



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Communications
and Information
Washington, D.C. 20230

¹ 17 U.S.C. § 1201(a)(1)(C) sets forth the required consultative process, which is that “during each succeeding 3-year period, the Librarian of Congress, upon the recommendation of the Register of Copyrights, who shall consult with the Assistant Secretary for Communications and Information of the Department of Commerce and report and comment on his or her views in making such recommendation, shall make the determination in a rulemaking proceeding”

² 47 U.S.C. § 901(c)(1).

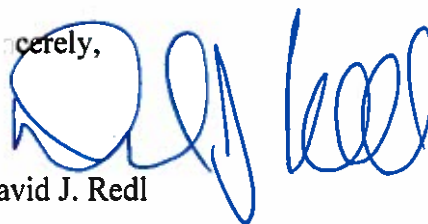
³ 47 U.S.C. § 901(b)(2)(D).

⁴ H.R. Rep. No. 105-551, pt. 2, at 23 (July 22, 1998).

⁵ 144 Cong. Rec. E2136-02 (Oct. 12, 1998).

Sincerely,

David J. Redl



Enclosure

⁶ Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, Docket No. 2017-10, Notice of Proposed Rulemaking, 82 Fed. Reg. 49550 (Oct. 26, 2017) (to be codified at 37 C.F.R. 201), <https://www.gpo.gov/fdsys/pkg/FR-2017-10-26/pdf/2017-23038.pdf>.

Seventh Triennial Section 1201 Rulemaking

Recommendations of the
National Telecommunications and Information Administration
to the
Register of Copyrights

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Pursuant to the consultative process set out in Title 17, Section 1201(a)(1)(C) of the United States Code, the Assistant Secretary for Communications and Information in the Department of Commerce, and Administrator of the National Telecommunications and Information Administration (NTIA), respectfully submits the following recommendations in response to the Notice of Proposed Rulemaking (NPRM) issued by the Copyright Office.¹

I. Broad Observations

Prior to our discussion of specific proposed exemptions, NTIA offers three general observations related to the Seventh Triennial Section 1201 Rulemaking.

Rulemaking Process Reforms

NTIA strongly endorses the Copyright Office's ongoing commitment to improving the Section 1201 rulemaking process. In addition to continuing improvements pioneered in the 2015 rulemaking, such as instituting the three-round public comment process and focusing each comment submission on one proposed exemption, the Copyright Office has taken important additional steps to make the process more efficient and accessible. Most importantly, NTIA applauds the Copyright Office for adopting a streamlined process for requesting the renewal of current exemptions. In past rulemakings, proponents of exemption renewal were required to re-create an entire evidentiary record, even when evidence from previous proceedings continued to apply, and even when there was no opposition to a renewal request. The renewal process implemented for the Seventh Triennial Section 1201 Rulemaking has dramatically reduced the burden on parties who seek to renew exemptions to the statutory prohibition against circumvention, particularly where renewal of a previously granted exemption is unopposed.² This reform has enabled interested parties—both proponents and opponents—to focus on new or expanded exemption proposals, and has helped improve governmental efficiency and effectiveness.

In addition to the streamlined process for requesting exemption renewal, NTIA appreciates the Copyright Office taking other steps to improve the rulemaking, such as posting online video tutorials about the process, live-streaming of hearings, and adjusting the rulemaking

¹ Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, Docket No. 2017-10, Notice of Proposed Rulemaking, 82 Fed. Reg. 49550 (Oct. 26, 2017) [hereinafter 2017 Notice of Proposed Rulemaking], <https://www.gpo.gov/fdsys/pkg/FR-2017-10-26/pdf/2017-23038.pdf>.

² For example, during the 2015 proceeding the American Foundation for the Blind (AFB) sought renewal without change of an exemption to enable the use of assistive technologies with literary works distributed electronically. Despite a lack of substantive opposition, AFB co-authored 54 pages of evidence and analysis across three filings and sent two affiliates to testify at the applicable hearing. See U.S. Copyright Office, *Section 1201 Exemptions to Prohibition Against Circumvention of Technological Measures Protecting Copyrighted Works*, <https://www.copyright.gov/1201/2015>. In contrast, presumptive renewal of the same exemption was achieved in the Seventh Triennial Section 1201 Rulemaking proceeding by completing a 5 page form that mainly included a four paragraph explanation of the need for renewal. See Renewal Petition of University of Michigan Library Copyright Office, Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0039>.

schedule to better accommodate law school clinical programs that represented parties in this proceeding. We strongly encourage the Copyright Office to continue along this path of greater accessibility and transparency in future proceedings. For example, the Copyright Office could allow parties unable to attend hearings to participate remotely. As always, NTIA stands ready to discuss ideas for any future rulemaking enhancements.

Treatment of Non-Copyright Policy Issues

Three years ago, NTIA noted “the sixth triennial rulemaking . . . stood out for its extensive discussions of matters with no or at best a very tenuous nexus to copyright protection.” NTIA “urge[d] the Copyright Office against interpreting the statute in a way that would require it to develop expertise in every area of policy that participants may cite on the record.”³ In this proceeding, some parties pushed in the opposite direction, and argued that the rulemaking should be guided by a very expansive view of the statutory text that allows the Librarian of Congress to consider “such other factors as the Librarian considers appropriate” when issuing exemptions.⁴ For example, in opposing expansion of the exemption allowing use of third party feedstock with 3D printers, one opponent argued in part that technological protection measures (TPMs) “also help make 3D printing safer and more secure.”⁵ Similarly, in opposing a request to expand the vehicle repair exemption to include automobile telematics systems, another opponent argued that allowing car owners to access data about their vehicles could “weaken safety and environmental protections.”⁶

Contrary to the calls to consider policy issues unrelated to copyright, NTIA continues to believe that “the deliberative process should not deviate too far afield from copyright policy concerns.”⁷ While the fifth statutory factor does give the Librarian the flexibility to consider issues not specifically enumerated in the description of the rulemaking process, the Librarian should interpret it in the context of the rest of the statute and the legislative history. The Librarian, upon the recommendation of the Register of Copyrights in consultation with NTIA’s Assistant Secretary, “shall make the determination in a rulemaking proceeding . . . whether persons who are users of a copyrighted work are, or are likely to be in the succeeding 3-year period, adversely affected by the prohibition [against circumvention] in their ability to make non-infringing uses.”⁸ This clearly suggests Congress primarily intended the rulemaking to be an investigation of copyright-related issues, and to that end, each of the four more specific statutory factors has a clear nexus with exclusive rights under copyright law, limitations and exceptions to those rights, or the markets for protected works. Furthermore, during negotiations over the bill that would become the DMCA, Congress decided that the responsibility of conducting the

³ Letter from Lawrence E. Strickling, Assistant Secretary, NTIA, to Maria A. Pallante, Register of Copyrights, at 3-4 (Sept. 18, 2015) (2015 NTIA Letter), https://www.ntia.doc.gov/files/ntia/publications/2015_ntia_dmca_section_1201_consultation.pdf.

⁴ 17 U.S.C. § 1201(a)(1)(C)(v).

⁵ Class 12 Comments of Stratasys at 9-10, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class12/Class_12_Opp'n_Stratasys.pdf.

⁶ Class 7 Comments of the Auto Alliance at 13-14, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class7/Class_07_Opp'n_Auto_Alliance.pdf.

⁷ 2015 NTIA Letter, at 4.

⁸ 17 U.S.C. § 1201(a)(1)(C).

rulemaking would fall to the Copyright Office, specifically due to the Office’s subject matter expertise (and not to a department or agency with more generalized subject matter expertise and authority).⁹

To illustrate this point, we provide one example. In the ordinary course of commerce in the United States, when an individual purchases a physical good, that person is “free to tinker” with the good; although the consumer may risk voiding a warranty, the law nevertheless generally permits that person to modify the item.¹⁰ To the extent that Congress chooses to restrict the “freedom to tinker”—such as to protect the environment, or to make 3D-printed parts more reliable—it is free to do so, or to empower an expert regulatory agency to address any risks raised. In the absence of a clear expression of Congressional intent, however, the Librarian should not in the context of a copyright policy process attempt to discern the validity—or lack thereof—of (for example) the environmental arguments advanced by a group of copyright holders. The TPMs at issue in this proceeding have been granted legal protection in order to promote copyright interests, and that should be the focus of decision making in this process.

Usability of Granted Exemptions

As the range of granted exemptions has increased during the last few proceedings, the length and complexity of the resulting regulatory text has also increased. For example, the regulatory text from 2010 totaled less than 500 words for six exemptions.¹¹ The most recent set of rules issued in 2015 totaled over 2,500 words in length for 10 exemptions.¹² NTIA appreciates that some of this growth is unavoidable given the intricacies of certain proposed classes and related concerns, and we know that the Copyright Office and the Librarian share a goal of regulatory clarity. We nevertheless want to stress the importance of keeping exemption text as clear and simple in formulation as possible, so that potential users of exemptions can properly understand the options and limitations. This is particularly important given the likely

⁹ The DMCA Conference Report noted that “it is the intention of the conferees that . . . in recognition of the expertise of the Copyright Office, the Register of Copyrights will conduct the rulemaking” in its entirety, up to “recommending final regulations in the report to the Librarian.” H.R. Rep. No. 105-796, at 64 (1998) (Conf. Rep.).

¹⁰ In Section 1201, Congress deviated from this general approach for a very specific purpose—to implement provisions of the 1996 WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) requiring “effective legal remedies against the circumvention of effective technological measures” that are used by authors (in the case of the WCT) or by performers or producers of phonograms (in the case of the WPPT) in connection with the exercise of their rights under those treaties. WIPO Copyright Treaty, Article 11, <http://www.wipo.int/wipolex/en/details.jsp?id=12740>; WIPO Performances and Phonograms Treaty, Chapter IV, Article 18, http://www.wipo.int/treaties/en/text.jsp?file_id=295578. The WCT and WPPT together are often called the “WIPO Internet Treaties.”

¹¹ Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2008-8, Final Rule, 75 Fed. Reg. 43825, 43839 (July 27, 2010) (2010 Final Rule), <https://www.gpo.gov/fdsys/pkg/FR-2010-07-27/pdf/2010-18339.pdf>.

¹² Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. 2014-07, Final Rule, 80 Fed. Reg. 65944, 65961-64 (Oct. 28, 2015) (2015 Final Rule), <https://www.gpo.gov/fdsys/pkg/FR-2015-10-28/pdf/2015-27212.pdf>.

overall growth in the range of exempted classes of work facilitated by the streamlined renewal process.

