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LIBRARY OF CONGRESS

U.S. Copyright Office

37 CFR Part 201

[Docket No. 2014-07]

Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies

AGENCY: U.S. Copyright Office, Library of Congress.

ACTION: Final rule.

SUMMARY: In this final rule, the Librarian of Congress adopts exemptions to the provision of the Digital Millennium Copyright Act (“DMCA”) that prohibits circumvention of technological measures that control access to copyrighted works, codified in section 1201(a)(1) of title 17 of the United States Code. As required under the statute, the Register of Copyrights, following a public proceeding, submitted a Recommendation concerning proposed exemptions to the Librarian of Congress. After careful consideration, the Librarian adopts final regulations based upon the Register’s Recommendation.

DATES: Effective October 28, 2015.

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SUPPLEMENTARY INFORMATION: The Librarian of Congress, pursuant to section 1201(a)(1) of title 17, United States Code, has determined in this sixth triennial rulemaking proceeding that the prohibition against circumvention of technological measures that effectively control access to copyrighted works shall not apply to persons who engage in noninfringing uses of certain classes of such works. This determination is based upon the Recommendation of the Register of Copyrights, which was transmitted to the Librarian on October 8, 2015.¹

The below discussion summarizes the rulemaking proceeding and Register’s Recommendation, announces the Librarian’s determination, and publishes the regulatory text specifying the exempted classes of works. A more complete discussion of the rulemaking process, the evidentiary record, and the Register’s analysis can be found in the Register’s Recommendation, which is posted at www.copyright.gov/1201/.

I. Background

A. Statutory Requirements

Congress enacted the DMCA in 1998 to implement certain provisions of the WIPO Copyright and WIPO Performances and Phonograms Treaties. Among other things, title I of the DMCA, which added a new chapter 12 to title 17 of the U.S. Code, prohibits circumvention of technological measures employed by or on behalf of copyright owners to protect access to their works. In enacting this aspect of the law, Congress

¹ Register of Copyrights, Section 1201 Rulemaking: Sixth Triennial Proceeding to Determine Exemptions to the Prohibition on Circumvention, Recommendation of the Register of Copyrights (Oct. 2015) (“Register’s Recommendation”).

observed that technological protection measures (“TPMs”) can “support new ways of disseminating copyrighted materials to users, and . . . safeguard the availability of legitimate uses of those materials by individuals.”²

Section 1201(a)(1) provides in pertinent part that “[n]o person shall circumvent a technological measure that effectively controls access to a work protected under [title 17].” Under the statute, to “circumvent a technological measure” means “to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner.”³ A technological measure that “effectively controls access to a work” is one that “in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work.”⁴

Section 1201(a)(1), however, also includes what Congress characterized as a “fail-safe” mechanism,⁵ which requires the Librarian of Congress, following a rulemaking proceeding, to publish any class of copyrighted works as to which the Librarian has determined that noninfringing uses by persons who are users of a copyrighted work are, or are likely to be, adversely affected by the prohibition against circumvention in the succeeding three-year period, thereby exempting that class from the prohibition for that period.⁶ The Librarian’s determination to grant an exemption is based upon the recommendation of the Register of Copyrights, who conducts the rulemaking

² 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 6 (Comm. Print 1998).

³ 17 U.S.C. 1201(a)(3)(A).

⁴ 17 U.S.C. 1201(a)(3)(B).

⁵ See H.R. REP. NO. 105-551, pt. 2, at 36 (1998).

⁶ See 17 U.S.C. 1201(a)(1).

proceeding.⁷ Congress directed the Register, in turn, to consult with the Assistant Secretary for Communications and Information of the Department of Commerce, who oversees the National Telecommunications and Information Administration (“NTIA”), in the course of formulating her recommendation.⁸

The primary responsibility of the Register and the Librarian in the rulemaking proceeding is to assess whether the implementation of access controls impairs the ability of individuals to make noninfringing uses of copyrighted works within the meaning of section 1201(a)(1). To do this, the Register develops a comprehensive administrative record using information submitted by interested members of the public, and makes recommendations to the Librarian concerning whether exemptions are warranted based on that record.

Under the statutory framework, the Librarian, and thus the Register, must consider “(i) the availability for use of copyrighted works; (ii) the availability for use of works for nonprofit archival, preservation, and educational purposes; (iii) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research; (iv) the effect of circumvention of technological measures on the market for or value of copyrighted works; and (v) such other factors as the Librarian considers appropriate.”⁹ As noted above, the Register must also consult with the Assistant Secretary who oversees NTIA, and report and comment on his views, in providing her Recommendation. Upon

⁷ 17 U.S.C. 1201(a)(1)(C).

⁸ *Id.*

⁹ *Id.*

receipt of the Recommendation, the Librarian is responsible for promulgating the final rule setting forth any exempted classes of works.

Significantly, exemptions adopted by rule under section 1201(a)(1) apply only to the conduct of circumventing a technological measure that controls access to a copyrighted work. Other parts of section 1201, by contrast, address the manufacture and provision of—or “trafficking” in—products and services designed for purposes of circumvention. Section 1201(a)(2) bars trafficking in products and services that are used to circumvent technological measures that control access to copyrighted works (for example, a password needed to open a media file),¹⁰ while section 1201(b) bars trafficking in products and services used to circumvent technological measures that protect the exclusive rights of the copyright owner in their works (for example, technology that prevents the work from being reproduced).¹¹ The Librarian of Congress has no authority to adopt exemptions for the anti-trafficking prohibitions contained in section 1201(a)(2) or (b).¹²

More broadly, activities conducted under the regulatory exemptions must still comply with other applicable laws, including non-copyright provisions. Thus, while an exemption may specifically reference other laws of particular concern, any activities conducted under an exemption must be otherwise lawful.

Also significant is the fact that the statute contains certain permanent exemptions to permit specified uses. These include: section 1201(d), which exempts certain activities

¹⁰ 17 U.S.C. 1201(a)(2).

¹¹ 17 U.S.C. 1201(b).

¹² *See* 17 U.S.C. 1201(a)(1)(E) (“Neither the exception under subparagraph (B) from the applicability of the prohibition contained in subparagraph (A), nor any determination made in a rulemaking conducted under subparagraph (C), may be used as a defense in any action to enforce any provision of this title other than this paragraph.”).

of nonprofit libraries, archives, and educational institutions; section 1201(e), which exempts “lawfully authorized investigative, protective, information security, or intelligence activity” of a state or the federal government; section 1201(f), which exempts certain “reverse engineering” activities to facilitate interoperability; section 1201(g), which exempts certain types of research into encryption technologies; section 1201(h), which exempts certain activities to prevent the “access of minors to material on the Internet”; section 1201(i), which exempts certain activities “solely for the purpose of preventing the collection or dissemination of personally identifying information”; and section 1201(j), which exempts certain acts of “security testing” of computers and computer systems.

B. The Unlocking Consumer Choice and Wireless Competition Act

In 2014, Congress enacted the Unlocking Consumer Choice and Wireless Competition Act (“Unlocking Act”), effective as of August 1, 2014.¹³ The Unlocking Act did three things. First, it replaced the exemption adopted in the 2012 triennial proceeding to enable certain wireless telephone handsets (*i.e.*, cellphones) to connect to wireless communication networks—a process commonly known as cellphone “unlocking”—with a broader version of the exemption adopted by the Librarian in 2010. Second, the legislation provided that the circumvention permitted under the reinstated 2010 exemption, as well as any future exemptions to permit wireless telephone handsets or other wireless devices to connect to wireless telecommunications networks, may be initiated by the owner of the handset or device, by another person at the direction of the

¹³ Pub. L. No. 113-144, 128 Stat. 1751 (2014). Subsequently, the Librarian adopted regulatory amendments to reflect the new legislation. *See* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Wireless Telephone Handsets, 79 FR 50552 (Aug. 25, 2014) (codified at 37 CFR 201.40(b)(3), (c)).

owner, or by a provider of commercial mobile radio or data services to enable such owner or a family member to connect to a wireless network when authorized by the network operator.¹⁴ This directive is permanent, and is now reflected in the relevant regulations.¹⁵ Third, the legislation directed the Librarian of Congress to consider as part of the current triennial proceeding whether to “extend” the cellphone unlocking exemption “to include any other category of wireless devices” based upon the recommendation of the Register, who in turn is to consult with the Assistant Secretary.¹⁶ Accordingly, as part of this rulemaking proceeding, the Copyright Office solicited and evaluated several proposed unlocking exemptions for devices other than cellphones, as addressed in Proposed Classes 12 through 15 below.

C. Rulemaking Standards

In adopting the DMCA, Congress imposed legal and evidentiary requirements for the section 1201 rulemaking proceeding, as discussed in greater detail in the Register’s Recommendation.¹⁷ Those who seek an exemption from the prohibition on circumvention bear the burden of establishing that the requirements for granting an exemption have been satisfied by a preponderance of the evidence. In addition, the basis for an exemption must be established *de novo* in each triennial proceeding. That said, however, where a proponent is seeking the readoption of an existing exemption, it may attempt to satisfy its burden by demonstrating that the conditions that led to the adoption of the prior exemption continue to exist today (or that new conditions exist to justify the exemption). Assuming the proponent succeeds in making such a demonstration, it is incumbent upon

¹⁴ Unlocking Act sec. 2(a), (c).

¹⁵ See 79 FR at 50554; see also 37 CFR 201.40(c).

¹⁶ Unlocking Act sec. 2(b).

¹⁷ See Register’s Recommendation at 13-18.

any opponent of that exemption to rebut such evidence by showing that the exemption is no longer justified.

To establish a case for an exemption, proponents must show at a minimum (1) that uses affected by the prohibition on circumvention are or are likely to be noninfringing; and (2) that as a result of a technological measure controlling access to a copyrighted work, the prohibition is causing, or in the next three years is likely to cause, an adverse impact on those uses. In addition, the Librarian must also examine the statutory factors listed in section 1201(a)(1): (1) the availability for use of copyrighted works; (2) the availability for use of works for nonprofit archival, preservation, and educational purposes; (3) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research; (4) the effect of circumvention of technological measures on the market for or value of copyrighted works; and (5) such other factors as the Librarian considers appropriate. In some cases, weighing these factors requires the consideration of the benefits that the technological measure brings with respect to the overall creation and dissemination of works in the marketplace, in addition to any negative impact.

Finally, when granting an exemption, section 1201(a)(1) specifies that the exemption adopted as part of this rulemaking must be defined based on “a particular class of works.”¹⁸ Among other things, the determination of the appropriate scope of a “class of works” recommended for exemption may also take into account the adverse effects an exemption may have on the market for or value of copyrighted works. Accordingly, “it

¹⁸ 17 U.S.C. 1201(a)(1)(B).

can be appropriate to refine a class by reference to the use or user in order to remedy the adverse effect of the prohibition and to limit the adverse consequences of an exemption.”¹⁹

II. History of the Sixth Triennial Proceeding

As the Register explains in the Recommendation, the administrative process employed in the rulemaking was revised for this triennial proceeding. In particular, the Copyright Office implemented certain procedural changes to make the process more accessible and understandable to the public, allow greater opportunity for participants to coordinate their efforts, encourage participants to submit effective factual and legal support for their positions, and reduce administrative burdens on both the participants and the Office. Among other things, the procedural changes included providing commenters with recommended template forms to use when submitting comments, and requiring commenters to submit separate comments for each proposed class.

On September 17, 2014, the Copyright Office published a Notice of Inquiry (“NOI”) in the Federal Register to initiate the sixth triennial rulemaking proceeding.²⁰ The NOI invited interested parties to submit petitions for proposed exemptions that set forth the essential elements of the exemption. The Office received forty-four petitions for proposed exemptions in response to the NOI.

Next, on December 12, 2014, the Office issued a Notice of Proposed Rulemaking (“NPRM”) that reviewed and grouped the proposed exemptions set forth in the

¹⁹ 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 19 (Nov. 17, 2006).

²⁰ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 79 FR 55687 (Sept. 17, 2014) (“NOI”).

petitions.²¹ In the NPRM, the Copyright Office concluded that three of the petitions sought exemptions that could not be granted as a matter of law, and declined to put those proposals forward for public comment.²² The Office grouped the remaining proposed exemptions into twenty-seven proposed classes of works. In some cases, overlapping proposals were merged into a single combined proposed class. In other cases, individual proposals that encompassed multiple proposed uses were subdivided into multiple classes to aid in the process of review. The Office then provided detailed guidance on the submission of comments, including a number of specific legal and factual areas of interest with respect to each proposed class.

The Office received nearly 40,000 comments in response to the NPRM, the vast majority of which consisted of relatively short statements of support or opposition without substantial legal argument or supporting evidence. A number of the longer submissions included multimedia evidence to illustrate points made in the written comments.

After receiving and studying the written comments, the Office held seven days of public hearings: in Los Angeles, at the UCLA School of Law, from May 19 to 21, 2015; and in Washington, D.C., at the Library of Congress, from May 26 to 29, 2015. The Office heard testimony from sixty-three witnesses at the hearings, and received additional multimedia evidence. After the hearings, the Office issued a number of follow-up

²¹ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 79 FR 73856, 73859 (Dec. 12, 2014) (“NPRM”).

