuals. You are responsible for all fees in connection with access to or use of the internet.

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7. TERMINATION

If SCE determines that you have violated the terms of this Agreement, SCE may take all actions to protect its interests, including denial of any services such as warranty services and repair services provided for your PS3™ system and termination of your access to PlayStation®Network, implementation of upgrades or devices intended to discontinue

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The PS3™ system may contain technology that is subject to certain restrictions under the export control laws and regulations of the United States, including but not limited to the Export Administration Regulations, and the embargo and sanctions regimes of the U.S. Department of Treasury, Office of Foreign Asset Controls. As such, the PS3™ system may not be exported or re-exported to persons and entities prohibited by such laws and regulations.

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