NTIA also believes that the Copyright Office and the Librarian can increase clarity by removing requirements that overly complicate exemptions.¹³ NTIA appreciates that the Librarian weighs carefully each requirement in the exemptions. Yet the record suggests that attaching certain requirements, such as non-copyright-related restrictions, to the exemptions often creates uncertainty for potential exemption users and copyright holders.¹⁴ Certain requirements have also limited the usability of exemptions.¹⁵ NTIA recommends that the Copyright Office only include exemption requirements that focus on protecting copyrighted works.

Finally, although it is likely too late for this rulemaking cycle, we urge the Copyright Office and the Librarian to consider adopting a more structured format for each individual exemption. A structured format could separately set out, for example, the class of work, the groups of beneficiaries, and the types of circumvention permitted. Such an approach would likely improve readability, and might make it easier to manage requests to expand or modify existing exemptions in future rulemaking cycles. NTIA would be happy to discuss this general concept in more detail if desired following this Seventh Triennial Section 1201 Rulemaking.

II. Renewal of Existing Exemptions

NTIA agrees with the Acting Register that, consistent with the terms of the streamlined exemption renewal process, the Copyright Office “has received a sufficient petition to renew each existing exemption,” and that there was no meaningful opposition to renewal.¹⁶ Accordingly, we fully support the Acting Register’s recommendation that the Librarian readopt all existing exemptions. In cases where the Librarian may adopt proposals to expand these

¹³ For example, NTIA urges the Copyright Office to avoid any further recommendations that would result in exemption coverage varying over time within the three-year period between rulemakings, such as the decision in 2015 to delay the effective date of portions of the security research exemption by one year. *Id.*

¹⁴ For example, in its initial comments supporting expansion of the security research exemption, one commenter argued that the word “solely” in the phrase “solely for the purpose of good-faith security research” clause makes it “unclear whether academic research and open public discussion of vulnerabilities fall within the exemption.” This commenter raised the possibility that circumvention within the ambit of an exemption when undertaken could later become unlawful based on subsequent actions. Class 10 Comments of the Center for Democracy and Technology at 4 (CDT Class 10 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-cdt.pdf>.

¹⁵ One witness alluded to the concern that a 3D printer “that was sometimes producing things that were for purely personal uses” could at a different time be “used to produce things for commercial purposes,” thus putting the applicability of the existing 3D printing exemption in doubt. Testimony of Michael Weinberg, Seventh Triennial Section 1201 Rulemaking at 25 (April 13, 2018), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-13-2018.pdf>.

¹⁶ 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49553.

existing exemptions, NTIA recommends drafting language carefully to ensure that the resulting exemptions are no less permissive to users than the regulations they replace. However, NTIA does not interpret the streamlined renewal process to require that regulatory language remain identical by default; in other words, we encourage the development of simplified regulatory text to avoid situations where exemption language could become too unwieldy.

Because expansion proposals accompany most of the current exemptions in this proceeding, we generally express specific views on both renewal and expansion petitions within the same class-specific discussions. The one exception is the petition to renew the existing exemption for accessibility of e-books by the visually impaired, which no one proposed to expand. In its petition, the University of Michigan Library Copyright Office explained, “in many cases, works that are distributed electronically include technical protection measures that interfere with the use of assistive technologies such as screen readers and refreshable Braille displays.” The proponent further asserted that they “have to convert these works into accessible formats” in order to serve their students and faculty.¹⁷ It is clear that the harms to non-infringing use detailed during the 2015 rulemaking continue to exist in this case, and accordingly, NTIA supports renewal of this exemption.

III. Proposed Additional and Expanded Exemptions

Class 1 – Audiovisual Works – Criticism and Comment

The current criticism and comment exemptions allow for the use of “motion pictures (including television shows and videos) . . . 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

¹⁷ Renewal Petition of University of Michigan Library Copyright Office at 3, Docket No. 2017-10.

- (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.”¹⁸

Various petitioners proposed six modifications to the current exemptions. The Copyright Office grouped the six proposals into one class (Class 1) because the proposals raise similar concerns.¹⁹ Fundamentally, each Class 1 proponent seeks to access copyrighted audiovisual works protected by technological measures. Class 1 proponents have identified the copyrighted

¹⁸ 37 C.F.R. § 201.40(b)(1).

¹⁹ 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49559.

works at issue and defined sufficiently the types of media or devices on which the copyrighted works are stored, the TPMs, and the method of circumvention. With the proposed modifications, proponents have not requested to change these elements of the original exemptions. In four petitions (Collapse, e-books, Documentary, and Online Courses), proponents have proposed to expand the types of users permitted to circumvent the TPMs. In the fifth petition (Brigham Young University (BYU)/Educational), proponents suggested allowing for the use of the entire motion picture in a limited educational context. In the sixth petition (Screen Capture), proponents suggested removing or clarifying all references to screen capture technology that appear throughout the original exemptions. NTIA will address the merits of each proposal in turn.

Collapse

The Librarian first granted exemptions for audiovisual works for the purpose of criticism or comment in 2010. The 2010 exemptions included four categories of users: (1) College and university professors; (2) College and university film and media studies students; (3) Documentary filmmakers; and (4) Noncommercial video remixers.²⁰ In 2012, the Librarian renewed the 2010 exemptions and expanded the categories of users permitted to use the exemption to include the following: (5) Nonfiction multimedia e-books offering film analysis; (6) College and university students; and (7) Kindergarten through twelfth grade (K-12) educators.²¹ In 2015, the Librarian again renewed the exemptions for users and added the following three types of users: (8) Faculty of Massive Open Online Courses (MOOCs) offered by accredited nonprofit educational institutions; (9) K-12 students; and (10) Educators and participants in non-profit digital and media literacy programs.²²

The Electronic Frontier Foundation, New Media Rights, and Organization for Transformative Works have proposed the following collapsed 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 works for the purpose of criticism or comment, where the motion picture is lawfully made and acquired on a DVD protected by the Content Scrambling System, on a BluRay disc protected by the Advanced Access Control System, via a digital transmission protected by a technological measure, or a similar technological protection measure intended to control access to a work, where the person engaging in circumvention reasonably believes that non-circumventing

²⁰ See generally 2010 Final Rule, 75 Fed. Reg. 43825.

²¹ Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, Docket No. 2011-7, Final Rule, 77 Fed. Reg. 65260 (Oct. 26, 2012) (2012 Final Rule), <https://www.gpo.gov/fdsys/pkg/FR-2012-10-26/pdf/2012-26308.pdf>.

²² See generally 2015 Final Rule, 80 Fed. Reg. 65944.

alternatives are unable to produce the required level of high-quality source material.²³

EFF, *et al.*, proposed collapsing the existing exemptions into one single exemption in order to eliminate the limitations on the types of user or use. Proponents suggested that the regulations should allow circumvention as long as the purpose is for criticism or comment, and they argued that collapsing the exemptions is necessary to eliminate confusion among users or potential users.

NTIA Position: NTIA supports *in part* the proposal to modify this exemption. NTIA suggests that the Librarian should consolidate college and university faculty and students, K-12 educators, K-12 students, and educators and participants in nonprofit digital and media literacy programs into one exemption.²⁴ However, NTIA does not support the elimination of all limitations on the types of user or use.

In 2015, NTIA recommended that the Librarian adopt an exemption that would cover equally all educational users, including the four users discussed in the paragraph above, as well as MOOCs.²⁵ During this 1201 proceeding, NTIA recommends an approach similar to our 2015 recommendation.²⁶ In the 1201 Study and the NPRM, the Copyright Office considered whether to consolidate educational use exemptions for criticism and comment of audiovisual works, and we support this approach.²⁷ NTIA also concurs with the suggested new language from Section 107 to include “teaching” in addition to criticism and comment as clearly supported by the record for the uses contemplated by these users.²⁸

Analysis: Proponents pointed to the ever-expanding categories of class 1 users as evidence that a variety of fair users need to or will need to make use of short portions of motion

²³ Class 1 Comments of Electronic Frontier Foundation, *et al.* (EFF Class 1 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initialcomments-eff.pdf>; <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initialcomments-eff.pdf>; see also Class 1 Petition of Electronic Frontier Foundation, *et al.* (EFF Class 1 Petition), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class1/class-01-newpetition-eff.pdf>.

²⁴ NTIA recommends consolidating the education use exemptions in subsections (iv), (vi), (vii), and (vii) of (b)(1) into one subsection.

²⁵ See 2015 NTIA Letter, at 11-22.

²⁶ Based on the evidence in the record, however, NTIA suggests that the Copyright Office maintain a separate MOOCs subsection. See *infra*, Class 1, Online Courses.

²⁷ See U.S. Copyright Office, *Section 1201 of Title 17, A Report of the Register of Copyrights*, at 109 (June 2017) [hereinafter 1201 Study], <https://www.copyright.gov/policy/1201/section-1201-full-report.pdf>; 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49559.

²⁸ See, e.g., Transcript, Hearing on Exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 – Digital Millennium Copyright Act, at 216-22 (April 11, 2018) (April 11 Hearing Transcript) <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-11-2018.pdf>.

pictures for the purpose of criticism or comment.²⁹ Opponents responded that proponents suggested a categorical exemption for fair use that would not meet the statutory criteria.³⁰ In response, proponents sought to break down each element of their proposed exemption to argue that the proposed exemption is “far from” a categorical exemption.³¹ Proponents also argued at the hearing that removing the categories of users would be “almost identical to past exemptions” and asserted that collapsing all of class 1 would not result in a vast expansion of the exemption.³²

Although NTIA appreciates the arguments expressed by proponents, we believe the proposed exemption lacks the specificity required by the statute. The Librarian must base its regulatory exemptions upon finding the proposed user would engage in non-infringing uses. Proponents argued that collapsing the users into one exemption for short clips of audiovisual works would benefit anyone wanting to make a fair use of video through circumvention.³³ By eliminating all of the categories of specific users, however, the exemption would stray too far from the statutory requirement of specificity.

NTIA does agree with one proponent who demonstrated that the distinction among educational uses in the regulations has no basis in the Copyright Act and is not helpful to educational users’ ability to utilize the exemption.³⁴ Rather, the distinctions raise the likelihood that potential users will have trouble understanding what the exemptions allow. Therefore, NTIA suggests that the Librarian should group the educational uses in one exemption, as the Copyright Office has previously considered.³⁵ The complicated language in Section 201.40(b)(1) adversely affects educational users seeking to circumvent audiovisual works for the purposes of comment, criticism, or teaching. Proponents have argued sufficiently that the current exemptions for criticism or comment on audiovisual works are unworkable and confusing to educational users.³⁶ Even the opponents agree that the regulations could benefit

²⁹ Class 1 Reply Comments of Electronic Frontier Foundation, *et al.* (EFF Class 1 Reply Comments) at 4, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_EFF_NMR_OTW.pdf.