²² NPRM, 79 FR at 73859. Each of these petitions sought to permit circumvention of any and all TPMs that constituted “digital rights management” with respect to unspecified types of copyrighted works for the purpose of engaging in unidentified personal and/or consumer uses. *Id.* The Office explained that these proposed exemptions ran afoul of the statutory requirement that “any exemptions adopted as part of this rulemaking must be defined based on ‘a *particular class* of works.’” *Id.* (quoting 17 U.S.C. 1201(a)(1)(B) (emphasis added)). The Office thus concluded that “the sweeping type of exemption proposed by these three petitions” could not be granted consistent with the standards of section 1201(a)(1). *Id.*

questions to participants, and received responses that have been made part of the administrative record.

As observed by various commenting parties, certain of the proposed exemptions presented issues potentially of concern to the Department of Transportation (“DOT”), the Environmental Protection Agency (“EPA”), and the Food and Drug Administration (“FDA”), and perhaps other regulatory agencies as well. The Copyright Office therefore sent letters to DOT, EPA and FDA informing them of the pendency of the rulemaking proceeding in case they wished to comment on the proposals. In response to these letters, the Office received responses from those agencies, and also from the California Air Resources Board (“California ARB”), which are also included in the record.

Throughout this triennial proceeding, as required under section 1201(a)(1), the Register has consulted with NTIA. In addition to providing procedural and substantive input throughout the rulemaking process, NTIA was represented along with Copyright Office staff at the public hearings held in Los Angeles and Washington, D.C. NTIA formally communicated its views on each of the proposed exemptions in recommendations delivered to the Register on September 18, 2015. NTIA’s recommendations can be viewed at copyright.gov/1201/2015/2015_NTIA_Letter.pdf.

III. Summary of Register’s Recommendation

A. Designated Classes

Based upon the record in this proceeding, the Register of Copyrights recommends that the Librarian determine that the classes of works described below be exempt from the prohibition against circumvention of technological measures set forth in section 1201(a)(1):

1. *Proposed Classes 1 to 7: Audiovisual Works – Educational and Derivative Uses*²³

Proponents of Proposed Classes 1 through 7 share the desire to circumvent technological protection measures employed on DVDs, Blu-ray discs and/or by various online streaming services to access motion pictures—a category under the Copyright Act that includes television programs and videos—in order to engage in noninfringing uses. Past rulemakings have granted exemptions relating to uses of motion picture excerpts for commentary or criticism by college and university faculty and staff and by kindergarten through twelfth-grade educators, as well as in noncommercial videos, documentary films, and nonfiction multimedia e-books offering film analysis. Past exemptions have been limited to circumvention of DVDs, online distribution services, and as a result of using screen-capture technology.

The petitions filed in this rulemaking sought to readopt and to some extent expand the previously granted exemptions, including to encompass Blu-ray discs (on the ground that a high-definition format is required for certain uses), to access audiovisual works that may not be motion pictures (such as video games), to permit the use of more than “short portions” of motion picture excerpts, and to extend to all “fair uses” rather than limiting the uses to criticism or comment. Some proponents sought to expand filmmaking uses to include narrative (or fictional) film, in addition to documentaries. Some proposals were focused on expanding the category of potential users of an exemption, such as to uses by museums, libraries and nonprofits, or by students and faculty participating in massive online open courses (“MOOCs”). The Copyright Office grouped these proposals into seven classes.

²³ The Register’s analysis and conclusions for these classes, including citations to the record and relevant legal authority, can be found in the Recommendation at 24-106.

Proposed Class 1: This proposed class would allow college and university faculty and students to circumvent access controls on lawfully made and acquired motion pictures and other audiovisual works for purposes of criticism and comment.

Class 1 was proposed by Professor Peter Decherney, the College Art Association, the International Communication Association, and the Society for Cinema and Media Studies (collectively, “Joint Educators”) to allow, for example, film studies professors to circumvent DVDs in order to use motion picture clips in class lectures. A class covering such uses was adopted in the 2010 and 2012 rulemakings. Joint Educators asked that the exemption be expanded to include the ability to circumvent Blu-ray discs, to remove the limitation to “short portions” of motion picture excerpts, and to broaden the class to cover all “audiovisual works” for all “educational purposes.”

Proposed Class 2: This proposed class would allow kindergarten through twelfth-grade educators and students to circumvent access controls on lawfully made and acquired motion pictures and other audiovisual works for educational purposes.

Petitions for Proposed Class 2 were submitted by Professor Renee Hobbs and the Library Copyright Alliance (“LCA”), to allow, for example, a high school teacher to circumvent DVDs of various adaptations of Shakespeare’s works in order to create a compilation of clips demonstrating the lasting influence of these works. Hobbs and LCA requested that the existing exemption for grades K-12 be expanded to include student uses rather than only uses by educators, to allow circumvention of Blu-ray discs, to remove the limitation to “short portions” of works, and to broaden the class to cover all “audiovisual works” for all “educational purposes.”

Proposed Class 3: This proposed class would allow students and faculty participating in massive online open courses (“MOOCs”) to circumvent access controls on lawfully made and acquired motion pictures and other audiovisual works for purposes of criticism and comment.

Joint Educators proposed Class 3, essentially seeking to expand the exemption for college and university faculty and students in Class 1 to include MOOCs, or online distance education courses offered on a broad scale. The exemption would, for example, allow a professor preparing an online lecture about the evolution of Chinese society to circumvent access controls in order to incorporate video clips documenting Chinese history and geography. Joint Educators' proposal included the ability to circumvent Blu-ray discs, to permit use of more than "short portions" of motion picture excerpts, and to allow use of all "audiovisual works" for all "educational purposes." Joint Educators contended that the prohibition on circumvention of TPMs is inhibiting the introduction of certain types of courses, such as film studies, on MOOC platforms.

Proposed Class 4: This proposed class would allow educators and learners in libraries, museums and nonprofit organizations to circumvent access controls on lawfully made and acquired motion pictures and other audiovisual works for educational purposes.

Professor Hobbs proposed Class 4 to allow, for example, educators in a community center adult education program to circumvent access controls in order to create video clips for purposes of discussing the portrayal of African-American women in a popular television show. The proposal encompassed "audiovisual works" for all "educational uses," as well as the ability to circumvent Blu-ray discs. Hobbs expressed concern that the prohibition on circumvention prevents participants in digital and media literacy programs in informal learning settings from engaging in projects similar to those conducted on college and university campuses.

Proposed Class 5: This proposed class would allow circumvention of access controls on lawfully made and acquired motion pictures used in connection with multimedia e-book authorship.

Class 5 was jointly proposed by Authors Alliance and Bobette Buster to allow, for example, a sound editor and e-book author to circumvent DVDs or Blu-ray discs to incorporate brief film excerpts in an e-book entitled *Listening to Movies*. Proponents requested renewal of the previously granted exemption, and expansion of that exemption to encompass any genre of multimedia e-book (as opposed to uses only in nonfiction multimedia e-books offering film analysis), to allow circumvention of Blu-ray discs, to remove the limitation to “short portions” of motion picture excerpts, and to broaden the class to cover all “audiovisual works.” In general, proponents argued that the prohibition on circumvention hinders e-book authors’ ability to criticize and comment on audiovisual works, some of which may only be accessible through DVD, Blu-ray or digitally transmitted sources.

Proposed Class 6: This proposed class would allow circumvention of access controls on lawfully made and acquired motion pictures for filmmaking purposes.

Class 6 was proposed by the International Documentary Association, Film Independent, Kartemquin Educational Films, Inc., and National Alliance for Media Arts and Culture (collectively, “Joint Filmmakers”) to allow, for example, filmmakers to circumvent access controls on material streamed online in order to incorporate excerpts of news footage into documentaries. The proposal sought readoption of the existing exemption for documentary filmmaking uses, and its expansion to include narrative (or fictional) films, to permit circumvention of Blu-ray discs, and to remove the limitation to short portions of works. Joint Filmmakers stressed that much material is only available on DVD, Blu-ray and digitally transmitted video, and that circumvention of Blu-ray discs is necessary

because, among other things, distribution standards require films to incorporate clips of high-definition quality.

Proposed Class 7: This proposed class would allow circumvention of access controls on lawfully made and acquired audiovisual works for the sole purpose of extracting clips for inclusion in noncommercial videos that do not infringe copyright.

Class 7 was proposed by Electronic Frontier Foundation (“EFF”) and the Organization for Transformative Works. Proponents sought to permit, for example, a fan of *James Bond* films to circumvent access controls on DVDs of these films in order to incorporate brief excerpts into a noncommercial video commenting on the portrayal of female characters in those films. The proposal sought renewal of the existing exemption, and expansion of that exemption to Blu-ray discs and all “noninfringing” or “fair” uses. Proponents argued that the existing exemption has resulted in the creation of a wide variety of new, noninfringing works, and expansion of that exemption to Blu-ray discs is necessary because, among other things, there is a significant amount of material that can only be found in that format.

For each exemption, proponents argued that the requested exemption would facilitate fair uses of the accessed works—for example, because of the educational nature of the uses, or because it would permit the creation of a new work of authorship providing commentary on the underlying work. Specifically, Joint Educators argued that teaching, criticism, and commentary are enumerated as favored uses under section 107 and therefore, that the proposed uses in Classes 1 and 3 for colleges, universities, and MOOCs were highly likely to be fair. For Class 2, Hobbs provided examples of educators using film clips as teaching tools in connection with media literacy, history, literature, and film theory, and of students using excerpts in connection with National History Day

projects, arguing that these uses were fair. Hobbs also contended that out-of-classroom educational programs should be able to make the same uses in Class 4. Proponents of Class 5 argued that uses of excerpts of motion picture clips in multimedia e-books intended for educational purposes are likely to be fair, citing examples of actual or prospective uses of motion picture excerpts in multimedia e-books for purposes of film criticism or analysis. For Class 6, Joint Filmmakers stated that the proposed uses in both documentary and narrative films are noninfringing fair uses that provide criticism and commentary, education about, and reporting on news and current events—activities that Congress has explicitly identified as fair uses. Finally, Class 7 proponents asserted that the purposes and character of noncommercial videos are highly transformative, and in support, submitted scholarly analysis of remix videos and evidence relating to fan video remixes that purportedly criticize and recontextualize the underlying narrative works.

For all of these audiovisual classes, the Office received no opposition to the renewal of the current exemptions; instead, opponents opposed expansion of those exemptions. The same parties opposed all seven classes—Joint Creators (representing the Motion Picture Association of America, the Entertainment Software Association (“ESA”) and the Recording Industry Association of America), DVD Copy Control Association, and the Advanced Access Content System Licensing Administrator (“AACSLA”). Opponents voiced parallel concerns across most of these audiovisual classes. In general, they contended that there are viable alternatives to circumvention that are adequate for many of the proposed uses, including clip licensing, screen-capture technology, streaming platforms such as TV Everywhere, disc-to-digital services, and digital rights libraries like UltraViolet. With respect to proposals to expand the exemptions to include

Blu-ray discs, AACCS LA and Joint Creators argued that the authorized circumvention of DVDs or online material provides a ready alternative to obtain material of sufficiently high quality for all the proposed uses. Opponents also urged that any expansion of the existing exemptions would likely harm the market for DVDs, Blu-ray discs, and other licensed uses.

Beyond these general points, opponents also made specific arguments concerning the individual proposed classes. In Class 1, opponents urged that alternatives to circumvention, including screen capture, were adequate for classroom uses outside film studies classes. In Class 2, opponents argued that the record lacks persuasive examples of K-12 student projects that require circumvention and that the record did not show a need to access material on Blu-ray discs. Opponents opposed granting any exemption for MOOCs in Class 3 arguing, among other things, that the uses are not likely to be noninfringing because the exemption would allow widespread distribution of works over the internet. With respect to museum, library or nonprofit educational programs in Class 4, opponents argued, among other things, that proponents had failed adequately to demonstrate specific adverse effects flowing from the prohibition on circumvention. In Class 5, opponents urged that no examples were presented to support expanding the exemption to fictional e-books or to circumvention of Blu-ray discs. In Class 6, opponents asserted that an exemption for fictional films would negatively impact the existing market for licensing of film clips. Finally, in Class 7, opponents argued that screen-capture software is an adequate alternative to proposed uses of Blu-ray material in noncommercial remix videos and that the existing regulatory language should be refined so as not to overlap with other classes addressing educational uses.

NTIA recommended renewing the current exemptions for educational and derivative uses, and expanding those exemptions in several respects. As a general matter, NTIA proposed that all of the exemptions should encompass “motion pictures and similar audiovisual works” on DVDs and Blu-ray discs, or obtained via online distribution services. NTIA rejected proposals to encompass all “noninfringing” or “fair uses,” instead recommending a more tailored approach. In Class 1, NTIA recommended an exemption for educational uses by college and university faculty and students, without limiting it to film studies and other courses requiring close analysis of works, although it did not explain why elimination of that distinction was warranted. In Class 2, NTIA recommended an exemption for K-12 educators, and for students in grades 6-12 engaging in video projects actively overseen by an instructor. In Class 3, NTIA recommended an exemption for MOOCs involving film and media analysis, but not for students enrolled in such MOOCs. In Class 4, NTIA recommended an exemption for instructors and students engaged in digital media and literacy programs in libraries, museums, and nonprofit organizations with an educational mission. In Classes 5 and 7, NTIA proposed renewing the exemptions for nonfiction or educational multimedia e-books offering film analysis, and for noncommercial videos, respectively, and expanding them to include Blu-ray discs, as with the other classes. Finally, in Class 6, NTIA proposed an exemption both for documentary films and for “[n]arrative films portraying real events, where the prior work is used for its biographical or historically significant nature.”

In general, the Register recommended granting exemptions for almost all of these classes; in each case, the Register concluded that the uses are likely to be fair, that alternatives to circumvention were inadequate, and that the statutory factors taken

together weighed in favor of the exemption. In each of Classes 1 through 7, the Register recommended retaining the requirement in the current exemptions that only “short portions” of works be used for purposes of “criticism or comment.” The Register explained that broader exemptions—covering longer portions for purposes of all “fair” or “noninfringing” uses—were unsupported by the record. The Register also explained that the exemptions should provide reasonable guidance to the public in terms of what uses are likely to be fair, while at the same time mitigating undue consequences for copyright owners. The Register also found the record to not support an exemption for “audiovisual works,” as opposed to the somewhat narrower category of “motion pictures,” because proponents had failed to demonstrate a need to circumvent non-motion-picture audiovisual works (such as video games) in any of the proposed classes.

With respect to Class 1 in particular, the Register recommended granting an exemption for circumvention of TPMs on DVDs, Blu-ray discs, and digital transmissions of motion pictures by college and university faculty and students engaged in film studies classes or other courses requiring close analysis of film and media excerpts. The Register recommended an exemption to facilitate use of screen-capture technology for all types of courses, to address the possibility of circumvention when using this technology. The Register reasoned that this class (and Class 2) should continue to distinguish between purposes requiring close analysis of film and media excerpts and more general educational uses, on the ground that screen-capture technology is an adequate substitute for the latter uses.

With respect to Class 2, the Register recommended granting an exemption limited to circumvention of DVDs and digital transmissions for educators in grades K-12,

including accredited general educational development (“GED”) programs, in film studies or other courses requiring close analysis of film and media excerpts. The Register found, however, that proponents submitted no examples where Blu-ray quality or Blu-ray-unique content was required for uses in K-12 classrooms. The Register also recommended an exemption to facilitate use of screen-capture technologies by educators in all types of courses. The Register found the evidentiary record of proposed uses by K-12 students to be insufficiently well developed to recommend an exemption for DVDs, digital transmissions, or Blu-ray discs because screen-capture software was likely to provide a ready alternative for those uses. Accordingly, the Register recommended a screen-capture exemption to facilitate uses by K-12 students.

With respect to Class 3, the Register recommended granting an exemption for circumvention of TPMs on DVDs, Blu-ray discs, and digital transmissions of motion pictures by faculty of MOOCs involving film studies or other courses requiring close analysis of film and media excerpts, under specified conditions borrowed from the TEACH Act, codified at 17 U.S.C. 110(2). The Register explained that key elements of the TEACH Act—such as the requirements that uses be limited to nonprofit educational institutions and transmissions be limited to enrolled students—should be incorporated into the exemption to ensure that the exemption is appropriately limited. The Register further found that the record did not support an exemption for student uses.

With respect to Class 4, the Register concluded that the record did not support an exemption permitting circumvention of DVDs, Blu-ray discs, or digital transmissions in connection with after-school or adult education media literacy programs (apart from GED programs). The Register found that the proposed uses in the record could be satisfied via

screen capture, and thus recommended an exemption to facilitate uses of screen-capture software.

With respect to Classes 5 to 7, the Register recommended granting an exemption for circumvention of TPMs on DVDs, Blu-ray discs, and digital transmissions of motion pictures for use in nonfiction multimedia e-books offering film analysis, in documentary filmmaking, and in noncommercial videos. The Register also recommended an exemption to facilitate use of screen-capture technologies for these uses. For the multimedia e-books exemption (Class 5), the Register recommended maintaining the limitation to e-books offering film analysis, finding that the record did not support an exemption for other uses. With respect to the filmmaking exemption (Class 6), the Register could not conclude, based on the record, that the use of motion picture clips in narrative films was, on balance, likely to be noninfringing, especially in light of the potential effects on existing licensing markets for motion picture excerpts. Finally, in considering the noncommercial video exemption (Class 7), the Register rejected proponents' suggestion to expand the exemption to encompass "primarily noncommercial" videos, as well as opponents' suggestion to narrow the exemption to certain specified categories of noncommercial videos, finding neither change to be necessary.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where circumvention is undertaken solely in order to make use of short portions of the motion pictures for the purpose of criticism or comment in the following instances:

- (i) For use in documentary filmmaking,**
 - (A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public**

as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

- (B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**
- (ii) For use in noncommercial videos (including videos produced for a paid commission if the commissioning entity's use is noncommercial),**
 - (A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or**
 - (B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**
- (iii) For use in nonfiction multimedia e-books offering film analysis,**
 - (A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or**
 - (B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**
- (iv) By college and university faculty and students, for educational purposes,**

- (A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or**
- (B) In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**
- (v) By faculty of massive open online courses (MOOCs) offered by accredited nonprofit educational institutions to officially enrolled students through online platforms (which platforms themselves may be operated for profit), for educational purposes, where the MOOC provider through the online platform limits transmissions to the extent technologically feasible to such officially enrolled students, institutes copyright policies and provides copyright informational materials to faculty, students and relevant staff members, and applies technological measures that reasonably prevent unauthorized further dissemination of a work in accessible form to others or retention of the work for longer than the course session by recipients of a transmission through the platform, as contemplated by 17 U.S.C. 110(2),**
- (A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or**
- (B) In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**

- (vi) **By kindergarten through twelfth-grade educators, including of accredited general educational development (GED) programs, for educational purposes,**
 - (A) **Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or**
 - (B) **In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;**
- (vii) **By kindergarten through twelfth-grade students, including those in accredited general educational development (GED) programs, for educational purposes, where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted; and**
- (viii) **By educators and participants in nonprofit digital and media literacy programs offered by libraries, museums and other nonprofit entities with an educational mission, in the course of face-to-face instructional activities for educational purposes, where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted.**

2. *Proposed Class 9: Literary Works Distributed Electronically – Assistive Technologies*²⁴

Proponents of Proposed Class 9 seek to allow circumvention of technological measures protecting literary works distributed in electronic form (including e-books, digital textbooks, and PDF articles) so that such works can be accessed by persons who

²⁴ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 127-37.

are blind, visually impaired, or print disabled. The Librarian, upon the recommendation of the Register, granted an exemption in 2012 for these purposes.

The American Foundation for the Blind, American Council for the Blind,, Samuelson-Glushko Technology Law & Policy Clinic at Colorado Law, and LCA filed petitions seeking to have the Librarian renew the existing exemption.

Based on these petitions, the Copyright Office proposed the following class:

Proposed Class 9: This proposed class would allow circumvention of access controls on lawfully made and acquired literary works distributed electronically for purposes of accessibility for persons who are print disabled. This exemption has been requested for literary works distributed electronically, including e-books, digital textbooks, and PDF articles.

Proponents argued that reproducing copies in accessible formats is a noninfringing use, and that, while improvements have been made to make literary works more accessible since the last triennial rulemaking, there are still a substantial number of works that cannot be accessed using accessibility technologies such as text-to-speech programs.

There was no opposition to renewing the 2012 exemption. Significantly, the Association of American Publishers, representing book publishers, filed supportive comments indicating that it had no objection to a renewal of the existing exemption, explaining that the market does not yet offer sufficient accessibility to literary works.

NTIA supported renewal of the current exemption, finding that the record regarding the state of accessibility of literary works is not substantially different than it was three years ago.

The Register recommended granting the exemption. According to the Register, the need to ensure that persons who are blind, visually impaired or print disabled are not

impeded from accessing books in electronic formats presents a quintessential case for an exemption. The Register determined that converting e-books into accessible formats is likely a noninfringing use both as a matter of fair use and under 17 U.S.C. 121, also known as the “Chafee Amendment,” which allows authorized entities to create accessible versions of works exclusively for use by persons who are blind, visually impaired, or print disabled. The Register also found that TPMs are likely to have an adverse effect on noninfringing activities, as many e-book titles and literary works in electronic format (such as electronic textbooks and PDF articles) are currently unavailable in accessible formats. The Register further concluded that all five statutory factors favored the exemption. Finally, like the existing exemption, the recommended exemption allows the intended beneficiaries of section 121 to benefit from the waiver on circumvention.

Accordingly, based on the Register’s recommendation, the Librarian adopts the following exemption:

Literary works, distributed electronically, that are protected by technological measures that either prevent the enabling of read-aloud functionality or interfere with screen readers or other applications or assistive technologies,

- (i) When a copy of such a work is lawfully obtained by a blind or other person with a disability, as such a person is defined in 17 U.S.C. 121; provided, however, that the rights owner is remunerated, as appropriate, for the price of the mainstream copy of the work as made available to the general public through customary channels, or**
- (ii) When such work is a nondramatic literary work, lawfully obtained and used by an authorized entity pursuant to 17 U.S.C. 121.**

3. *Proposed Classes 11 to 15: Computer Programs That Enable Devices to Connect to a Wireless Network That Offers Telecommunications and/or Information Services ("Unlocking")*²⁵

Proposed Classes 11 through 15 would allow circumvention of access controls on wireless devices such as cellphones and all-purpose tablet computers to allow them to connect to the network of a different mobile wireless carrier, a process commonly known as "unlocking." Wireless carriers typically lock wireless devices to their networks when they have subsidized the cost of a device at the time of purchase; carriers then recoup that subsidy through wireless service charges paid by the purchaser.

The Register has recommended, and the Librarian has adopted, exemptions permitting unlocking of cellphones in three prior rulemakings. Based on the evidentiary record in the last triennial proceeding, the 2012 version of the exemption was limited to cellphones obtained on or before January 26, 2013. Congress enacted the Unlocking Act to reinstate the cellphone unlocking exemption that was adopted in 2010, which lacked such a limitation. In the Unlocking Act, Congress also instructed the Librarian to review any future proposal for a cellphone unlocking exemption according to the usual process in this triennial rulemaking, as well as to consider in this rulemaking whether to extend the cellphone unlocking exemption to other categories of wireless devices. As noted above, the Unlocking Act also defines, on a permanent basis, categories of persons and entities that can take advantage of any unlocking exemption.

Consistent with Congress's directive in the Unlocking Act, the Copyright Office invited proposals to continue an unlocking exemption for wireless telephone handsets and/or to extend the exemption to other categories of wireless devices. The petitions

²⁵ The Register's analysis and conclusions for these classes, including citations to the record and relevant legal authority, can be found in the Recommendation at 138-71.

received generally asked for continuation of the current cellphone unlocking exemption, and expansion of that exemption to cover additional types of devices.

The Office grouped the petitions into five distinct classes based on the type of device at issue, as described below:

Proposed Class 11: This proposed class would allow the unlocking of wireless telephone handsets. “Wireless telephone handsets” includes all mobile telephones including feature phones, smart phones, and “phablets” that are used for two-way voice communication.

Class 11, covering cellphones, was proposed by Consumers Union, the Competitive Carriers Association (“CCA”), the Institute of Scrap Recycling Industries (“ISRI”), Pymatuning Communications (“Pymatuning”), and the Rural Wireless Association (“RWA”).

Proposed Class 12: This proposed class would allow the unlocking of all-purpose tablet computers. This class would encompass devices such as the Apple iPad, Microsoft Surface, Amazon Kindle Fire, and Samsung Galaxy Tab, but would exclude specialized devices such as dedicated e-book readers and dedicated handheld gaming devices.

Class 12, covering all-purpose tablets, was proposed by Consumers Union, CCA, ISRI, Pymatuning, and RWA. As reflected in the proposal, the petitions were limited to “all-purpose” tablet computers—that is, tablet computers that can run a wide variety of programs—as opposed to devices dedicated to the consumption of particular types of content such as e-book readers.

Proposed Class 13: This proposed class would allow the unlocking of mobile connectivity devices. “Mobile connectivity devices” are devices that allow users to connect to a mobile data network through either a direct connection or the creation of a local Wi-Fi network created by the device. The category includes mobile hotspots and removable wireless broadband modems.

Class 13, covering mobile connectivity devices, was proposed CCA and RWA.

Proposed Class 14: This proposed class would allow the unlocking of wearable wireless devices. “Wearable wireless devices” include all wireless devices that are designed to be worn on the body, including smart watches, fitness devices, and health monitoring devices.

Class 14, covering wearable wireless devices, was proposed by CCA and RWA.