³⁰ See Class 1 Opposition Comments of DVD CCA & AACCS LA (DVD CCA Class 1 Opposition Comments) at 5-9, https://www.copyright.gov/1201/2018/comments-021218/class1/Class_01_Opp'n_DVD_CCA_&_AACCS_LA.pdf.

³¹ See EFF Class 1 Reply Comments, at 3; see also Transcript, Hearing on Exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 – Digital Millennium Copyright Act, at 73-74 (Apr. 24, 2018) (April 24 Hearing Transcript), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-24-2018.pdf>.

³² April 24 Hearing Transcript, at 97.

³³ EFF Class 1 Comments, at 10-11; EFF Class 1 Reply Comments, at 10-11; see also April 24 Hearing Transcript, at 74-75. At the hearing, proponents suggested that users are at risk of violating the law due to misidentifying themselves to fit into a (b)(1) category. April 24 Hearing Transcript, at 53-57.

³⁴ Class 1 Comments of Brigham Young University & Brigham Young University-Idaho (BYU Class 1 Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initial-comments-byu.pdf>.

³⁵ 1201 Study, at 109; 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49559.

³⁶ See EFF Class 1 Comments, at 7; EFF Class 1 Reply Comments, at 5; April 11 Hearing Transcript, at 217.

from clarification and have provided a shortened version.³⁷ Even more important here is that the educator's needs are the same and the students' needs are the same no matter the level of education, whether it be high school, middle school, or at the university level.³⁸ Therefore, NTIA recommends modifying the exemption language to make it easier to read and more practicable for users to better serve the needs of instructors and students at all educational levels.³⁹ Though no petitioner requested specifically to modify the exemption for digital and media literacy educational programs, NTIA suggests the Librarian should collapse all educational uses, including digital and media literacy programs, into one exemption.⁴⁰

NTIA Recommendation for Class 1 (Collapse): NTIA recommends that the Librarian adopt the following consolidated version of the educational uses exemption for audiovisual works, which modifies proponents' proposal:

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 purposes of criticism, comment, or teaching for educational purposes by the following users: College and university faculty and students, kindergarten through twelfth grade educators and students, including general educational development (GED) programs, and educators and participants in nonprofit digital and media literacy programs offered by libraries, museums, and other nonprofit entities with an educational mission.

E-Books

The current e-books exemption allows for the use of motion pictures (including television shows and videos) where circumvention is undertaken solely in order to make use of short portions of the motion pictures for the purpose of comment and criticism in nonfiction multimedia e-books offering film analysis.⁴¹ Authors Alliance proposed expanding the multimedia e-book exemption to remove the non-fiction and film analysis limitations. While Authors Alliance did not ask explicitly to expand how e-book is defined, the petitioner described media that would, if the petition was granted, appear to broaden the definition of e-book beyond what is the common understanding of this term. Authors Alliance proposed the following exemption text:

³⁷ See Class 1 Comments of Joint Filmmakers (Joint Filmmakers Class 1 Comments) at 8-9, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initialcomments-joint-filmmakers.pdf>. (This proposed version shortened the exemption to 323 words versus 956 words in the current regulations, but largely keeps the educational uses separate.); *see also* April 11 Hearing Transcript, at 214-216 (Joint Filmmakers desired to keep the same contours for the exemption just simplify the language in other ways).

³⁸ April 11 Hearing Transcript, at 217-219, 220-222.

³⁹ See 2015 NTIA Letter, at 11-15.

⁴⁰ NTIA believes the testimony and general proposals submitted by EFF and BYU support this idea.

⁴¹ See 37 C.F.R. § 201.40(b)(1)(iii).

Motion pictures (including television shows and videos) as defined in 17 U.S.C. § 101, where circumvention is undertaken solely to make use of short portions of the motion pictures for the purpose of criticism or comment in multimedia e-books 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.⁴²

Authors Alliance suggested that this modification would enable all authors to criticize and comment on motion pictures in a larger array of formats and genres, such as fan-fiction and websites.

NTIA Position: NTIA supports *in part* the proposal to modify the exemption for Class 1: Audiovisual Works – Comment and Criticism (Multimedia e-books). At this time, proponents have argued convincingly that the exemption should not include the film analysis limitation but have failed to make the case that some of the proposed uses of audiovisual clips in multimedia e-books should be granted an exemption in this cycle.⁴³

Analysis: Proponents have made the case that the prohibition on circumvention adversely affects or is likely to adversely affect multimedia e-book authors who use clips of audiovisual works for fiction e-books or nonfiction e-books that are not offering film analysis. Proponents demonstrated that the prohibition adversely affects multimedia e-book authors by providing examples of multimedia e-book authors’ planned projects for nonfiction works.⁴⁴ NTIA believes that using audiovisual clips in multimedia e-books for nonfiction uses other than film analysis would be non-infringing fair use.⁴⁵

⁴² Class 1 Comments of Authors Alliance, *et al.* (Authors Alliance Class 1 Comments) at 1, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initialcomments-authors-alliance-et-al.pdf>.

⁴³ See Class 1 Opposition Comments of DVD CCA & AACLS LA (DVD CCA Class 1 Opposition Comments) at 20-21, https://www.copyright.gov/1201/2018/comments-021218/class1/Class_01_Opp'n_DVD_CCA_&_AACLS_LA.pdf. We note that in some cases, some of the examples raised may be able to qualify for use of the exemption under another exemption (*e.g.*, remix videos), or as a new exemption for blogs, websites and other online publishing. See April 11 Hearing Transcript, at 105-107, 121-123, 157. It seems to NTIA that one of the largest differences is the required step to seek a publisher and distribution of the e-book through more traditional routes, which includes review, editing, and submission for approval. This publishing process comes with inherent safeguards against infringement. Online publishing does not appear to have the same safeguards. Admittedly, the traditional publishing world and the online publishing world are converging, which may add to the confusion and impetus to submit this proposed modification to the e-book exemption. However, proponents did not make the case that the interests of the content holders would have any protection against infringement with the proposed modification.

⁴⁴ See Authors Alliance Class 1 Comments, at 17-22; April 11 Hearing Transcript, at 118-119 (for example, the use of short film clips in an e-book entitled “Show Sold Separately” to show how audiences are interacting with movies and TV shows based on preconceived notions before the material is released, such as trailers).

⁴⁵ See Authors Alliance Class 1 Comments at 7-15.

NTIA does not believe that proponents defined sufficiently their proposed expanded definition of multimedia e-book. Proponents appear to contend that the Copyright Office could consider a website or a blog to be an e-book.⁴⁶ The proposed expansion would seem to include nearly every online publication, which may result in an overly broad exemption given the available record. Opponents contended that proponents proffered no examples of proposed or actual uses that the Copyright Office could analyze for this expansion of the definition of e-book.⁴⁷ NTIA is concerned this broad proposed expansion is fraught with the potential risk to rights holders. The expanded exemption could allow essentially all authors of websites to circumvent TPMs to insert short audiovisual clips into their sites. NTIA believes the potential risk of infringement is too great to support the proposed expansion in its entirety.

NTIA Recommendation for Class 1 (E-Books): NTIA recommends renewing, with a modification to remove the film analysis limitation, the current exemption for Class 1: Audiovisual Works – Criticism and Comment (e-books), as follows:

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 works for the purpose of criticism or comment for use in nonfiction multimedia e-books, where the motion picture is lawfully made and acquired on a DVD protected by the Content Scrambling System, on a BluRay disc protected by the Advanced Access Control System, via a digital transmission protected by a technological measure, or a similar technological protection measure intended to control access to a work, where the person engaging in circumvention reasonably believes that noncircumventing alternatives are unable to produce the required level of high-quality source material.

Documentary

Film Independent, the International Documentary Association, and Kartemquin Films (Joint Filmmakers) proposed expanding the documentary exemption to include all filmmakers, as follows:

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 works for the purpose of criticism or comment, where the motion picture is lawfully made and acquired on a DVD protected by the Content Scrambling System, on a BluRay disc protected by the Advanced Access Control

⁴⁶ See, e.g., Class 1 Reply Comments of Authors Alliance, *et al.* (Authors Alliance Class 1 Reply Comments), Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_Authors_Alliance_et_al_.pdf (suggesting that *Digital Dubliners* (<https://digitaldubliners.com/>) is a multimedia e-book); see also April 11 Hearing Transcript, at 104-111, 118-120, 128-129, 131-135, 156-161, <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-11-2018.pdf>.

⁴⁷ DVD CCA Class 1 Opposition Comments, at 20-23.

System, via a digital transmission protected by a technological measure, or a similar technological protection measure intended to control access to a work, where the person engaging in circumvention reasonably believes that noncircumventing alternatives are unable to produce the required level of high-quality source material.⁴⁸

Joint Filmmakers suggested this modification to enable all filmmakers to utilize short clips from audiovisual works as a qualifying fair use – such as criticism and comment of other works – in their motion pictures, whether the new film is a documentary or not.⁴⁹ Filmmakers first requested this exemption in the 2010 proceeding.⁵⁰

NTIA Position: NTIA recommends granting the requested exemption for Class 1: Audiovisual Works – Comment and Criticism (Documentary).

Analysis: Proponents have made the case that many instances of using audiovisual clips in filmmaking are non-infringing or fair uses under Title 17.⁵¹ The record supports the proponents’ assertion that non-documentary filmmakers would make a qualifying non-infringing

⁴⁸ Joint Filmmakers Class 1 Comments, at 3. This formulation refines the original idea that Joint Filmmakers proposed in its Initial Petition. *See* Joint Filmmakers Petition at 3.

⁴⁹ The purpose of the exemption would be to enable circumvention by non-documentary filmmakers engaged in comment and criticism of the work. The proposed exemption would also remove the references to screen-capture technology in 37 C.F.R. § 201.40(b)(1)(i)(A)-(B). *Infra*, Class One, Screen Capture, NTIA will address the specific requests for clarifying the references to screen-capture technology.