Proposed Class 15: This proposed class would allow the unlocking of all wireless “consumer machines,” including smart meters, appliances, and precision-guided commercial equipment.

Class 15 was proposed by CCA, and encompassed a broad and diverse range of devices and equipment, including any “smart” device utilizing a data connection to connect to the internet or interact with other smart devices. CCA, however, failed to further define the kinds of “smart” devices the exemption would cover beyond those already encompassed by Classes 11 through 14, let alone the types of TPMs used by such devices, or the methods of circumvention. Indeed, it was not apparent from the record whether any such devices actually exist. For instance, while CCA suggested that smart power meters would be encompassed by the proposal, evidence at the public hearing (at which CCA did not participate) indicated that smart meters generally do *not* have mobile data (*i.e.*, 3G/4G) connections, rendering the concept of “unlocking” irrelevant to that type of device.

In general, proponents argued that unlocking was permitted under section 117 of the Copyright Act, which allows the owners of computer programs to make certain reproductions of or adaptations to those programs, and as a matter of fair use. They explained that the inability to unlock one’s wireless device leads to adverse effects by impeding consumers’ ability to choose their preferred wireless carriers, harming the resale value of used devices, and harming the environment by encouraging disposal rather than reuse of devices.

No party opposed Proposed Class 12 (all-purpose tablet computers) or Proposed Class 14 (wearable computing devices). Prepaid wireless carrier TracFone nominally filed comments in opposition to the cellphone unlocking exemption in Class 11, though at bottom it was not opposed to renewal of the exemption, so long as it was clear that the exemption did not permit illegitimate phone trafficking—a practice where subsidized prepaid cellphones are purchased, unlocked, and resold (often abroad) at a profit. The Alliance of Automobile Manufacturers (“Auto Alliance”) and General Motors LLC (“GM”) filed opposition comments in Class 13 solely to stress that any exemption should exclude “mobile” connectivity devices embedded in motor vehicles, and Class 13 proponents agreed that such a limitation would be appropriate. Auto Alliance opposed Class 15 on the ground that it is ill-defined and could inadvertently sweep in cars and trucks.

NTIA proposed adopting an exemption encompassing all used wireless devices, without enumerating the types of devices to which the exemption applies. At the same time, NTIA acknowledged that based on the record in the rulemaking, it would be appropriate to exclude one type of wireless device—vehicle-based hotspots—from the exemption.

The Register recommended adopting an unlocking exemption covering wireless telephone handsets (*i.e.*, cellphones), all-purpose tablet computers, mobile connectivity devices, and wearable wireless devices. According to the Register, the unlocking exemption is likely to facilitate noninfringing uses both under section 117 and as a matter of fair use. The Register further explained that, unlike the section 117 privilege, fair use is not limited to the owner of the computer program, and so there is no need to limit the

exemption to the owner of the device software. The Register also found that, as to the devices encompassed by Classes 11 to 14, proponents had provided sufficient evidence of adverse effects flowing from the inability to unlock a device due to a TPM; in contrast, proponents of Class 15, encompassing a broad and undefined range of “consumer machines” and “smart” devices, failed to make a showing of actual adverse effects. In addition, the Register concluded that three of the five statutory factors tended to favor the proponents, while the other two were neutral.

The recommended exemption is limited to “used” devices. A “used” device is defined as a device that has been lawfully acquired and previously activated on a wireless network. The recommended exemption permits charities and commercial enterprises (including bulk recyclers) to unlock used cellphones, while excluding illegitimate trafficking that seeks to profit from the subsidized phones sold by prepaid wireless carriers. Although some proponents called for elimination of the “used” requirement for cellphones and tablets—which in theory would permit unlocking of new, subsidized devices—the Register concluded that the record did not support extending the exemption in this respect as the evidence did not establish a practical ability to unlock subsidized devices that had never been connected to a carrier. Finally, the recommended exemption excludes devices embedded in motor vehicles from the exemption for mobile connectivity devices by including the condition that the devices be “portable.”

Accordingly, based on the Register’s recommendation, the Librarian adopts the following exemption:

- (i) **Computer programs that enable the following types of wireless devices to connect to a wireless telecommunications network, when circumvention is undertaken solely in order to connect to a wireless telecommunications network and such connection is**

authorized by the operator of such network, and the device is a used device:

- (A) Wireless telephone handsets (*i.e.*, cellphones);**
- (B) All-purpose tablet computers;**
- (C) Portable mobile connectivity devices, such as mobile hotspots, removable wireless broadband modems, and similar devices; and**
- (D) Wearable wireless devices designed to be worn on the body, such as smartwatches or fitness devices.**

(ii) A device is considered “used” for purposes of this exemption when it has previously been lawfully acquired and activated on the wireless telecommunications network of a wireless carrier.

4. *Proposed Classes 16 and 17: Jailbreaking – Smartphones and All-Purpose Mobile Computing Devices*²⁶

Proposed Classes 16 and 17 address an activity commonly known as “jailbreaking,” which is the process of gaining access to the operating system of a computing device, such as a smartphone or tablet, to install and execute software that could not otherwise be installed or run on that device, or to remove pre-installed software that could not otherwise be uninstalled. The Register has twice before recommended, and the Librarian has twice adopted, an exemption permitting jailbreaking of smartphones.

EFF filed a petition seeking a jailbreaking exemption for all “mobile computing devices,” including wireless telephone handsets that are capable of running a wide range of applications (*i.e.*, “smartphones”) and tablet computers (“tablets”). EFF explained that its requested exemption is not intended to extend to devices designed primarily for the consumption of a single type of media, such as dedicated e-book readers, or to desktop or laptop computers. Maneesh Pangasa filed a separate petition seeking an exemption for tablet computers. The Copyright Office divided these proposals into two proposed classes

²⁶ The Register’s analysis and conclusions for these classes, including citations to the record and relevant legal authority, can be found in the Recommendation at 172-92.

to ensure an adequate administrative record on which to make a recommendation. Based on these petitions, the Office included the following proposed exemptions in the NPRM:

Proposed Class 16: This proposed class would permit the jailbreaking of wireless telephone handsets to allow the devices to run lawfully acquired software that is otherwise prevented from running, or to remove unwanted preinstalled software from the device.

Proposed Class 17: This proposed class would permit the jailbreaking of all-purpose mobile computing devices to allow the devices to run lawfully acquired software that is otherwise prevented from running, or to remove unwanted preinstalled software from the device. The category “all-purpose mobile computing device” includes all-purpose non-phone devices (such as the Apple iPod touch) and all-purpose tablets (such as the Apple iPad or the Google Nexus). The category does not include specialized devices such as e-book readers or handheld gaming devices, or laptop or desktop computers.

Relying on case law and prior determinations of the Register, proponents argued that jailbreaking of smartphones and all-purpose mobile computing devices constitutes fair use of the device software. Proponents also pointed to a series of benefits that have resulted from the existing smartphone jailbreaking exemption, such as the ability to install otherwise unsupported operating system upgrades and the rapid growth in the market for legitimate, non-manufacturer-approved apps, and argued that similar benefits would result if the exemption included all-purpose mobile computing devices.

The Business Software Alliance (“BSA”) opposed both classes. In neither case, however, did BSA dispute the noninfringing nature of jailbreaking. Instead, BSA argued that the existence of alternatives to jailbreaking, such as “developer editions” of devices that do not need to be jailbroken, obviate the need for an exemption. In addition, with respect to the exemption for all-purpose mobile computing devices in Class 17, BSA disputed EFF’s effort to distinguish between all-purpose mobile computing devices on the one hand, and desktops and laptops on the other, arguing that the distinction is not

sufficiently clear. In response, EFF offered two further criteria to define these devices: first, that they be portable, in the sense that they are “designed to be carried or worn”; and second, that they “come equipped with an operating system that is primarily designed for mobile use,” such as Android, iOS, Blackberry OS or Windows Phone.

Commenters representing automobile manufacturers filed comments under Class 17 raising the concern that the class could arguably encompass computing systems that are embedded in “mobile” automobiles and other vehicles. EFF clarified, however, that Class 17 was not intended to include software running on vehicle electronics, but only portable devices designed to be carried or worn by a person.

NTIA favored a jailbreaking exemption for all “mobile computing devices,” a category which (contrary to EFF’s proposal) would appear to include devices that are designed primarily for the consumption of a single type of media, including dedicated e-book readers, which are separately addressed in Proposed Class 18 below. Although NTIA asserted that the works and TPMs at issue are strikingly similar and in many cases identical, it cited no evidence to support that claim with respect to dedicated e-book readers, handheld video game consoles, or other dedicated media consumption devices.

The Register recommended continuing the existing jailbreaking exemption for smartphones, and extending it to all-purpose mobile computing devices. As in previous rulemakings, the Register concluded that jailbreaking to facilitate interoperability is likely to constitute a noninfringing fair use, and that the prohibition on circumvention is having an adverse effect on this type of use. Further, the Register concluded that three of the statutory factors (availability for use of copyrighted works, the impact on criticism, comment, news reporting, teaching, scholarship, or research, and the effect of

circumvention of technological measures on the market for or value of the copyrighted works) favored an exemption, while the other two were not implicated by these classes.

The Register also concluded, based on the overall record, that the category of “all-purpose mobile computing devices” in Class 17 has been meaningfully defined, but that certain refinements were appropriate to address concerns regarding its scope. The recommended exemption thus incorporates EFF’s suggestion to specify that the devices be portable, that they be designed to run a wide variety of applications, and that they come equipped with an operating system primarily designed for mobile use. The recommended exemption thus excludes vehicle-embedded systems, devices designed primarily for consumption of a specific type of media (such as e-book readers and handheld gaming devices), and computers confined to desktop or laptop operating systems, such as Windows 8 or Mac OS. If a hybrid device can act either as a laptop or a tablet, the user will need to investigate what type of operating system it contains in order to determine whether the exemption applies.

Accordingly, based on the Register’s recommendation, the Librarian adopts the following exemption:

Computer programs that enable smartphones and portable all-purpose mobile computing devices to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smartphone or device, or to permit removal of software from the smartphone or device. For purposes of this exemption, a “portable all-purpose mobile computing device” is a device that is primarily designed to run a wide variety of programs rather than for consumption of a particular type of media content, is equipped with an operating system primarily designed for mobile use, and is intended to be carried or worn by an individual.

5. *Proposed Class 20: Jailbreaking – Smart TVs*²⁷

In addition to their traditional functionality, many modern televisions (“TVs”) have built-in software features that can stream content over the internet, interact with other devices in the home, or run applications. These internet-enabled TVs are often referred to as “Smart TVs.” Smart TV firmware is often protected by TPMs that prevent owners of those TVs from installing third-party software on them. The Software Freedom Conservancy (“SFC”) proposed an exemption to permit circumvention of access controls on firmware (*i.e.*, the operating system) of such smart TVs to enable installation of third-party software.

The Copyright Office included the following proposed exemption in the NPRM:

Proposed Class 20: This proposed class would permit the jailbreaking of computer-embedded televisions (“smart TVs”). Asserted noninfringing uses include accessing lawfully acquired media on external devices, installing user-supplied licensed applications, enabling the operating system to interoperate with local networks and external peripherals, and enabling interoperability with external devices, and improving the TV’s accessibility features (*e.g.*, for hearing-impaired viewers). The TPMs at issue include firmware encryption and administrative access controls that prevent access to the TV’s operating system.

According to SFC, access to the firmware would allow various noninfringing uses, including improving accessibility features (such as the size of closed captioning), enabling or expanding the TV’s compatibility with peripheral hardware and external storage devices, and making changes to display features such as the aspect ratio. SFC argued that the majority of smart TV firmware incorporates the manufacturer’s own proprietary applications along with free, libre and open source software (“FLOSS”) applications produced by third parties. SFC argued that, under the relevant FLOSS

²⁷ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 202-17.

licenses, smart TV owners are authorized to modify the FLOSS applications and to run them without restriction. SFC also argued that fair use permits reproduction and alteration of proprietary applications to the extent necessary to permit interoperability with lawfully acquired programs.

Proposed Class 20 was opposed by Joint Creators and LG Electronics U.S.A. (“LG”), a manufacturer of smart TVs. Opponents argued that an exemption would not facilitate noninfringing uses, and was unnecessary because a laptop can be connected to TV sets to view the output of any applications and because LG smart TVs already provide all of the features that SFC claims can be added only by jailbreaking. In addition, Joint Creators raised concerns that jailbreaking would allow the installation of infringing software as well as software such as “Popcorn Time,” an application that facilitates access to and viewing of pirated movies.

NTIA supported the proposed exemption, on the ground that it is not materially different than the exemptions that have been granted in the past for jailbreaking of smartphones.

The Register recommended granting the proposed exemption, explaining that circumvention of access controls on smart TV firmware is likely to enable noninfringing uses of that firmware. First, it appears to be undisputed that smart TV firmware incorporates FLOSS applications, and that modification of those applications would constitute a licensed, and therefore noninfringing, use. Second, with respect to non-FLOSS proprietary software included in the firmware, the Register concluded that modifications to that firmware to enable interoperability with third-party software are likely to constitute a fair use. The Register also found that the prohibition on

circumvention is adversely affecting legitimate noninfringing uses of smart TV firmware, and that the proposed alternatives to circumvention, such as connecting a laptop computer to the TV, are inadequate, because they would not allow installation of software on the smart TV to improve its functioning as a TV, such as facilitating more prominent subtitles. The Register also concluded that no evidence was submitted to illustrate opponents' claim that jailbreaking of smart TVs will make it easier to gain unauthorized access to copyrighted content, or that it would otherwise undermine smart TVs as a platform for the consumption of expressive works.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

Computer programs that enable smart televisions to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smart television.

6. *Proposed Class 21: Vehicle Software – Diagnosis, Repair or Modification*²⁸

Modern automobiles and agricultural vehicles and machinery are equipped with systems of interconnected computers that monitor and control a variety of vehicle functions. These computers are referred to as electronic control units, or “ECUs,” which are protected by TPMs. EFF requested an exemption to permit circumvention of TPMs protecting ECU computer programs for the purposes of diagnosis, repair and modification of vehicles. The Intellectual Property & Technology Law Clinic of the University of Southern California Gould School of Law (“IPTC USC”) proposed two similar exemptions for agricultural machinery specifically.

²⁸ The Register's analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 218-49.

Based on these petitions, the Office included the following proposed exemption in the NPRM:

Proposed Class 21: This proposed class would allow circumvention of TPMs protecting computer programs that control the functioning of a motorized land vehicle, including personal automobiles, commercial motor vehicles, and agricultural machinery, for purposes of lawful diagnosis and repair, or aftermarket personalization, modification, or other improvement. Under the exemption as proposed, circumvention would be allowed when undertaken by or on behalf of the lawful owner of the vehicle.

Proponents explained that circumvention of TPMs protecting copyrighted computer programs in ECUs may be necessary to make noninfringing uses of those programs to diagnose and repair automobiles and agricultural equipment, and to make modifications, such as enhancing a vehicle's suspension or installing a gear with a different radius. They assert that vehicle owners are entitled to use the computer programs in ECUs to diagnose, repair or modify vehicles as a matter of fair use, or under section 117. EFF argues that absent an exemption, vehicle owners must take their cars to authorized repair shops, or purchase expensive manufacturer-authorized tools, to diagnose and repair their vehicles. Similarly, IPTC USC explained that TPMs restricting access to computer programs that run agricultural vehicles and machinery place the livelihoods of farmers and other business owners at risk, because vehicle owners must sometimes wait significant periods of time before their disabled vehicles can be repaired by an authorized technician.

The proposed exemption was opposed by the Association of Equipment Manufacturers, Association of Global Automakers ("Global Automakers"), Auto Alliance, Eaton Corporation, GM, John Deere, and Motor & Equipment Manufacturers Association ("MEMA"). In general, opponents argued that an exemption would not

facilitate noninfringing uses, and was unnecessary in any event because vehicle owners have alternative options, such as manufacturer-authorized repair shops and tools. They also asserted that the proposal presented serious public health, safety and environmental concerns. For example, users might circumvent in order to avoid restrictions on vehicle emissions imposed by federal and state law.

In light of the commenters' observations, the Copyright Office notified DOT and EPA of the pendency of the rulemaking. DOT and EPA, as well as California ARB, responded with varying degrees of concern about the potential impact of an exemption. EPA opposed any exemption, while DOT and California ARB expressed significant reservations. The agencies' concerns were focused on potential adverse effects on safety and the environment. For example, EPA explained that vehicle modifications are often performed to increase engine power or boost fuel economy, but that these modifications increase vehicle emissions and thus violate the Clean Air Act.

In contrast to these other agencies, NTIA fully supported adoption of the proposed exemption. NTIA believed that an exemption was necessary to allow consumers to continue to engage in the longstanding practice of working on their own vehicles, and that the non-copyright concerns raised by opponents and other agencies could be addressed by those agencies in the exercise of their respective regulatory authorities. NTIA acknowledged, however, that a delay in implementation—as recommended by the Register and discussed below—might nonetheless be appropriate to permit other agencies to consider and prepare for the new rule, and urged that any such delay be as short as practicable.

Based on the record, the Register recommended granting an exemption. The Register concluded that reproducing and altering the computer programs on ECUs for purposes of facilitating diagnosis, repair and modification of vehicles may constitute a noninfringing activity as a matter of fair use and/or under the exception set forth in section 117 of the Copyright Act, which permits the owner of a copy of a computer program to make certain copies and adaptations of the program. The Register also concluded that owners of vehicles and agricultural machinery are adversely impacted as a result of TPMs that protect the copyrighted computer programs on the ECUs that control the functioning of their vehicles. The Register further found that while two of the statutory factors weighed in favor of the exemption (availability for use of copyrighted works and impact on criticism, comment, news reporting, teaching, scholarship or research), and two of the factors were neutral (availability for use for nonprofit archival, preservation and educational purposes and the effect on the market for or value of copyrighted works), the fifth factor—under which commenting parties and federal agencies raised serious safety and environmental concerns—tended to weigh against an exemption.

Overall, the Register concluded that while from a copyright perspective proponents had made the case for an exemption, based on the record, the exemption needed to be carefully tailored to address a number of concerns. Accordingly, the recommended exemption excludes computer programs in ECUs that are chiefly designed to operate vehicle entertainment and telematics systems due to insufficient evidence demonstrating a need to access such ECUs, and out of concern that such circumvention might enable unauthorized access to creative or proprietary content. The exemption also

excludes circumvention “on behalf of” vehicle owners, as a broader exception allowing third parties to engage in circumvention activities on behalf of others is in tension with the anti-trafficking provisions of section 1201(a)(2) and (b). Moreover, by passing the Unlocking Act—which amended section 1201 to allow unlocking of cellphones and other devices to be carried out by third parties “at the direction of” device owners—Congress indicated its view that extending the reach of an exemption to cover third-party actors requires a legislative amendment. The exemption also expressly excludes acts of circumvention that would violate any other law, including regulations promulgated by DOT or EPA. Finally, in light of the significant concerns raised by DOT and EPA, the recommended exemption will become operative twelve months from the effective date of the new regulation to provide these and other potentially interested agencies an opportunity to consider and prepare for the lifting of the DMCA prohibition. Acknowledging the views of the NTIA, the Register determined that a twelve-month delay was the shortest period that would reasonably permit other agencies to consider appropriate action.

Accordingly, based on the Register’s recommendation, the Librarian adopts the following exemption:

Computer programs that are contained in and control the functioning of a motorized land vehicle such as a personal automobile, commercial motor vehicle or mechanized agricultural vehicle, except for computer programs primarily designed for the control of telematics or entertainment systems for such vehicle, when circumvention is a necessary step undertaken by the authorized owner of the vehicle to allow the diagnosis, repair or lawful modification of a vehicle function; and where such circumvention does not constitute a violation of applicable law, including without limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency; and provided, however, that such circumvention is initiated no earlier

than 12 months after the effective date of this regulation.

7. *Proposed Classes to Permit Research of Software Flaws, Proposed Class 25: Software – Security Research; Proposed Class 22: Vehicle Software – Security and Safety Research; Proposed Class 27A: Medical Device Software – Security and Safety Research*²⁹

The Office received a number of petitions for proposed exemptions to permit circumvention of TPMs for purposes of conducting good-faith testing for and the identification, disclosure and correction of malfunctions, security flaws and vulnerabilities in computer programs. The proponents of these security exemptions observed as a general matter that computer programs are pervasive in modern machines and devices, including vehicles, home appliances and medical devices, and that independent security research is necessary to uncover flaws in those computer programs. The Copyright Office grouped the security-related petitions into three proposed classes. First, the Office received two submissions from academic researchers seeking an exemption to permit good-faith research into malfunctions, security flaws or vulnerabilities in computer programs installed on all types of systems and devices. The NPRM described the proposed class as follows:

Proposed Class 25: This proposed class would allow researchers to circumvent access controls in relation to computer programs, databases, and devices for purposes of good-faith testing, identifying, disclosing, and fixing of malfunctions, security flaws, or vulnerabilities.

Second, EFF filed a petition seeking an exemption to allow the circumvention of TPMs on computer programs that are embedded in motorized land vehicles for purposes of researching the security or safety of that vehicle. The NPRM described the proposed class as follows:

²⁹ The Register's analysis and conclusions for these classes, including citations to the record and relevant legal authority, can be found in the Recommendation at 250-320.

Proposed Class 22: This proposed class would allow circumvention of TPMs protecting computer programs that control the functioning of a motorized land vehicle for the purpose of researching the security or safety of such vehicles. Under the exemption as proposed, circumvention would be allowed when undertaken by or on behalf of the lawful owner of the vehicle.

Third, the Medical Device Research Coalition (“MDRC”), a group of patients and researchers, filed a petition seeking an exemption to allow the circumvention of TPMs on computer programs on implanted medical devices, such as pacemakers, implantable cardioverter defibrillators, insulin pumps, and continuous glucose monitors, and their corresponding personal monitoring systems. MDRC’s petition covered two proposed uses—allowing research into software flaws that adversely affect the safety, security and efficacy of medical devices, and allowing a patient to access the information generated by his or her own device. The Office originally categorized the petition into a single class.

The NPRM thus described the class as follows:

Proposed Class 27: This proposed class would allow circumvention of TPMs protecting computer programs in medical devices designed for attachment to or implantation in patients and in their corresponding monitoring devices, as well as the outputs generated through those programs. As proposed, the exemption would be limited to cases where circumvention is at the direction of a patient seeking access to information generated by his or her own device, or at the direction of those conducting research into the safety, security, and effectiveness of such devices. The proposal would cover devices such as pacemakers, implantable cardioverter defibrillators, insulin pumps, and continuous glucose monitors.

Based on the record as it developed in the course of the proceeding, the Register came to the conclusion that Proposed Class 27 should be divided into Proposed Class 27A, concerning security research on medical devices, and Proposed Class 27B, concerning access to patient data generated by medical devices. Class 27A is addressed with the other security research classes, while 27B is separately discussed below.

Proponents maintained that the security of software and the devices that execute software is of critical importance because security flaws pose potentially serious threats, including physical injury and death of individuals, property damage, and financial harm. Proponents argued that security research is noninfringing as a matter of fair use and, in the case of vehicle security research, under the exceptions set forth in section 117 as well. They further asserted that the permanent statutory exemptions to section 1201(a)(1)'s prohibition that are directed to reverse engineering (section 1201(f)), encryption research (section 1201(g)), and security testing (section 1201(j)) are inadequate for their purposes, because these provisions do not provide sufficient assurance that the activities in which the researchers seek to engage will be considered exempt.

The Office received comments in opposition to these proposed classes from a wide range of companies and organizations representing copyright owners. The general software security research exemption in Class 25 was opposed by AdvaMed, Auto Alliance, BSA, GM, Intellectual Property Owners Association (“IPO”), LifeScience Alley, Medical Device Innovation Safety and Security Consortium, and Software Information Industry Association. The vehicle software security research exemption in Class 22 was opposed by Global Automakers, Auto Alliance, GM, John Deere, and MEMA. The medical device software security exemption in Class 27A was opposed by AdvaMed, IPO, Jay Schulman, LifeScience Alley, and National Association of Manufacturers (“NAM”). In general, opponents argued that proponents had failed to establish that security research activities encompassed by the exemption are noninfringing, and that, in any event, an exemption was unnecessary both because of the permanent exemptions in sections 1201(f), 1201(g), and 1201(j), and because

manufacturers frequently authorize independent security research. Opponents also argued that any exemption for software security research should also include an express disclosure requirement, so that the software developer or product manufacturer has sufficient time to correct any flaw before its existence becomes more widely known and thus more susceptible to exploitation by malicious actors. Relatedly, opponents asserted that the proposal presented serious public health and safety concerns. For example, opponents claimed that information obtained by engaging in security research could be used by bad actors to hack into highly regulated machines and devices, including medical devices and vehicles.

In light of commenters' observations, the Copyright Office notified DOT, EPA and FDA of the pendency of the rulemaking. All three agencies responded and expressed significant reservations. The agencies voiced concerns about the potential effects on public health and safety; for example, DOT expressed concern that independent security researchers may not fully appreciate the potential ramifications of their acts of circumvention on automobile safety or the logistical limitations affecting potential remedial actions.

By contrast, NTIA fully supported adoption of a broad exemption for all computer programs, regardless of the device on which they are run, so that good-faith security researchers can engage in socially beneficial work. NTIA believed that the concerns of other agencies could adequately be addressed by stating explicitly in the exemption that it does not obviate compliance with other applicable laws. NTIA nonetheless acknowledged the possibility that a delay in implementation—as

recommended by the Register and discussed below—could be appropriate to permit other agencies to consider and prepare for the new rule.

The Register found that while the Class 25 proposal to allow research on computer programs generally was very broad (and potentially swallowed the proposals in Class 22 and Class 27A), the record focused primarily on consumer-facing products rather than large-scale industrial or government systems such as power or transit systems. The record also included specific evidence concerning motor vehicles, implanted medical devices such as pacemakers and glucose monitors, and electronic voting machines.