⁵⁰ *See generally* 2010 Final Rule, 75 Fed. Reg. 43825. In 2012, a group of filmmakers led by International Documentary Association requested expanding the exemption for documentary filmmakers to include all other filmmakers. NTIA suggested that the Register deny the expansion in 2012 because the record at that time did not support it. *See* Letter from Lawrence E. Strickling, Assistant Secretary, NTIA, to Maria A. Pallante, Register of Copyrights, at 25 (Sept. 21, 2012) (2012 NTIA Letter), https://www.copyright.gov/1201/2012/2012_NTIA_Letter.pdf. In 2015, the International Documentary Association again led a group of petitioners requesting exemption for all filmmakers, including those creating documentary and narrative forms, for purposes of fair use. At that time, NTIA supported a modified exemption for non-documentary film genres that aligned closely with courts’ findings of fair use. *See* 2015 NTIA Letter, at 26. In both 2012 and 2015, the Copyright Office declined to adopt the proposed exemptions to allow use by non-documentary filmmakers. *See generally* 2012 Final Rule, 77 Fed. Reg. 65260; 2015 Final Rule, 80 Fed. Reg. 65944. In 2015, the Copyright Office rejected expanding the exemption to non-documentary filmmakers because the Copyright Office concluded the record did not support a finding that the use would be non-infringing. *See* 2015 Final Rule, 80 Fed. Reg. at 65948-49. In 2018, the Joint Filmmakers requested the expanded exemption again and the Office invited proponents to provide new factual or legal support for the proposed modifications. 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49559. The proponents provide numerous examples wherein the prohibition adversely affected creating non-documentary films. *See* Joint Filmmakers Class 1 Comments, at 10-22; Joint Filmmakers Class 1 Reply Comments, at 7-9. In the past three years, non-documentary filmmakers have used audiovisual clips without circumvention and without licensing in cases that courts have found to be non-infringing.

⁵¹ *See* 17 U.S.C. § 107.

or fair use of short portions of motion pictures.⁵² Proponents argued that the current “documentary filmmakers” limitation has caused confusion when filmmakers have sought to apply the exemption.⁵³ Further, proponents have identified cases in which courts have found that non-documentary filmmakers engaged in fair use.⁵⁴ In these cases, non-documentary filmmakers used the clips for criticism and commentary, often in a highly transformative manner.

Under the first fair use factor, the purpose and character of the use, filmmakers using short portions of audiovisual works in non-documentary films, would be a non-infringing, transformative use.⁵⁵ Opponents argued that the purpose of the proposed use would not be transformative because the purpose would be for entertainment.⁵⁶ NTIA disagrees. Non-documentary filmmakers could take material from the original work and transform it to add new expression or meaning.⁵⁷

The second fair use factor, the nature of the copyrighted work, would likely favor proponents. In the context of NTIA’s recommendation, non-documentary filmmakers would use the short portions of audiovisual works, and the copyright owner would have already published the original work. That said, as proponents concede, motion pictures are often highly creative works (but even if the second factor weighs against fair use, it is not dispositive).⁵⁸ The third fair use factor, the amount and substantiality of the work used, would also weigh in favor of a finding

⁵² The overall genre of the film matters little for the purposes of a fair use determination. *See* Joint Filmmakers Class 1 Comments, at 12; Class 1 Reply Comments of Joint Filmmakers (Joint Filmmakers Class 1 Reply Comments) at 7-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_Joint_Filmmakers.pdf.

⁵³ *See* Joint Filmmakers Class 1 Comments, at 4-8, 26-27; Joint Filmmakers Class 1 Reply Comments, at 12-15.

⁵⁴ *See* Joint Filmmakers Class 1 Comments, at 11-12, Appendix S; Joint Filmmakers Class 1 Reply Comments, at 6-7. Importantly, with regard to alternatives to circumvention, these are cases where copyright owners have refused to license the relevant clip.

⁵⁵ *See* Joint Filmmakers Class 1 Comments, at 12-13. In many instances, filmmakers sought to add context to their own films using short portions of audiovisual clips, and the use qualified or would have qualified as a transformative use of the original clip. For example, proponents cited one filmmaker who had been planning a fictional film exploring a modern relationship between historical figures and intended to use clips from films and other programs to help tell the fictional story. *See id.* at Appendix N. Another filmmaker would use footage from the aftermath of 9/11 to tell a fictional story of a man searching for his family. *See* Joint Filmmakers Class 1 Comments, at Appendix I. *See also* April 11 Hearing Transcript, at 95-98. Proponents demonstrated effectively that there is a growing trend of all filmmakers using clips in their filmmaking, many of which have been determined to be fair use.

⁵⁶ *See* Class 1 Opposition Comments of Joint Creators II (Joint Creators II Class 1 Opposition Comments) at 9-14, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class1/Class_01_Opp'n_Joint_Creators_II.pdf; DVD CCA Class 1 Opposition Comments, at 13-20.

⁵⁷ The commercial or entertainment nature of the use is not dispositive for the purposes of the first factor. *See Campbell v. Acuff-Rose*, 510 U.S. 569, 584 (1994).

⁵⁸ *See* Joint Filmmakers Class 1 Comments, at 13-14.

of fair use because non-documentary filmmakers would use a short portion that is no more than necessary to criticize or comment on the work.⁵⁹

The fourth and final fair use factor, effect of the use upon the potential market, would also weigh in favor of fair use. Proponents have demonstrated that non-documentary filmmakers' use of short portions of audiovisual works would not affect the market for the copyrighted work.⁶⁰ Opponents offered no evidence that such uses would have an adverse effect on the market for audiovisual works.⁶¹ Opponents did argue that the proposed modification would harm the copyright owner's clip licensing market.⁶² Regardless of the relevant market, opponents have demonstrated no evidence that the documentary exemption has resulted in harm to the market, nor that the expansion of the exemption would cause that harm.

Proponents have made the case that the prohibition on circumvention adversely affects or is likely to adversely affect non-documentary filmmakers who use clips of audiovisual works. Proponents provided many examples where the prohibition hindered the development of non-documentary film projects when it was not clear the filmmakers could utilize the current exemption.⁶³

The record does not support opponents' suggestion that viable alternatives (*e.g.*, clip licensing) exist for non-documentary filmmakers' fair use of the motion pictures.⁶⁴ Licensing contracts often include non-disparagement clauses, forbidding licensees from criticizing the original work.⁶⁵ Thus, licensing agreements would not be a viable alternative to circumvention.

NTIA Recommendation for Class 1 (Documentary Limitation): NTIA recommends adopting the expansion. NTIA recommends that the Copyright Office adopt the following exemption language:

⁵⁹ The short portions limitation ensures that filmmakers use only a reasonable amount of the original work. *See id.* at 15-16.

⁶⁰ *See id.* at 16.

⁶¹ In fact, NTIA observes that no market appears to exist for short portions of these works for the purpose of comment or criticism. *See, e.g., id.* at Appendix T.

⁶² *See Joint Creators II Opposition Comments*, at 12-13. It is debatable whether the appropriate market to analyze is the market for the entire motion picture or the clip. NTIA does not take a position on this question. Opponents do not make compelling arguments that fair use of a short portion of an audiovisual work would affect the market for the motion picture as a whole. If the relevant market were for movie clips, the effect would be negligible because copyright owners tend not to grant licenses for the purposes of comment and criticism of their works. *See Joint Filmmakers Class 1 Comments*, Appendices S, T; *Joint Filmmakers Class 1 Reply Comments*, at 6; *see also Campbell*, at 592 (noting that the "law recognizes no derivative market for critical works," and the "unlikelihood that creators of imaginative works will license critical reviews or lampoons of their productions removes such cases from the very notion of a potential licensing market").

⁶³ *See Joint Filmmakers Class 1 Comments*, at 15-20.

⁶⁴ *See Joint Creators II Class 1 Opposition Comments*, at 12-14.

⁶⁵ *See Joint Filmmakers Class 1 Comments*, Appendix T.

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 works for the purpose of criticism or comment for use in filmmaking, where the copyrighted work is used for a documentary film or in a non-documentary film, where the motion picture is lawfully made and acquired on a DVD protected by the Content Scrambling System, on a BluRay disc protected by the Advanced Access Control System, via a digital transmission protected by a technological measure, or a similar technological protection measure intended to control access to a work, where the person engaging in circumvention reasonably believes that noncircumventing alternatives are unable to produce the required level of high-quality source material.

New Educational Uses

Brigham Young University (BYU) proposed the following specific exemption language in this class:

Motion Pictures (including television shows and videos), as defined in 17 U.S.C. § 101, where circumvention is undertaken solely in order to facilitate non-infringing performances of the works for nonprofit educational purposes, in accordance with 17 U.S.C. § 110(1) or § 110(2).⁶⁶

The purpose of this new exemption would be to allow circumvention for colleges and universities to make use of *entire* motion pictures to perform the film in class, in accordance with the TEACH Act.⁶⁷ BYU argued that this exemption is necessary as optical drives become obsolete and unavailable for individual classroom use, and universities need to find another way to play all or part of motion pictures in the classroom as an integral part of instruction. This proposal would allow the institutions to transfer and store motion pictures from optical media to a closed centralized server in order to play the motion picture in a classroom setting.⁶⁸

NTIA Position: NTIA is sympathetic to the situation faced by educational institutions confronting changing technologies, and we recommend that if the Copyright Office considers recommending granting this exemption that it do so with some modifications to BYU's proposal. These include additional limitations based on the record and the law in order to mitigate the risk of infringement and harm to the copyright holders. NTIA believes that proponents have

⁶⁶ Class 1 Reply Comments of Brigham Young University & Brigham Young University-Idaho (BYU Class 1 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_BYU.pdf.

⁶⁷ *Id.*; 17 U.S.C. § 110(1) and (2).

⁶⁸ BYU Class 1 Reply Comments, at 7-8. It should be noted that BYU did advocate that the exemption be used for all educational levels as the TEACH Act does not distinguish between educational levels. However, the record for this exemption largely involved only university level uses. *See e.g.*, April 11 Hearing Transcript at 224-226.

highlighted a market problem that requires a solution and therefore merits consideration of this proposed exemption.⁶⁹

BYU proposed circumventing TPMs to copy content stored on DVDs, Blu-ray discs, or streamed via various online streaming services, to a closed, centralized media server hosted by the university.⁷⁰ The primary reason for universities to take this step is to be able to continue to play motion pictures in the classroom as universities face the ramifications of obsolescence and discontinued use of optical drives. For example, optical drives are no longer being included with most computers and are increasingly unavailable as standalone devices, thereby preventing instructors from using motion pictures on optical media in their face-to-face classroom instruction without some solution.⁷¹ BYU's proposed solution would be to copy their existing media library to a central secured server and make available to each classroom a broadcast of this content.