Based on this record, the Register recommended adopting an exemption to enable good-faith security research on computer programs within devices or machines primarily designed for use by individual consumers (including voting machines), motorized land vehicles, and implanted medical devices and their corresponding monitoring systems. At the same time, the Register concluded that the record did not support the open-ended exemption urged by Class 25 proponents, encompassing all computer programs on all systems and devices, including highly sensitive systems such as nuclear power plants and air traffic control systems, and that the exemption should be limited to the consumer-oriented uses that were the focus of proponents' submissions.

The Register concluded that good-faith security research into computer programs used to operate such devices and machines is likely a noninfringing fair use of those programs or, in the case of vehicle software, may be a noninfringing use under section 117. The Register also concluded that the permanent exemptions in sections 1201(f), 1201(g), and 1201(j) are inadequate to accommodate the proposed research activities due to various limitations and conditions contained in those provisions. Further, with respect

to computer programs used to operate the types of devices and machines encompassed by the recommended exemption, the Register additionally found that legitimate security research has been hindered by TPMs that limit access to those programs.

The Register also noted that different parts of the Administration appear to hold divergent views on issues surrounding security research and the wisdom of granting an exemption for this purpose, and that the exemption could cover any number of highly regulated products. Accordingly, to give other parts of the government sufficient opportunity to respond, the Register recommended that, as a general matter, the exemption should not go into effect until twelve months after the effective date of the new regulation (as noted above, the Register found that twelve months was the shortest period that would reasonably permit other agencies to respond). The Register, however, recommended immediate implementation of the exemption for voting machines, on the ground that there was no public safety issue or other proffered justification for delay of this aspect of the exemption.

The Register also noted the specific concern expressed by other agencies that acts of security research must not put members of the public at risk. The recommended exemption thus provides that security research must be conducted in a controlled setting designed to avoid harm to individuals or the public. In the case of medical devices specifically, the recommended exemption incorporates FDA's suggestion to exclude research on medical devices that are being used, or could be used, by patients.

As explained above, a significant issue with respect to the security exemptions involves the proper disclosure of security research findings, as the interests of the manufacturer and the public may both be affected by the nature and timing of disclosure

of software flaws. Indeed, Congress included disclosure to the system developer as one of the factors to be considered in determining a person's eligibility for the security testing exemption in section 1201(j). Although the Register expressed support for responsible disclosure of security flaws, she acknowledged the difficulty of attempting to define disclosure standards in the context of this rulemaking, as opinions seem sharply divided on this point. Accordingly, rather than incorporating an express disclosure rule, the recommended exemption draws upon what the Register perceives to be the basic intent of section 1201(j) by specifying that the information derived from the research activity be used primarily to promote the security or safety of the devices containing the computer programs on which the research is conducted, or of those who use those devices.

The Register noted that in the interest of adhering to Congress's basic purpose in section 1201(j), where appropriate, the recommended exemption tracks Congress's language rather than alternative formulations suggested by proponents, including by expressly excluding acts that violate any other law, such as the Computer Fraud and Abuse Act of 1986.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

- (i) **Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates solely for the purpose of good-faith security research and does not violate any applicable law, including without limitation the Computer Fraud and Abuse Act of 1986, as amended and codified in title 18, United States Code; and provided, however, that, except as to voting machines, such circumvention is initiated no earlier than 12 months after the effective date of this regulation, and the device or machine is one of the following:**

- (A) **A device or machine primarily designed for use by individual consumers (including voting machines);**
- (B) **A motorized land vehicle; or**
- (C) **A medical device designed for whole or partial implantation in patients or a corresponding personal monitoring system, that is not and will not be used by patients or for patient care.**

(ii) **For purposes of this exemption, “good-faith security research” means accessing a computer program solely for purposes of good-faith testing, investigation and/or correction of a security flaw or vulnerability, where such activity is carried out in a controlled environment designed to avoid any harm to individuals or the public, and where the information derived from the activity is used primarily to promote the security or safety of the class of devices or machines on which the computer program operates, or those who use such devices or machines, and is not used or maintained in a manner that facilitates copyright infringement.**

8. *Proposed Class 23: Abandoned Software – Video Games Requiring Server Communication*³⁰

Many modern video games—which may be played on a personal computer or a dedicated gaming console—require a network connection to a remote server operated by the game’s developer to enable core functionalities. Before some games can be played at all, including in single-player mode, the game must connect to an “authentication server” to verify that the game is a legitimate copy. Other games require a connection to a “matchmaking server” to enable users to play the game with other people over the internet in multiplayer mode. In the case of a game that relies on an authentication server, the game may be rendered entirely unplayable if the server connection is lost. When a matchmaking server is taken offline, the game may still be playable, though with online multiplayer play disabled.

³⁰ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 321-53.

EFF and Kendra Albert, a student at Harvard Law School, jointly filed a petition seeking an exemption to enable those who have lawfully acquired copies of video games to access and play those games when authentication or matchmaking servers have been permanently taken offline. As the record developed, it became evident that the proposal focused on two types of use: (1) people who wish to continue to play physical or downloaded copies of video games they have lawfully acquired (referred to in the Recommendation as “gamers”); and (2) those who seek to preserve individual video games and make them available for research and study (referred to in the Recommendation as “preservationists”).

The Copyright Office set forth the following proposed exemption in the NPRM:

Proposed Class 23: This proposed class would allow circumvention of TPMs on lawfully acquired video games consisting of communication with a developer-operated server for the purpose of either authentication or to enable multiplayer matchmaking, where developer support for those server communications has ended. This exception would not apply to video games whose audiovisual content is primarily stored on the developer’s server, such as massive multiplayer online role-playing games.

Proponents of Class 23 argued that uses to enable continued gameplay or multiplayer play constitute fair use, but that the prohibition on circumvention prevents owners from restoring access to games they have lawfully acquired. They also stressed that the inability to restore access has adverse effects on efforts to preserve video games and make them available for research and study.

The proposed class was opposed by ESA and Joint Creators. They argued that the proposed exemption was too broad, would not facilitate any noninfringing uses, and could adversely impact the market for video games. ESA expressed particular concern about the potential for piracy as a result of circumvention activities, explaining that if the

exemption were to permit circumvention of TPMs on video game consoles, those consoles could be used to play pirated video games. Opponents also urged that petitioners had failed to demonstrate cognizable adverse effects, arguing, for example, that the vast majority of games can continue to be played in single-player mode when server support has ended, and that there are other alternative means of playing games in multiplayer mode without a matchmaking server, including by using a local area network. ESA also argued that, at the point of sale, consumers receive ample notice that server support may be discontinued.

NTIA supported adoption of the proposed exemption for continued gameplay and for preservation uses, both for single-player and multiplayer play. NTIA argued that gamers should be permitted to restore access to a work that they had originally been allowed to use. In addition, according to NTIA, consumers receive inconsistent notice at best that developers may discontinue support for multiplayer use, and LAN-enabled multiplayer play is an inadequate substitute to play over the internet.

Based on a review of the evidentiary record, the Register recommended an exemption to allow continued gameplay and preservation activities when developer server support for a video game has ended, though one more circumscribed than that proposed. With respect to gamers, the Register concluded that the record supported granting an exemption for video games that require communication with an authentication server to allow gameplay when the requisite server is taken offline. The Register explained that the inability to circumvent the TPM would preclude all gameplay, a significant adverse effect, and that circumvention to restore access would qualify as a noninfringing fair use. At the same time, the Register determined that proponents had

failed to provide persuasive support for an exemption for online multiplayer play, in large part because it is not clear on the current record how the provision of circumvention tools to multiple users to facilitate an alternative matchmaking service could be accomplished without running afoul of the anti-trafficking provision in section 1201(a)(2). The Register also confirmed that the exemption for gamers should not extend to jailbreaking of console software because such jailbreaking is strongly associated with video game piracy.

With respect to preservation uses, looking to certain aspects of section 108 of the Copyright Act for guidance, the Register found that the record supported an exemption for libraries and archives, as well as for museums, to allow circumvention of TPMs so that video games can be preserved in playable condition when authentication servers are discontinued. In accordance with section 108, such institutions must be open to the public and/or to unaffiliated researchers, and the activities at issue must not be for commercial purposes. As with gamers generally, the recommended exemption for preservationists does not extend to circumvention to enable online multiplayer play, which is an activity that would extend beyond the walls of the preserving institution. But because the risk of piracy is much lower in a preservationist setting than with respect to gamers at large, the Register recommended that preservationists have the ability to circumvent TPMs controlling access to video game console software when necessary to maintain a console game in playable form.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

- (i) Video games in the form of computer programs embodied in physical or downloaded formats that have been lawfully acquired as complete games, when the copyright owner or its authorized representative has ceased to provide access to an external**

computer server necessary to facilitate an authentication process to enable local gameplay, solely for the purpose of:

(A) Permitting access to the video game to allow copying and modification of the computer program to restore access to the game for personal gameplay on a personal computer or video game console; or

(B) Permitting access to the video game to allow copying and modification of the computer program to restore access to the game on a personal computer or video game console when necessary to allow preservation of the game in a playable form by an eligible library, archives or museum, where such activities are carried out without any purpose of direct or indirect commercial advantage and the video game is not distributed or made available outside of the physical premises of the eligible library, archives or museum.

(ii) Computer programs used to operate video game consoles solely to the extent necessary for an eligible library, archives or museum to engage in the preservation activities described in paragraph (i)(B).

(iii) For purposes of the exemptions in paragraphs (i) and (ii), the following definitions shall apply:

(A) “Complete games” means video games that can be played by users without accessing or reproducing copyrightable content stored or previously stored on an external computer server.

(B) “Ceased to provide access” means that the copyright owner or its authorized representative has either issued an affirmative statement indicating that external server support for the video game has ended and such support is in fact no longer available or, alternatively, server support has been discontinued for a period of at least six months; provided, however, that server support has not since been restored.

(C) “Local gameplay” means gameplay conducted on a personal computer or video game console, or locally connected personal computers or consoles, and not through an online service or facility.

(D) A library, archives or museum is considered “eligible” when the collections of the library, archives or museum are open to the public and/or are routinely made available to

researchers who are not affiliated with the library, archives or museum.

9. *Proposed Class 26: Software – 3D Printers*³¹

3D printing—also known as “additive” manufacturing—is a technology that translates digital files into physical objects by adding successive layers of material. Some 3D printer manufacturers use TPMs to limit the types of material—or “feedstock”—that can be used in their 3D printers to manufacturer-approved feedstock.

Proponent Public Knowledge sought an exemption to permit the circumvention of access controls on computer programs on 3D printers with chip-based verification systems to enable the use of non-manufacturer-approved feedstock in such printers. The requested exemption would encompass both the modifications necessary to make a 3D printer accept alternative feedstock, and potentially further modifications to allow the use of feedstock consisting of material that is different from what a 3D printer has been designed to use (*e.g.*, metal instead of plastic).

The Copyright Office set forth the following proposed exemption in the NPRM:

Proposed Class 26: This proposed class would allow circumvention of TPMs on firmware or software in 3D printers to allow use of non-manufacturer-approved feedstock in the printer.

According to Public Knowledge, non-manufacturer-approved feedstock is often much less expensive than that provided by the manufacturer. In addition, use of feedstock composed of a different material may require modification of the printer’s operating system software, for example, to change preset variables such as the rate at which the heated feedstock is extruded to create the object or the temperature of the extrusion

³¹ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 356-77.

nozzle. According to Public Knowledge, the reproductions and adaptations necessary to engage in these uses are noninfringing under either the fair use doctrine or section 117. Public Knowledge asserts that absent an exemption, 3D printer owners will be forced to pay more for feedstock, and innovation in the 3D printing space will be adversely affected.

This proposed class was opposed by Stratasys, Inc. (“Stratasys”), a 3D printer manufacturer. Among other things, Stratasys contended that the proposed uses do not qualify as noninfringing under section 117 because 3D printer owners license rather than own the software that is installed on the 3D printer. Stratasys also argued that proponents had failed adequately to demonstrate cognizable adverse effects. Stratasys explained that 3D printers are used to produce medical implants, aerospace parts, and other goods that are subject to safety or regulatory guidelines, and expressed concern that an exemption could permit use of inferior materials in such applications. Notably, this concern was reinforced by FDA, which, in a letter to the Office, worried that an exemption for this class might create unintended public health and safety risks in relation to medical devices. Stratasys also expressed the concern that an exemption could be used to access proprietary design software, design files, or data.

NTIA favored granting the proposed exemption, on the ground that it would benefit consumers and fuel innovation by reducing costs of feedstock and by allowing the use of new types of feedstock. Although NTIA acknowledged concerns that 3D-printed parts might use inferior materials, it concluded that the exemption should not attempt to address concerns about quality control.

The Register recommended granting an exemption for 3D printers with chip-based verification systems, explaining that the proposed uses of operating system software to permit the use of alternative feedstock are likely noninfringing as a matter of fair use or under section 117, and that the prohibition on circumvention appears to be adversely affecting the proposed uses. At the same time, the Register observed that proponents' proposal—and the evidence offered in support—was focused largely on nonindustrial uses of printers rather than the sorts of uses that could present the types of safety and regulatory concerns highlighted by Stratasys and FDA. In light of the record, and to address the safety and regulatory issues, the recommended exemption excludes circumvention of TPMs on 3D printers that are used to print objects that are subject to legal or regulatory oversight. The recommended exemption also excludes circumvention for the purpose of accessing design software, design files or proprietary data.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

Computer programs that operate 3D printers that employ microchip-reliant technological measures to limit the use of feedstock, when circumvention is accomplished solely for the purpose of using alternative feedstock and not for the purpose of accessing design software, design files or proprietary data; provided, however, that the exemption shall not extend to any computer program on a 3D printer that produces goods or materials for use in commerce the physical production of which is subject to legal or regulatory oversight or a related certification process, or where the circumvention is otherwise unlawful.

10. *Proposed Class 27B: Networked Medical Devices – Patient Data*³²

Many modern implanted medical devices, such as pacemakers, implantable cardioverter defibrillators, insulin pumps and continuous glucose monitors, measure and record data about physiological developments taking place within the body, and communicate that data wirelessly to a corresponding personal monitoring system. Some personal monitoring systems, in turn, transmit data to a hospital or monitoring company, and ultimately to the patient's physician. Increasingly, these transmissions of data are protected by TPMs, including encryption schemes. MDRC requested an exemption that would allow a patient, or persons acting on behalf of the patient, to circumvent TPMs on these transmissions so that the patient is able to access the data generated by his or her own medical device and any corresponding personal monitoring system, without the need to visit a hospital or doctor's office.

As explained above, MDRC's petition also encompassed security research into medical device software. The Office accordingly set forth the following class in the NPRM:

Proposed Class 27: The proposed class would allow circumvention of TPMs protecting computer programs in medical devices designed for attachment to or implantation in patients and in their corresponding monitoring devices, as well as the outputs generated through those programs. As proposed, the exemption would be limited to cases where circumvention is at the direction of a patient seeking access to information generated by his or her own device, or at the direction of those conducting research into the safety, security, and effectiveness of such devices. The proposal would cover devices such as pacemakers, implantable cardioverter defibrillators, insulin pumps, and continuous glucose monitors.

³² The Register's analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 378-403.

As also noted above, the Register concluded that Proposed Class 27 should be divided into Proposed Class 27A, concerning security research, and Proposed Class 27B, concerning patient data, to allow the two types of uses to be separately analyzed. Class 27A is addressed with the other security research-related classes above. A discussion of Class 27B follows.

MDRC explained that an exemption to circumvent TPMs protecting medical device data would give patients real-time access to their own health data, allowing them, for example, to immediately detect major health risks or facilitate highly personalized treatment. As framed by MDRC, the exemption would provide access only to TPM-protected data outputs of medical devices, not to computer programs contained within medical devices or their corresponding monitoring systems. Although MDRC explained that such data is uncopyrightable to the extent it merely consists of physiological facts, such as a patient's blood glucose level, it expressed concern that the data outputs of some devices may constitute copyrightable compilations. MDRC asserted that the proposed use of such compilations would be a fair use, and urged the Office to adopt an exemption covering such circumstances. MDRC explained that the prohibition on circumvention adversely affects patients' ability to monitor their own health in real time, and that those adverse effects are likely to increase because FDA has encouraged manufacturers to impose TPMs on data outputs. Responding to concerns about the impact of such an exemption on the battery life of implanted devices, MDRC explained that the exemption could be limited to passive monitoring of data that is already being transmitted by the medical device or monitoring system.

The Office received comments in opposition to the proposed exemption from AdvaMed, IPO, LifeScience Alley, and NAM. AdvaMed agreed with MDRC that in certain circumstances, the selection and arrangement of data generated by a medical device might be copyrightable as a compilation. Opponents, however, provided little argument to counter MDRC's claim that patient access to such medical data constitutes a noninfringing fair use. Indeed, they conceded that patients have an "inherent right" to access their own medical data, but argued that this right is satisfied by obtaining data via authorized means, such as through a patient's health care provider. Opponents also relied heavily on the claim that the exemption would create health and safety concerns. For example, opponents contended that requesting data from implanted devices at an abnormally high rate could reduce the battery life of such devices. Opponents suggested that the Copyright Office allow an opportunity for FDA to provide input on the proposed exemption.

In light of opponents' comments, the Office advised FDA of the pendency of this proceeding. In a responsive letter to the Office, FDA expressed concern about facilitating access to data that includes patient health information or personally identifiable information, noting that the use of such data is subject to government regulation. FDA recommended that any exemption indicate that it was not intended to override the regulations of other federal agencies.

NTIA supported the proposed exemption, explaining among other things that the exemption would allow patients to see and react to data collected by their devices in real time. NTIA also concluded that the exemption is unlikely to adversely affect the

operation of the medical device itself, based on MDRC’s assertion that data would be passively intercepted as it is wirelessly transmitted from the device or monitoring system.

The Register recommended granting the proposed exemption. The Register observed that in many cases, data outputs generated by devices would likely be uncopyrightable, and that in such cases, section 1201(a)(1)—which is limited to works protected under title 17—would not apply. The Register noted, however, that some data outputs could qualify for protection as literary works if they reflect a sufficiently original selection and presentation of data, and that opponents themselves agreed that such outputs could be subject to copyright. Accordingly, the Register concluded that an exemption would be appropriate to enable patients’ access to their own medical data as embodied in protectable data compilations generated by implanted medical devices and corresponding personal monitoring systems. The Register concluded that accessing one’s own medical data is likely to be a fair and noninfringing use, and that TPMs on that data are likely to have an adverse impact on such access, especially as TPMs become more prevalent in response to FDA guidance. In addition, the Register concluded that the statutory factors favor an exemption.

In light of concerns about the effect of circumvention on the battery life of implanted medical devices, the Register recommended that the exemption reflect the approach suggested by MDRC, so it is limited to passively accessing data that is already being generated or transmitted by the device. Further, as suggested by FDA, the recommended exemption expressly provides that any actions taken under the exemption must be compliant with all applicable laws and regulations. The recommended exemption does not permit circumvention “at the direction of a patient,” as a broader exception

allowing third parties to engage in circumvention activities on behalf of others could implicate the anti-trafficking provisions of section 1201(a)(2) and (b). Unlike the recommended exemptions for security research and vehicle diagnosis, repair and modification, the Register recommended that the exemption for access to patient data be effective without delay because the passive monitoring of data transmissions did not appear to present any immediate safety or health concerns.

Accordingly, based on the Register's recommendation, the Librarian adopts the following exemption:

Literary works consisting of compilations of data generated by medical devices that are wholly or partially implanted in the body or by their corresponding personal monitoring systems, where such circumvention is undertaken by a patient for the sole purpose of lawfully accessing the data generated by his or her own device or monitoring system and does not constitute a violation of applicable law, including without limitation the Health Insurance Portability and Accountability Act of 1996, the Computer Fraud and Abuse Act of 1986 or regulations of the Food and Drug Administration, and is accomplished through the passive monitoring of wireless transmissions that are already being produced by such device or monitoring system.

B. Classes Considered but Not Recommended

Based upon the record in this proceeding, the Register of Copyrights recommends that the Librarian determine that the following classes of works shall not be exempt from the prohibition against circumvention of technological measures set forth in section 1201(a)(1):

1. *Proposed Classes 8 and 10: Audiovisual Works and Literary Works Distributed Electronically – Space-Shifting and Format-Shifting*³³

Proposed Classes 8 and 10 would have permitted circumvention of technological measures protecting motion pictures, e-books, and other audiovisual or literary works to allow users to view the materials on alternate devices for personal use or to create back-up copies. Broadly speaking, this activity is referred to as “space-shifting” and, in some cases, “format-shifting.”

Public Knowledge requested an exemption to engage broadly in noncommercial space-shifting of motion pictures distributed on DVDs, Blu-ray discs, and downloaded files. Alpheus Madsen requested an exemption to allow circumvention of access controls on DVDs specifically in order to play the DVDs on the Linux operating system. These overlapping exemptions were combined into the following class:

Proposed Class 8: This proposed class would allow circumvention of access controls on lawfully made and acquired audiovisual works for the purpose of noncommercial space-shifting or format-shifting. This exemption has been requested for audiovisual material made available on DVDs protected by CSS, Blu-ray discs protected by AACS, and TPM-protected online distribution services.

Christopher Meadows, in turn, proposed an exemption to engage in noncommercial space- or format-shifting of e-books, to allow consumers to view TPM-protected e-books on alternate viewing platforms and to create back-up copies. The proposed exemption was described as follows:

Proposed Class 10: This proposed class would allow circumvention of access controls on lawfully made and acquired literary works distributed electronically for the purpose of noncommercial space-shifting or format-shifting. This exemption has been requested for literary works distributed electronically [as] e-books.

³³ The Register’s analysis and conclusions for these classes, including citations to the record and relevant legal authority, can be found in the Recommendation at 107-26.

For both classes, proponents argued that space- and format-shifting for personal, noncommercial uses are fair uses. In the past four rulemakings, the Register has declined to recommend, and the Librarian has declined to adopt, an exemption for such uses because the proponents had failed to establish a legal or factual record sufficient to establish that the space- or format-shifting of audiovisual works, e-books, and other copyrighted works constitutes a noninfringing use. In this rulemaking, proponents argued that reconsideration of that position was warranted in light of a recent district court decision, *Fox Broadcasting Co. v. Dish Network LLC*,³⁴ as well as certain statements from legislative history of certain aspects of the Copyright Act, including a discussion of how the creation of a limited copyright in sound recordings might impact home audio recording.

Opponents urged that noncommercial space- and format-shifting are not established fair uses under the law. They further argued that, in any event, an exemption is unwarranted in light of the continued growth of licensed digital distribution services that provide meaningful alternatives to circumvention, including digital rights locker services such as UltraViolet and Disney Movies Anywhere and disc-to-digital services such as VUDU and Flixter that allow consumers to convert previously purchased DVDs or Blu-ray discs into high-quality digital files. According to opponents, an exemption that allowed broad-based space- or format-shifting would undermine not only the existing markets for DVDs and Blu-ray discs but also these emerging online distribution models.

NTIA, as it has in the past, supported what it termed a “narrowed version” of an exemption to allow circumvention when the work is not accompanied by an additional

³⁴ No. CV 12-4529 DMG (SHx), 2015 WL 1137593, at *30-31 (C.D. Cal. Jan. 20, 2015).

copy of the work in an alternate digital format. In NTIA's view, the exemption is an issue of consumer protection, although NTIA acknowledged the broader debate about the merits and legality of noncommercial space-shifting.

The Register recommended against the adoption of a proposed exemption, on the ground that the law of fair use, as it stands today, does not sanction broad-based space-shifting or format-shifting. The Register rejected proponents' attempt to rely on the *Dish Network* case, explaining that the uses at issue there were much more circumscribed than the uses proposed for this exemption. In particular, the service at issue in *Dish Network* included many safeguards to prevent unfettered use of the relevant content, including limitations on the length of time content would be available on the device to which a work is transferred. Accordingly, the Register concluded that the case was both factually and legally distinguishable. On the other hand, the recent case of *Fox News Network, LLC v. TVEyes Inc.*,³⁵ reaffirmed judicial reluctance to embrace a general space-shifting privilege.

At the same time, the Register recognized the consumer appeal of the proposals, and marketplace efforts to meet consumer demand for accessing movies and books in a wide variety of formats. According to the Register, the policy judgments surrounding the creation of a novel exception for space- or format-shifting of copyrighted works are complex and thus best left to Congress or the courts.

³⁵ No. 13 Civ. 5315 (AKH), 2015 WL 5025274 (S.D.N.Y. Aug. 25, 2015).

2. *Proposed Class 18: Jailbreaking – Dedicated E-Book Readers*³⁶

This class would have allowed circumvention of technological measures protecting dedicated e-book readers, such as Amazon’s Kindle Paperwhite, to run lawfully acquired third-party applications or software on such devices. Maneesh Pangasa filed a petition seeking this exemption, and the NPRM described the class as follows:

Proposed Class 18: This proposed class would permit the jailbreaking of dedicated e-book readers to allow those devices to run lawfully acquired software that is otherwise prevented from running.

Pangasa, however, failed to submit further written comments or evidentiary material in support of the petition and did not participate in the public hearings. The written comments that were received in connection with this class were abbreviated and did not offer specific factual information or legal argument in support of the exemption. At the public hearing, proponent Jay Freeman briefly mentioned that people have jailbroken e-book readers to install screen savers or achieve other functionality, but no further evidence was presented in relation to this class. There were no opposition comments filed.

Although, as part of its discussion of the jailbreaking exemptions for smartphones and all-purpose mobile computing devices, NTIA expressed support for a jailbreaking exemption for dedicated e-book readers, NTIA did not point to anything specific in the record to support the requested exemption.

In light of the insufficiency of factual or legal support for the proposed exemption, the Register declined to recommend it.