Proponents argued convincingly that the uses for which they are requesting the exemption would likely be fair uses as these include criticism, comment, and teaching using motion pictures in face-to-face discussions in the classroom.⁷² Indeed the use would be by educational and nonprofit institutions, and are not fundamentally different from the uses allowed by the existing exemption.⁷³ Proponents noted the Copyright Act's special preference for nonprofit educational uses.⁷⁴ Courts also favor the work if it is in any way transformative—especially for the purposes of criticism, comment and teaching.⁷⁵ For example, professors have

⁶⁹ We note that due to the unique use, users, and specific limitations for using this proposed exemption, NTIA recommends that this exemption, were it to be granted, be a separate subpart from the other education uses under Class 1 despite BYU advocating that the Copyright Office collapse all of the education exemptions and include this new part. *See e.g.*, April 11 Transcript at 247. We do not believe a complete consolidation of all of the educational exemptions is warranted in this round. This could be one approach to bring the simplicity desired by all parties to the exemptions but would permit a new use separate from the larger educational exemption discussed above.

⁷⁰ BYU Class 1 Comments at 2, 4. Opponents argue that playback of media does not require circumvention. DVD CCA Class 1 Opposition Comments, at 9-13; Joint Creators II Class 1 Opposition Comments, at 19-24. NTIA agrees that if playback were the only issue here and optical drives remain available then no circumvention is necessary. However, with the obsolescence of optical drives in classrooms and on computers then playback from a central location cannot be accomplished.

⁷¹ BYU Class 1 Comments, at 4.

⁷² *See* 17 U.S.C. § 107. We note that BYU emphasized teaching activities as contemplated by the TEACH Act, which does not provide a condition for criticism and comment in order to simplify the exemptions generally. However, the uses described in their testimony for this proposed exemption noted that these are the types of transformative uses of the proposed exemption. *See* April 11 Hearing Transcript at 279-280.

⁷³ BYU Class 1 Comments, at 1-5.

⁷⁴ *See* 17 U.S.C. § 1201(a)(1)(C)(ii)-(iii); BYU Class 1 Reply Comments, at 6; April 11 Hearing Transcript, at 224-25, 235-36.

⁷⁵ *Authors Guild, Inc. v. Google, Inc.*, 804 F.3d 202, 216 (2d Cir. 2015) (“Notwithstanding that the libraries had downloaded and stored complete digital copies of entire books . . . such copying was essential to permit searchers to identify and locate the books in which words or phrases of interest to them appeared. [The creation of this full-text searchable database] is a quintessentially transformative use . . .” (citing *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87 (2d Cir. 2014))).

requested certain customization of the playback features such as using foreign language translation, to include comments, annotations, questions, etc. to enhance the classroom experience and discussion, all of which would be transformative of the original work.⁷⁶ Then as the university makes the work available for examination in the classroom, it is fulfilling the intended purpose of copyright law without significantly interfering with the rights of the copyright holder.⁷⁷ Accordingly, the first fair use factor favors proponents.⁷⁸

Under the fourth fair use factor, proponents have persuasively argued that the proposed exemption would likely not harm the market for copyrighted works. Opponents raised concerns that granting this exemption to universities for this activity would encourage infringement.⁷⁹ This concern seems unfounded, as the proposal would not allow personal or private performances of the motion pictures.⁸⁰ BYU appropriately recommended that the language of this exemption be guided by Section 110(1) of the TEACH Act, which allows, among other things, the performance only in “face to face teaching activities. . . in a classroom or a similar place devoted to such instruction.”⁸¹ NTIA believes that these limitations would mitigate any potential harm to the content owners. This too favors a finding of fair use.

Opponents further raised concerns that the proposed exemption includes copying the entire work to the server hosted by the university.⁸² BYU asserts that the TEACH Act provisions permit use of the entire work for educational purposes as long as the use follows the TEACH Act limitations.⁸³ As an example, BYU would like to play entire films or relevant

⁷⁶ BYU Class 1 Comments, at 4-5.

⁷⁷ *Google, Inc.*, 804 F.3d at 216. We should note here that the court held that how much of the work was made available to the researchers was important so as to not interfere with rights of the copyright holder. Indeed here, BYU is not asserting that it is giving copies to the class members or the instructor, but that this is only available to view in the classroom in the quantities necessary for the instructor’s purposes. See BYU Class 1 Comments, at 4-5 (“Instructors have requested the ability to queue up a series of clips from a film and add comments, annotations, interactions, questions, or other customizations . . .”).

⁷⁸ Under the second fair use factor, or nature of the copyrighted w

portions thereof in its foreign language courses without needing individual optical drives in every classroom.⁸⁴ BYU further asserts that copying the entire copies of a work to the centralized server would be fair use based upon two recent analogous cases.⁸⁵ Importantly, the court in one of those cases noted that fair use protects copyright's very purpose by permitting unauthorized copying in certain cases "to further copyright's very purpose, [t]o promote the Progress of Science and useful Arts."⁸⁶ Furthermore, these courts held that it might be necessary to copy the entire copyrighted work, such as to enable full-text searches of books.⁸⁷ The court in *HathiTrust* found that copying was not excessive in relation to the intended use or that the user took no more than was necessary for the use. The court held that it was essential for a finding of fair use that, while the user needed to copy the entire book to permit the search, public access to the entire work was limited to viewing short snippets in response to an Internet search.⁸⁸

While the scenario is different here, the balance the court applied still swings in the university's favor. The university would copy and store the entire work on the university closed server system to facilitate the wide variety of uses possible in the classroom including playing the entire work in a face to face instructional setting, as envisioned under the TEACH Act. However, the entire work would not be available for viewing in dorm rooms or via the Internet, and therefore the proposed exemption would curb the risk of infringement.⁸⁹ The Section 1201 regulations could meet all of the instructor's needs – from providing short portions, to foreign language versions to the entire work for examination, comment, criticism, and teaching in the classroom. None of these is excessive because the entire work is not available outside of this closed system.

Further, no reasonable alternative to circumvention exists. Opponents argued that proponents could continue to purchase and maintain equipment as a reasonable alternative to circumvention.⁹⁰ Proponents argued that equipment that universities are purchasing no longer includes optical drives such as DVD drives that are required to play certain audiovisual works in the classrooms.⁹¹ Further, universities are not budgeting (and should not have to budget) for the

longer makes sense and Section 110(1) does not limit the quantity that may be used for face to face classroom performances.

⁸⁴ BYU Class 1 Comments, at 3-4. The TEACH Act requirements that proponents reference do not contain a length limitation. See BYU Class 1 Comments, at 3; April 11 Hearing Transcript, at 206.

⁸⁵ BYU Class 1 Comments, at 4 (citing *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87 (2d Cir. 2014) and *Author's Guild, Inc. v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015); April 11 Hearing Transcript, at 233-234.

⁸⁶ *Google*, 804 F.3d at 211 (internal citation omitted).

⁸⁷ *HathiTrust*, 755 F.3d 87, 98 (2d Cir. 2014).

⁸⁸ *Id.*

⁸⁹ See April 11 Transcript at 235-236. BYU asserted that the use would not qualify for this exemption if it was shown to a student club, but would require a license, thus distinguishing educational uses contemplated by the TEACH Act as non-infringing from other uses that would not.

⁹⁰ DVD CCA Class 1 Opposition Comments, at 37-41; Joint Creators II Class 1 Opposition Comments, at 25-26; April 11 Hearing Transcript, at 251, 266-67.

⁹¹ BYU First Round Comments at 3-4; April 11 Hearing Transcript, at 260-61; Class 1 Reply Comments of Public Knowledge (PK Class 1 Reply Comments) at 2-3, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_PK.pdf.

continued upkeep of equipment that is becoming obsolete.⁹² Public Knowledge provides further evidence on the record on this issue pointing to the fact that computer manufacturers have all but discontinued providing optical drives with their new systems.⁹³

NTIA concurs with proponents' assertions that the market is shifting away from optical drives and further believes that the Register and Librarian should support innovative solutions to allow continued access to university-owned audiovisual works for classroom instruction, as they have in the past.⁹⁴ With regard to arguments that proponents should continue to make significant investments in legacy equipment, NTIA has stated in past proceedings that requirements that a user spend (sometimes significant) amounts of money to purchase or maintain equipment do not amount to legitimate alternatives to circumvention.⁹⁵ That is the case here.

Opponents also argued that most current titles offer an authorized digital copy of the work with purchase of the physical media that proponents could use for transmissions or load into the central servers.⁹⁶ While this may be the case for many current titles, older films and specialized versions of films, such as those that include foreign language translations, do not always include these digital copies or include these features. Thus, availability of some authorized digital copies would not satisfy all of proponents' needs. NTIA believes a reasonable limitation would be to bar circumvention where a university already possesses a digital copy of a work unless one of these specialized needs are not met by the digital copy available to the university. We note that it was clear from the record that in some instances the digital copy and streaming services do not include certain features such as various foreign language translations of the work, which may be only available on the direct playback or after breaking the encryption.⁹⁷

⁹² April 11 Hearing Transcript, at 256-58, 269-72.

⁹³ PK Class 1 Reply Comments, at 2-3. In fact, this is not a new trend in the marketplace as software providers were impacted as far back as 2012 when declining use of optical drives forced Microsoft to change its support practices for the DVD playback function, for example. Further testimony pointed out that at a high school, a teacher took 30 minutes before locating a DVD player as schools are moving to one-to-one laptops or Chromebooks. April 11 Hearing Transcript at 272-273.

⁹⁴ See, e.g., Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Docket No. RM 2005-11, Final Rule, 71 Fed. Reg. 68472, 68474 (Nov. 27, 2006) (2006 Final Rule), <https://www.gpo.gov/fdsys/pkg/FR-2006-11-27/pdf/E6-20029.pdf>; see also BYU Class 1 Reply Comments, at 7-8 (presenting evidence of DVD and Blu-Ray's declining market shares).

⁹⁵ See e.g., NTIA 2015 Letter, at 38; see also April 11 Hearing Transcript, at 271-272 (BYU presented a DVD player that had been available for many years and used bar codes, for which BYU had developed an instruction manual – however, the player is no longer available on the market).

⁹⁶ See April 11 Hearing Transcript at 250, 263-264. We note importantly that testimony proffered by the content community suggested that they would not have issue with downloading a digital copy for use by the university from existing media library resources.

⁹⁷ Universities such as BYU routinely use these versions in classroom instruction. See *id.* This included a demonstration and a discussion to play an entire film in a French class. Furthermore, BYU talked about a current title, *Moana*, where it is using it for instructions in Tahitian, for example, which is not available other than on the DVD. BYU asserted that there are many examples where other services such as Vudu and Netflix cannot be alternative sources of what is needed by the instructor. April 11 Hearing Transcript

Further, NTIA made it a point in the hearings to seek more information regarding whether the industry currently provides licenses for the types of services the universities are seeking. Opponents stated that no current institutional licensing services were available to the best of their knowledge.⁹⁸ Further, as for streaming services, the record does not show evidence of licenses available for educational purposes.⁹⁹

As noted above, NTIA believes the Copyright Office should consider the TEACH Act as a guide when determining the parameters for this proposed exemption. In doing so, the proposed exemption would comply with current case law discussed above and avoid proponents asserted adverse effects while protecting copyright holders' rights. BYU proposed that the exemption include in its entirety the requirements of Section 110(1) to avoid the risk of infringement. This section reads as follows:

Notwithstanding the provisions of section 106, the following are not infringements of copyright: (1) performance or display of a work by instructors or pupils in the course of face-to-face teaching activities of a nonprofit educational institution, in a classroom or similar place devoted to instruction, unless, in the case of a motion picture or other audiovisual work, the performance, or display of individual images, is given by means of a copy that was not lawfully made under this title, and that the

the person who is responsible for the performance have some responsibility to determine whether the performance is of a lawfully made copy. To assist universities with this limitation, NTIA believes it is prudent that (as suggested by BYU) a university intellectual rights office and/or general counsel's office should supervise this entire process. Such supervision would ensure the copyright holders' rights are preserved, and that only lawfully made copies are included in the secured digital copies available for performance in the classrooms.¹⁰²

NTIA also notes that an appropriate limitation, were this exemption granted, is that the university only perform a limited number of the work at a time, as determined by how many individual copies of the work the university has lawfully acquired.¹⁰³ This will eliminate the potential broadcast of the work to multiple classrooms at the same time and cabins the use by the university to the extent of their rights to use the work and not beyond.¹⁰⁴ While the TEACH Act authorizes performance in the classroom, it does not permit the performance beyond the rights of the copyright holder.¹⁰⁵

In addition, NTIA concurs with BYU that additional language from Section 110(2) serves as an appropriate guide to further limitations that the Librarian should place on this exemption to protect the rights of the copyright holder, as entire copies of the work will be stored on their servers. To alleviate any confusion as many of the sections of 110(2) are not directly applicable to BYU's proposed use (or this modified version), NTIA suggests the following limitations be included in this exemption if the Copyright Office is inclined to recommend this exemption:¹⁰⁶

1. Supervision of university intellectual property offices or general counsel
2. Limited to nonprofit universities and colleges
3. Copies of the work be stored on a closed university secured central server
4. Transmission is only to university classrooms
5. Only for face to face teaching activities
6. Section 110(2)(D)(ii)(I) limitations on retention & dissemination at the performance location
7. Must use digital copies available at the university or in the marketplace if needed content is included in the digital copy
8. Must use industry licenses of the copy of the work if available

Copyright Office inclined to recommend this exemption, that it stand alone as a new exemption and not be combined with the other educational exemptions or include all educational users at this time.

¹⁰² See 17 U.S.C. § 110(1).

¹⁰³ For example, the university library may have acquired 20 DVDs of the same work. It would be entirely appropriate to load all 20 copies. However, the university could only grant access to 20 copies at a time. This tracks current limitations on libraries use allowing digital checkouts of the number of works they have available in their system.

¹⁰⁴ For example, the university may not broadcast the motion picture to multiple classrooms and charge admissions, as if it were a theatre.

¹⁰⁵ See 17 U.S.C. § 110(1).

¹⁰⁶ NTIA understands that BYU may have proposed generally to use their proposed exemption for both face to face classroom teaching and for the sort of distance learning contemplated in 110(2). However, the record here is largely about use in the classroom and the record is not made for the entire work to be used in distance learning situations. MOOCs are covered in another section and NTIA believes should remain within the short portion educational exemptions.

9. Limit performance to only one at a time to one classroom at a time.

NTIA Recommendation for Class 1 (BYU – Educational Uses): Having analyzed the record, NTIA believes that modifying the education exemption as BYU has requested will not affect the market value of copyrighted works, and will provide relief from the harm proponents have demonstrated. Accordingly, if the Copyright Office were to recommend proceeding with this proposal that it adopt BYU’s proposed exemption language with the following modifications:

Motion Pictures (including television shows and video), as defined in 17 U.S.C. § 101, where circumvention is undertaken solely in order to facilitate non-infringing performances of the works in face to face teaching activities, including criticism and comment, by accredited nonprofit universities and colleges and where circumvention is undertaken under the supervision or direction of university intellectual property rights offices, general counsel or their equivalent and the resulting copy is stored in a central secured server available only for transmission to the institution’s classrooms and in accordance with 17 U.S.C. § 110(2)(D)(ii)(I), is limited to performance of only one copy of the work at a time, and copies are not made if a digital copy is available at the university or in the marketplace and this copy contains the needed content or is otherwise licensed by the copyright holder for use by the university.

Online Courses

Joint Educators proposed broadening the current MOOC exemption to apply to all online learning opportunities and removing restrictions imported from the TEACH Act.¹⁰⁷ Joint Educators argued that the modified exemption would spur innovation and variety in educational offerings.¹⁰⁸

NTIA Position: NTIA recommends granting a limited modification to the exemption for Class 1: Audiovisual Works—Criticism and Comment (Online Courses).

Analysis: Proponents have made the case that the uses at issue would be non-infringing and would likely be fair uses.¹⁰⁹ NTIA believes that the uses described are similar to those allowed by the current exemption. In 2015, the Register and Librarian concluded that using short portions of an audiovisual work in a MOOC requiring close analysis of that work is a fair use.¹¹⁰

¹⁰⁷ See Class 1 Comments of Joint Educators (Joint Educators Class 1 Comments) at 2-4, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class1/class-01-initialcomments-joint-educators.pdf> (discussing the current exemption’s requirement that a course be offered by an “accredited nonprofit” educational institution, per the TEACH Act).

¹⁰⁸ *Id.* at 5-8.

¹⁰⁹ See 17 U.S.C. § 107.

¹¹⁰ 2015 Final Rule, 80 Fed. Reg. at 65948-49.

The purpose and character of the use is educational and transformative, which favors a finding of fair use. While the contemplated uses would be more varied than the current exemption allows, they would all likely be transformative educational uses.¹¹¹ The second factor likely weighs slightly against fair use and the third factor likely weighs in favor of fair use.¹¹² The amount and substantiality of the work used is a “short portion” under the current exemption.¹¹³ Under the fourth factor, proponents have made persuasive arguments that the proposed exemption would likely not harm the market for the copyrighted work. As proponents note, short clips extracted for educational purposes do not substitute for the entire original work in the marketplace.¹¹⁴ As with the current MOOC exemption, NTIA believes that there is little likelihood of market harm here, so the fourth factor favors fair use. Thus, NTIA believes the requested uses are likely fair uses, and thus non-infringing.

Proponents assert that the prohibition on using audiovisual works in online courses that do not involve film analysis adversely affects them. While the TEACH Act can provide useful guidance, NTIA believes that proponents have presented sufficient evidence to remove certain TEACH Act guidelines from the online courses exemption. The proponents provide evidence from the last three years that the online educational market has grown significantly.¹¹⁵ Further, the incorporation of audiovisual materials in these courses provides benefits to students regardless of the subject matter of the course.¹¹⁶ The proposed expansion would benefit students at all levels through distance and online learning in all subjects.

NTIA believes that there is sufficient evidence in the record to expand the exemption beyond non-profit educational institutions – the record shows examples of legitimate educational uses by accredited for-profit educational institutions, such as the University of Phoenix, Strayer

¹¹¹ See Joint Educators Class 1 Comments at 11. Opponents argue that for-profit uses are evaluated differently than non-profit uses in a fair use analysis. DVD CCA Class 1 Opposition Comments, at 32. However, as proponents note, even a commercial use may be a fair use. See Joint Educators Class 1 Comments, at 11 (citing *Campbell v. Acuff-Rose*, 510 U.S. 569, 584-85 (1994)). Where an educator is critiquing or commenting on a work for educational purposes (even in a for-profit setting), the use is likely transformative, and thus favored under the first factor.

¹¹² There is not a great deal of evidence in the record discussing the nature of the work, but the movies and television shows proponents would likely use tend to be closer to the core of copyright protection than something like a news report. See *Campbell*, 510 U.S. at 586. This would weigh slightly against a finding of fair use.

¹¹³ NTIA recommends maintaining the limitation of using short portions. This limitation ensures the amount used is minimal, so the third factor weighs in favor of fair use.

¹¹⁴ See Joint Educators Class 1 Comments, at 12-13. As Jonathan Band noted at the hearing, someone seeking out the film *Casablanca* in its entirety would likely not be satisfied with the minutes-long clip embedded in Professor Decherney’s MOOC. April 11 Hearing Transcript, at 285. If the educational use is likely transformative, this is further evidence against a potential market substitution effect. See Joint Educators Class 1 Comments, at 12.

¹¹⁵ *Id.* at 1-2, 5-6.

¹¹⁶ *Id.* at 7. For example, Professor Oliver Knill, of the Harvard University Department of Mathematics, uses clips from popular programs to teach math concepts.

University, and Full Sail University.¹¹⁷ In the hearing, Professor Decherney discussed his interactions with the head of online programming for Duke University's MBA program. He stated that there were MOOC lectures that Duke could make available to certain students under the current exemption, but not to students enrolled in its executive education courses (operated by a for-profit entity).¹¹⁸ Opponents countered that none of these entities participated in this proceeding.¹¹⁹ While true, participation by these entities is not required to show a likelihood of adverse effects. NTIA believes that, weighing the evidence as a whole, proponents have submitted enough evidence on this point to show that the TEACH Act's nonprofit requirement has had (and will likely continue to have) an adverse effect on these potential users.

NTIA believes that the accreditation requirement of the TEACH Act retains value in this context, and we do not believe that there is sufficient evidence in the record in this proceeding to remove this requirement from the exemption. Proponents did present evidence about Khan Academy (an unaccredited, nonprofit institution) and the valuable courses that it makes available online.¹²⁰ However, NTIA takes seriously opponents' arguments that the record must support any modification to the exemption.¹²¹ Given the relative lack of examples of unaccredited educational institutions adversely affected by the prohibition, at this time NTIA believes that it would be prudent to retain the accreditation requirement.

NTIA also believes that the Librarian should maintain the requirement that online courses require enrollment. NTIA believes it is important to state clearly that the current exemption incorporating that requirement covers any student enrolled in the course at issue, not merely students enrolled at the institution that created that course.¹²² NTIA's proposed exemption text clarifies this requirement by following the TEACH Act text more closely. Lastly, the modified exemption should maintain the explicit restriction on unauthorized distribution of the clips

¹¹⁷ Joint Educators Class 1 Comments at 2, 8; Class 1 Reply Comments of Joint Educators (Joint Educators Class 1 Reply Comments) at 7, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_Joint_Educators.pdf; April 11 Hearing Transcript, at 291-292. Though sections 107 and 110(2) refer to non-profit educational purposes, NTIA believes the record supports expanding the exemption beyond nonprofit educational institutions in this instance.