³⁶ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 193-94.

3. *Proposed Class 19: Jailbreaking – Video Game Consoles*³⁷

Maneesh Pangasa filed a petition proposing an exemption to permit jailbreaking of home video game consoles for an assortment of asserted noninfringing uses, including installing alternative operating systems. The Librarian rejected a similar exemption in 2012 because of substantial concerns about video game piracy. The Copyright Office set forth the following proposal in the NPRM:

Proposed Class 19: This proposed class would permit the jailbreaking of home video game consoles. Asserted noninfringing uses include installing alternative operating systems, running lawfully acquired applications, preventing the reporting of personal usage information to the manufacturer, and removing region locks. The requested exemption would apply both to older and currently marketed game consoles.

Pangasa failed to file supporting comments or participate in the public hearings, and the brief written comments filed by other parties provided scant support for the exemption. The limited amount of factual support offered in written comments—concerning academic research projects and “homebrew” video games—largely mirrored factual claims that were not persuasive in the 2012 proceeding. At the public hearing, the representative of commenting party iFixit provided some additional information regarding certain types of video game console repairs for which jailbreaking might be useful. At the same time, however, he acknowledged that the referenced repairs could be undertaken without circumvention.

Class 19 was opposed by ESA and Joint Creators. As in 2012, opponents provided substantial evidence that console jailbreaking is closely tied to video game piracy. In response to iFixit’s concerns about console repair, ESA observed that all major

³⁷ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 195-201.

console manufacturers offer repair services for consoles still under warranty at no charge, and for out-of-warranty consoles for prices ranging from \$99 to \$149. iFixit agreed with this assessment.

NTIA supported an exemption limited to repair of malfunctioning hardware for systems that are obsolete or no longer covered by manufacturer warranty, on the ground that to use an authorized repair service, the owner must send the console to the manufacturer and pay a “substantial” fee. At the same time, NTIA concluded that the record did not support a broader exemption, as the record is “significantly less robust and detailed than it was in the last rulemaking.”

The Register concluded that the record in this rulemaking did not provide a basis for departing from her 2012 recommendation that an exemption for video game console jailbreaking should be denied. According to the Register, the record was not materially different from that considered in 2012, and included evidence demonstrating that jailbreaking of video game consoles continues to be closely associated with video game piracy, thus undermining the value of console software as a secure distribution platform. The Register also concluded that the need to engage in console repair did not provide a basis for an exemption in light of the availability of authorized repair services and the ability of proponents and others to perform repairs without the need to circumvent.

4. *Proposed Class 24: Abandoned Software – Music Recording Software*³⁸

This proposed exemption would have allowed circumvention of a dongle-like access control that is allegedly no longer supported by the developer or copyright owner and protects a specific type of music recording software, Ensoniq PARIS. Three

³⁸ The Register’s analysis and conclusions for this class, including citations to the record and relevant legal authority, can be found in the Recommendation at 354-55.

individuals proposed this exemption, Richard Kelley, James McCloskey, and Michael Yanoska, and the Copyright Office set forth the following proposal in the NPRM:

Proposed Class 24: This proposed class would allow circumvention of access controls consisting of the PACE content protection system, which restricts access to the full functionality of lawfully acquired Ensoniq PARIS music recording software.

No evidence or argument to support this exemption was submitted after the initial petition phase of the proceeding. The class was opposed by Joint Creators, who raised concerns about the lack of supporting evidence.

In light of the incomplete record, NTIA and the Register declined to recommend granting the exemption.

C. Conclusion

Having considered the evidence in the record, the contentions of the commenting parties, and the statutory objectives, the Register of Copyrights has recommended that the Librarian of Congress publish certain classes of works, as designated above, so that the prohibition against circumvention of technological measures that effectively control access to copyrighted works shall not apply to persons who engage in noninfringing uses of those particular classes of works.

Dated: October 20, 2015

Maria A. Pallante,
Register of Copyrights and
Director of the U.S. Copyright Office

Determination of the Librarian of Congress

Having duly considered and accepted the Recommendation of the Register of Copyrights, which Recommendation is hereby incorporated by reference, the Librarian of Congress, pursuant to 17 U.S.C. 1201(a)(1)(C) and (D), hereby publishes as a new rule the classes of copyrighted works that shall for a three-year period be subject to the exemption provided in 17 U.S.C. 1201(a)(1)(B) from the prohibition against circumvention of technological measures that effectively control access to copyrighted works set forth in 17 U.S.C. 1201(a)(1)(A).

List of Subjects in 37 CFR Part 201

Copyright, Exemptions to prohibition against circumvention.

Final Regulations

For the reasons set forth in the preamble, 37 CFR part 201 is amended as follows:

PART 201—GENERAL PROVISIONS

1. The authority citation for part 201 continues to read as follows:

Authority: 17 U.S.C. 702

2. Section 201.40 is amended by revising paragraph (b) and removing paragraph (d).

The revision reads as follows:

§ 201.40 Exemption to prohibition against circumvention

* * * * *

(b) *Classes of copyrighted works.* Pursuant to the authority set forth in 17 U.S.C. 1201(a)(1)(C) and (D), and upon the recommendation of the Register of Copyrights, the Librarian has determined that the prohibition against circumvention of technological

measures that effectively control access to copyrighted works set forth in 17 U.S.C. 1201(a)(1)(A) shall not apply to persons who engage in noninfringing uses of the following classes of copyrighted works:

(1) Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where circumvention is undertaken solely in order to make use of short portions of the motion pictures for the purpose of criticism or comment in the following instances:

(i) For use in documentary filmmaking,

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(ii) For use in noncommercial videos (including videos produced for a paid commission if the commissioning entity's use is noncommercial),

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(iii) For use in nonfiction multimedia e-books offering film analysis,

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) Where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(iv) By college and university faculty and students, for educational purposes,

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access

Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(v) By faculty of massive open online courses (MOOCs) offered by accredited nonprofit educational institutions to officially enrolled students through online platforms (which platforms themselves may be operated for profit), for educational purposes, where the MOOC provider through the online platform limits transmissions to the extent technologically feasible to such officially enrolled students, institutes copyright policies and provides copyright informational materials to faculty, students and relevant staff members, and applies technological measures that reasonably prevent unauthorized further dissemination of a work in accessible form to others or retention of the work for longer than the course session by recipients of a transmission through the platform, as contemplated by 17 U.S.C. 110(2),

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Control System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture

software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(vi) By kindergarten through twelfth-grade educators, including of accredited general educational development (GED) programs, for educational purposes,

(A) Where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted, or

(B) In film studies or other courses requiring close analysis of film and media excerpts where the motion picture is lawfully made and acquired on a DVD protected by the Content Scramble System, or via a digital transmission protected by a technological measure, and where the person engaging in circumvention reasonably believes that screen-capture software or other non-circumventing alternatives are unable to produce the required level of high-quality content;

(vii) By kindergarten through twelfth-grade students, including those in accredited general educational development (GED) programs, for educational purposes, where the circumvention is undertaken using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted; and

(viii) By educators and participants in nonprofit digital and media literacy programs offered by libraries, museums and other nonprofit entities with an educational mission, in the course of face-to-face instructional activities for educational purposes, where the circumvention is undertaken using screen-capture technology that appears to be offered

to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted.

(2) Literary works, distributed electronically, that are protected by technological measures that either prevent the enabling of read-aloud functionality or interfere with screen readers or other applications or assistive technologies,

(i) When a copy of such a work is lawfully obtained by a blind or other person with a disability, as such a person is defined in 17 U.S.C. 121; provided, however, that the rights owner is remunerated, as appropriate, for the price of the mainstream copy of the work as made available to the general public through customary channels, or

(ii) When such work is a nondramatic literary work, lawfully obtained and used by an authorized entity pursuant to 17 U.S.C. 121.

(3)(i) Computer programs that enable the following types of wireless devices to connect to a wireless telecommunications network, when circumvention is undertaken solely in order to connect to a wireless telecommunications network and such connection is authorized by the operator of such network, and the device is a used device:

(A) Wireless telephone handsets (*i.e.*, cellphones);

(B) All-purpose tablet computers;

(C) Portable mobile connectivity devices, such as mobile hotspots, removable wireless broadband modems, and similar devices; and

(D) Wearable wireless devices designed to be worn on the body, such as smartwatches or fitness devices.

(ii) A device is considered “used” for purposes of this exemption when it has previously been lawfully acquired and activated on the wireless telecommunications network of a wireless carrier.

(4) Computer programs that enable smartphones and portable all-purpose mobile computing devices to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smartphone or device, or to permit removal of software from the smartphone or device. For purposes of this exemption, a “portable all-purpose mobile computing device” is a device that is primarily designed to run a wide variety of programs rather than for consumption of a particular type of media content, is equipped with an operating system primarily designed for mobile use, and is intended to be carried or worn by an individual.

(5) Computer programs that enable smart televisions to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smart television.

(6) Computer programs that are contained in and control the functioning of a motorized land vehicle such as a personal automobile, commercial motor vehicle or mechanized agricultural vehicle, except for computer programs primarily designed for the control of telematics or entertainment systems for such vehicle, when circumvention is a necessary step undertaken by the authorized owner of the vehicle to allow the diagnosis, repair or lawful modification of a vehicle function; and where such circumvention does not constitute a violation of applicable law, including without

limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency; and provided, however, that such circumvention is initiated no earlier than 12 months after the effective date of this regulation.

(7)(i) Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates solely for the purpose of good-faith security research and does not violate any applicable law, including without limitation the Computer Fraud and Abuse Act of 1986, as amended and codified in title 18, United States Code; and provided, however, that, except as to voting machines, such circumvention is initiated no earlier than 12 months after the effective date of this regulation, and the device or machine is one of the following:

(A) A device or machine primarily designed for use by individual consumers (including voting machines);

(B) A motorized land vehicle; or

(C) A medical device designed for whole or partial implantation in patients or a corresponding personal monitoring system, that is not and will not be used by patients or for patient care.

(ii) For purposes of this exemption, “good-faith security research” means accessing a computer program solely for purposes of good-faith testing, investigation and/or correction of a security flaw or vulnerability, where such activity is carried out in a controlled environment designed to avoid any harm to individuals or the public, and where the information derived from the activity is used primarily to promote the security or safety of the class of devices or machines on which the computer program operates, or

those who use such devices or machines, and is not used or maintained in a manner that facilitates copyright infringement.

(8)(i) Video games in the form of computer programs embodied in physical or downloaded formats that have been lawfully acquired as complete games, when the copyright owner or its authorized representative has ceased to provide access to an external computer server necessary to facilitate an authentication process to enable local gameplay, solely for the purpose of:

(A) Permitting access to the video game to allow copying and modification of the computer program to restore access to the game for personal gameplay on a personal computer or video game console; or

(B) Permitting access to the video game to allow copying and modification of the computer program to restore access to the game on a personal computer or video game console when necessary to allow preservation of the game in a playable form by an eligible library, archives or museum, where such activities are carried out without any purpose of direct or indirect commercial advantage and the video game is not distributed or made available outside of the physical premises of the eligible library, archives or museum.

(ii) Computer programs used to operate video game consoles solely to the extent necessary for an eligible library, archives or museum to engage in the preservation activities described in paragraph (i)(B).

(iii) For purposes of the exemptions in paragraphs (i) and (ii), the following definitions shall apply:

(A) “Complete games” means video games that can be played by users without accessing or reproducing copyrightable content stored or previously stored on an external computer server.

(B) “Ceased to provide access” means that the copyright owner or its authorized representative has either issued an affirmative statement indicating that external server support for the video game has ended and such support is in fact no longer available or, alternatively, server support has been discontinued for a period of at least six months; provided, however, that server support has not since been restored.

(C) “Local gameplay” means gameplay conducted on a personal computer or video game console, or locally connected personal computers or consoles, and not through an online service or facility.

(D) A library, archives or museum is considered “eligible” when the collections of the library, archives or museum are open to the public and/or are routinely made available to researchers who are not affiliated with the library, archives or museum.

(9) Computer programs that operate 3D printers that employ microchip-reliant technological measures to limit the use of feedstock, when circumvention is accomplished solely for the purpose of using alternative feedstock and not for the purpose of accessing design software, design files or proprietary data; provided, however, that the exemption shall not extend to any computer program on a 3D printer that produces goods or materials for use in commerce the physical production of which is subject to legal or regulatory oversight or a related certification process, or where the circumvention is otherwise unlawful.

(10) Literary works consisting of compilations of data generated by medical devices that are wholly or partially implanted in the body or by their corresponding personal monitoring systems, where such circumvention is undertaken by a patient for the sole purpose of lawfully accessing the data generated by his or her own device or monitoring system and does not constitute a violation of applicable law, including without limitation the Health Insurance Portability and Accountability Act of 1996, the Computer Fraud and Abuse Act of 1986 or regulations of the Food and Drug Administration, and is accomplished through the passive monitoring of wireless transmissions that are already being produced by such device or monitoring system.

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Dated: October 20, 2015.

David S. Mao,
Acting Librarian of Congress

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