¹¹⁸ April 11 Hearing Transcript, at 291.

¹¹⁹ DVD CCA Class 1 Opposition Comments, at 31.

¹²⁰ Joint Educators Class 1 Comments, at 7-8.

¹²¹ DVD CCA Class 1 Opposition Comments, at 31-33; April 11 Hearing Transcript, at 293.

¹²² While opponents dispute this conclusion, NTIA believes that the Copyright Office made that clear in its analysis in its 2015 Recommendation. *Compare* Class 1 Reply Comments of Joint Creators II (Joint Creators II Class 1 Reply Comments) at 19-20, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class1/Class_01_Opp'n_Joint_Creators_II.pdf, and April 11 Hearing Transcript, at 298-301, with U.S. Copyright Office, *Section 1201 Rulemaking: Sixth Triennial Proceeding to Determine Exemptions to the Prohibition on Circumvention, Recommendation of the Register of Copyrights*, at 74, 102 (Oct. 2015) [hereinafter 2015 Register's Recommendation], <https://www.copyright.gov/1201/2015/registers-recommendation.pdf>.

provided in the courses. The modified exemption should also maintain the requirement to make copyright policies and information available to relevant faculty, students, and staff.¹²³

NTIA Recommendation for Class 1 (Online Courses): NTIA supports modifying the MOOC exemption and recommends that the Librarian adopt the following exemption language:

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, comment, or teaching by faculty of online courses offered by accredited educational institutions to students officially enrolled in those courses through online platforms where the course provider through the online platform:

- (a) limits transmissions to the extent technologically feasible to such officially enrolled students,
- (b) institutes copyright policies and provides copyright informational materials to faculty, students and relevant staff members, and
- (c) 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.

Screen Capture

The current exemption for use of short portions of audiovisual works requires that someone use screen capture technology to circumvent or reasonably believe that screen capture technology is unable to produce the required level of high quality content.¹²⁴ Several petitioners requested removing references to screen-capture technology in Class 1 or clarification that the use of screen capture technology does not constitute circumvention.¹²⁵

¹²³ At the hearing on this class and in the comments, the parties agreed that maintaining these TEACH Act requirement would be acceptable. *See* Joint Educators Class 1 Reply Comments, at 6-7; DVD CCA Class 1 Opposition Comments, at 35; April 11 Hearing Transcript, at 283-284, 295.

¹²⁴ 37 C.F.R. § 201.40(b)(1). The references to screen capture are in virtually every subsection of (b)(1) including the following: (i)(A), (ii)(A), (iii)(A), (iv)(A), (v)(A), (vi)(A), (i)(B), (ii)(B), (iii)(B), (iv)(B), (v)(B), and (vi)(B).

¹²⁵ Authors Alliance requested removing references to screen-capture technology in the e-book exemption. *See generally* Authors Alliance Class 1 Comments, at 1. NTIA notes that while the joint proposal submitted by EFF, New Media Rights and Organization for Transformative Works, does not mention eliminating the requirements for screen capture, their proposal to simplify Class 1 essentially does just that. *See* EFF Joint Petition, at 3. Film Independent, International Documentary Association, and Kartemquin Educational Films jointly sought elimination of the screen-capture requirement for documentary filmmaking. *See* Class 1 Petition of Film Independent, *et al.* (Film Independent Class 1 Petition), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class1/class-01-newpetition-fi-ida-kef.pdf>. Brigham Young University advocated the removal of all references to screen-

NTIA Position: NTIA recommends removing all references to screen capture technology in Class 1. NTIA believes that proponents have made the necessary statutory showing to merit elimination of the screen-capture requirements, and that removal would greatly simplify the exemption.¹²⁶

Analysis: Section 1201 requires the Librarian to consider specific exemptions, but it does not require the Librarian to dictate the preferred means of circumvention.¹²⁷ The references to screen capture technology are confusing and contradictory. For example, it is unclear whether screen capture software is an alternative to circumvention or is an authorized circumvention.¹²⁸ NTIA does not take a position either way here, as this has never been clearly resolved on the record and will likely depend upon the particular software at issue.¹²⁹ If screen capture is not circumvention, it does not implicate Section 1201 and has no place in the regulation. If screen capture is circumvention, a legitimate user may choose whether to use screen capture based on her particular circumstances.¹³⁰ Therefore, it is unnecessary for the Librarian to refer to screen capture.

capture for educational uses. BYU Class 1 Comments at 5. Electronic Frontier Foundation argued for eliminating the screen-capture requirement for all Class 1 uses to help make the exemption simpler and more user-friendly, removing “arbitrary barriers and traps for the unwary.” EFF Class 1 Comments at 5.¹²⁶ NTIA reiterates and expands its previous position on use of screen capture based upon the record presented. 2015 NTIA Letter, at 15-17. For example, NTIA stated in 2015: “Screen capture technology, despite its limitations, may be sufficient in certain circumstances. However, screen capture and other alternatives to circumvention are not sufficient to meet all of the needs of teachers and students contemplated on the record.” *Id.* at 17.

¹²⁷ BYU Class 1 Reply Comments, at 5. Nowhere else do the current exemptions specify a method of circumvention, let alone require its use or require that users consider using it. *See generally* 37 C.F.R. § 201.40(b)(2)-(10).

¹²⁸ Compare 37 C.F.R. § 201.40(b)(1)(i)(A) (“circumvention is undertaken using screen-capture technology”), with 37 C.F.R. § 201.40(b)(1)(i)(B) (“screen-capture software or other non-circumventing alternatives”).

¹²⁹ The record has never been clear whether each screen-capture technology examined is or is not circumvention. In the end, this matters little. Once the Librarian has granted an exemption, the authorized user may appropriately select the circumvention best suited for their project. This may for some be screen-capture. For others screen-capture will be inadequate. If it is an alternative to circumvention, screen capture may always be used regardless. Both obviate the need to even mention screen-capture in the regulations. *See*, BYU Class 1 Reply Comments, at 5-6 (the current contradictory regulatory text adds to the confusion whether the Librarian considers screen-capture software as non-circumvention).

¹³⁰ The record reveals screen capture may be adequate in certain circumstances. *See generally* DVD CCA AACS LA Post Hearing Comments, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/post-hearing/answers/Class%201%20post-hearing%20response%20>

By eliminating all references to screen-capture in Class 1, the Librarian would simplify the exemption. Students, filmmakers, and e-book authors will be able to make effective use of the exemption.¹³¹ Proponents demonstrated that screen capture produces poor quality clips that are often unusable.¹³²

NTIA Recommendation for Class 1 (Screen Capture): NTIA recommends that the Librarian remove all references to screen capture in Class 1.

Class 2 – Audiovisual Works – Accessibility

No current exemption allows for circumvention of TPMs on audiovisual works for accessibility purposes. The Association of Transcribers and Speech-to-Text Providers (ATSP), the Association of Research Libraries (ARL), the Association of College and Research Libraries (ARCL), and the Association on Higher Education and Disability (AHEAD) have proposed the following exemption:

For disability services officers, organizations that support people with disabilities, libraries, and other units at educational institutions that are responsible for fulfilling those institutions' legal and ethical obligations to make works accessible to people with disabilities to circumvent technological protection measures for motion pictures (including television shows and videos), where circumvention is undertaken for the purpose of making a motion picture accessible to people with disabilities, including through the provision of closed and open captions and audio description.¹³³

¹³¹ See *BYU Class 1 Comments*, at 6. The current exemption requires the use of screen-capture in some circumstances and not others, and often requires the user to determine whether screen-capture will work before trying or using any other method of circumvention.

¹³² See *Class 1 Reply Comments of Authors Alliance, et al.* (Authors Alliance Class 1 Reply Comments) at 17, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class1/Class_01_Reply_Authors_Alliance_et_al_.pdf; *Class 1 Petition of Authors Alliance, et al.* (Authors Alliance Class 1 Petition) at 24, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class1/class-01-newpetition-authors-alliance-et-al.pdf>. Joint Authors asserted that the “content and quality of captured material are significantly worse than that of material obtained through circumvention.” Authors Alliance Class 1 Reply Comments, at 17. Joint Filmmakers again asserted in this proceeding that “screen-capture software programs. . . create dropped frames and loss of audio sync, among other defects.” Joint Filmmakers Class 1 Comments, at 21; see also *EFF Class 1 Comments*, at 8. But see *DVD CCA Class 1 Comments*, at 37-39. Although opponents disputed concerns about the lack of quality, NTIA believes that proponents have rebutted opponents' arguments. Screen capture also comes at an increased cost, which may be an adverse effect on users. See *Joint Filmmakers Class 1 Comments*, at 21.

¹³³ See *Class 2 Petition of the Association of Transcribers and Speech-to-Text Providers (ATSP), et al.* (ATSP Class 2 Petition) at 3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class2/class-02-newpetition-attp-et-al.pdf>. Free Software Foundation, Inc. (FSF) also submitted comments in support of this exemption. See *Class 2 Comments of Free Software Foundation, Inc. (FSF Class 2 Comments)*, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class2/class-02-initialcomments-fsf.pdf>. Proponents also argued that educational institutions should be able to take proactive accessibility efforts. See *Class 2 Post-Hearing Response of the ATSP, et*

NTIA position: NTIA recommends adopting a new exemption – that covers both higher education and K-12 schools – because the prohibition on circumvention adversely affects all disabled students and disability service offices.¹³⁴

Analysis: The proposed exemption would allow users to circumvent TPMs on audiovisual works in educational settings to add accessibility features.¹³⁵ Proponents suggested users of the proposed exemption would be disability rights offices at colleges and universities, and the beneficiaries of the proposed exemption would be students with disabilities.¹³⁶ At the hearing and in post-hearing questions, the Copyright Office posed questions regarding the applicability of the proposed exemption to K-12 schools and asked about the definition of “individuals with disabilities.”¹³⁷

Opponents argued that the petition was vague and the record failed to demonstrate a finding of fair use.¹³⁸ In reply comments and at the hearing, proponents clarified the scope of the

al. (ATSP Class 2 Post-Hearing Response) at 4, Docket No. 2017-10, https://www.copyright.gov/1201/2018/post-hearing/answers/Class%202%20post-hearing%20response%20--%20ATSP_LCA.pdf (proactive efforts should be allowed “to comply with the terms of a settlement of a disability law claim, to meet in advance the terms of an Individual Education Plan for a student with a disability, or simply on the institution’s own ethical initiative.”); *see also* Transcript, Hearing on Exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 – Digital Millennium Copyright Act, at 55-56 (Apr. 12, 2018) (April 12 Hearing Transcript), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-12-2018.pdf>. NTIA believes that proactive accessibility is a noble goal but the record does not support it at this time. NTIA would like to see more information regarding when and how the user would circumvent the original work, and when, and to whom, the user would make the newly accessible work available. Therefore, NTIA recommends allowing circumvention upon request, but not allowing it proactively at this time.

¹³⁴ NTIA has a long history of supporting exemptions that have resulted in increased accessibility features. Specifically, NTIA has recommended allowing circumvention of TPMs on literary works for the use of assistive technologies for the blind in each triennial rulemaking proceeding since 2003. U.S. Copyright Office, *Recommendation of the Register of Copyrights in RM 2002-4; Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, at 64 (Oct. 27, 2003) (2003 Register’s Recommendation), <https://www.copyright.gov/1201/docs/registers-recommendation.pdf>. In 2012, NTIA also supported a unique exemption related to improved accessibility for audiovisual works. *See* 2012 NTIA Letter; *see also* 2015 Final Rule, 80 Fed. Reg. 65944 (showing that the exemption expired because no petitioners requested to renew it in the 2015 triennial proceeding).

¹³⁵ *See* Class 2 Comments of ATSP, *et al.* (ATSP Class 2 Comments) at 3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class2/class-02-initialcomments-atsp-et-al.pdf>.

¹³⁶ *See id.* at 1-2; *see also* April 12 Hearing Transcript, at 57-58.

¹³⁷ Class 2 Post-Hearing Witness Questions of U.S. Copyright Office (USCO Class 2 Post-Hearing Witness Questions) at 1-2 (May 21, 2018), <https://www.copyright.gov/1201/2018/post-hearing/Proposed%20Class%202%20-%20post-hearing%20letter.pdf>.

¹³⁸ *See* Class 2 Opposition Comments of Joint Creators I (Joint Creators I Class 2 Opposition Comments, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class2/Class_02_Opp'n_Joint_Creators_I.pdf).

proposed exemption, which would include a limitation to works lawfully obtained by the educational institution. Disability rights offices would only use the exemption at the request of: (1) disabled students, or (2) professors who teach disabled students.¹³⁹

Proponents have demonstrated that the proposed class includes copyrighted works protected by TPMs.¹⁴⁰ Proponents have suggested two methods of circumvention: (1) trained disability service officers would circumvent in-house, or (2) a commercial vendor would circumvent on behalf of the educational institution.¹⁴¹ The user of the proposed exemption would be disability rights offices or the equivalent at schools, or vendors under contract with these offices. At the hearing, proponents demonstrated that both non-profit and for profit institutions are subject to legal and ethical obligations to make works accessible for students with disabilities.¹⁴² As a result, NTIA recommends that the Librarian refrain from limiting the exemption to non-profit educational institutions.

Upon request by a student with a disability or a professor teaching a class to a student or students with disabilities, the school would make available the newly created accessible work to that particular student or professor.¹⁴³ The disability rights office would import the video player into a private distribution network, such as Blackboard Learn. The student with disabilities would log in to the network using a password-protected account. Once logged in, the student could view the newly accessible video.¹⁴⁴ Opponents raised concerns that the scope of dissemination allowed by the proposed exemption is unclear.¹⁴⁵ NTIA is satisfied that the proposed exemption would not serve as a platform for the creation or dissemination of

¹³⁹ See e.g., Class 2 Reply Comments of ATSP (ATSP Class 2 Reply Comments) at 11-12, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class2/Class_02_Reply_ASTP_et_al_.pdf.

¹⁴⁰ See ATSP Class 2 Comments, at 5. Proponents identified varied formats of protected audiovisual works, including Digital Versatile Discs, Blu-ray discs, and online streaming services. Proponents identified varied formats of protected audiovisual works, including Digital Versatile Discs, Blu-ray discs, and online streaming services. See *id.* at 5-7 (for example, copyright holders encrypt DVDs using a Content Scramble System, Blu-rays using an Advanced Access Content System, and may encrypt online content through Adobe Flash).

¹⁴¹ See *id.* at 12-13; see also April 12 Hearing Transcript, at 60-61. At the hearing, proponents described the process for circumventing a video to add captions using MovieCaptioner. With the MovieCaptioner software, a transcriber would manually type subtitles and synchronize time codes into a subtitle file. The transcriber would then attach the subtitle file to the video file and combine the two attached files in a video player. See April 12 Hearing Transcript, at 7-17. The process is similar for audio description, with two files combined into one. See *id.* at 18-20.

¹⁴² See *id.* at 60.

¹⁴³ See ATSP Class 2 Reply Comments, at 13; see also April 12 Hearing Transcript, at 40.

¹⁴⁴ See April 12 Hearing Transcript, at 17-18. For example, proponents stated at the hearing that they are “providing the accessible time text captioning file for those that need it.” *Id.* at 21. Proponents clarified that the newly accessible video would be available to particular students with disabilities who need it and for professors to show it to a classroom, allowing any students with disabilities to follow along in class as the professor plays the video. See *id.* at 21-23. We note similarities with the BYU proposal discussed above. The reasoning is similar as are the appropriate limitations for these two proposed exemptions.

¹⁴⁵ See Joint Creators I Class 2 Opposition Comments, at 4.

circumvention tools.¹⁴⁶ Furthermore, at the hearing, proponents made clear that the exemption does not contemplate public distribution of the newly accessible videos.¹⁴⁷

accessible for students with disabilities would not affect the market for the work.¹⁵⁴ Proponents have demonstrated that the market for retroactively adding accessibility features to films is nearly non-existent.¹⁵⁵ NTIA believes that allowing disability service providers to add captioning and audio description for works that are unavailable in an accessible format would not have an effect on the market.

Proponents have demonstrated that the prohibition on circumvention adversely affects or is likely to adversely affect disabled students and disability service offices at schools.¹⁵⁶ Disability service officers must provide digital work accessibility to disabled students upon request.¹⁵⁷ The prohibition on circumvention often hamstrings disability service officers' efforts to comply with the various laws providing for accessibility.¹⁵⁸ The proposed exemption would allow educational institutions to carry out their legal responsibility to ensure equal access to educational materials for disabled students.

The accessible videos resulting from the proposed exemption would be available only in an educational context. For instance, if a student requests an accessible video, the disability rights office would determine the student's accommodations, determine if the student is eligible for closed captioning, and ascertain whether the student needs the content for his or her course. If the student's request satisfies those criteria, then the disabilities rights office would circumvent TPMs to make an accessible video.¹⁵⁹

The Section 1201 statutory factors favor the proposed exemption.¹⁶⁰ Proponents have demonstrated that the proposed exemption would make an increased amount of copyrighted works available to disabled persons.¹⁶¹ The proposed exemption would increase availability of copyrighted works for education, as disabled students would have increased access to works for

¹⁵⁴ See ATSP Class 2 Comments, at 11-12; April 12 Hearing Transcript, at 29-30.

¹⁵⁵ See ATSP Class 2 Comments, at 11-13; ATSP Class 2 Reply Comments, at 18; *see also* April 12 Hearing Transcript, at 40.

¹⁵⁶ See ATSP Class 2 Comments, at 2, 14.

¹⁵⁷ See Americans with Disabilities Act, 42 U.S.C. §§ 12101-12103; Individuals with Disabilities Education Act, 20 U.S.C §§ 1400-1491; Rehabilitation Act, 29 U.S.C. § 701; *see also* ATSP Class 2 Comments, at 2; ATSP Class 2 Reply Comments, at 5 (existence of anti-discrimination laws demonstrates a desire to give disabled students an equal opportunity in the educational setting). These laws apply regardless of whether a work is protected by a TPM.

¹⁵⁸ See ATSP Class 2 Comments, at 4, 15 (educational institutions may face liability if disability service providers fail to provide accessibility to disabled students).

¹⁵⁹ See April 12 Hearing Transcript, at 50-52. A similar procedure would apply to professors who teach students with disabilities. If a student or professor asks the office to add accessibility features to a video for personal or entertainment purposes, then the office would reject the request.

¹⁶⁰ See ATSP Class 2 Comments, at 13. *See also* 2015 Register Recommendation at 135 (in the 2015 rulemaking the Librarian found that all five factors strongly favor an exemption to facilitate assistive technologies).

¹⁶¹ See ATSP Class 2 Comments, at 14. Without the exemption, these students would not have access to the works at issue.

educational purposes.¹⁶² Further, proponents have demonstrated that the proposed exemption would have negligible effect on the market for the relevant works, as discussed above.¹⁶³

Opponents argued that the exemption is unnecessary because most motion pictures released by MPAA members have accessibility features.¹⁶⁴ While many motion pictures are accessible, proponents have demonstrated that gaps exist in the laws and regulations compelling content distributors to make works accessible.¹⁶⁵ As a result, educational institutions frequently possess lawfully acquired motion pictures lacking accessibility features.¹⁶⁶ Moreover, proponents have demonstrated that filmmakers typically do not retrofit older films to add accessibility features.¹⁶⁷

Alternatives to circumvention, such as disability service offices providing a separate transcript of an audiovisual work to a student with disabilities or live sign interpretation are inadequate, costly, and burdensome.¹⁶⁸ Further, at the hearing proponents demonstrated that preconditioning circumvention on disability rights offices searching the market for an accessible copy would be impracticable.¹⁶⁹ For example, in the educational context, a student with a

¹⁶² *See id.*

¹⁶³ *See id.* at 14-15, 18.

¹⁶⁴ *See* Joint Creators I Class 2 Opposition Comments, at 5 (accessibility features including captioning and audio description).

¹⁶⁵ *See* ATSP Class 2 Reply Comments, at 6-8; *see also* April 12 Hearing Transcript, at 43-44. For example, older motion pictures often do not have accessibility features.

¹⁶⁶ *See* ATSP Class 2 Comments, at 12; ATSP Class 2 Reply Comments, at 17-18, Appendix A (“In general...it is hard to determine who is the actual copyright holder in many of the cases where we have old videos or a documentary where the publishing company has gone under”); ATSP Class 2 Comments, at 7, (“Disability services offices receive numerous requests – often, hundreds per semester – from faculty, student services offices, and other campus organizations, to reconfigure videos into formats that are accessible to students with disabilities”); *see also* ATSP Class 2 Reply Comments, at 3, Appendix A (E-mail from James Steffen, Emory University, to Carrie Russell, American Library Association (Feb. 28, 2018)) (for example, more than seventy-percent of DVDs lawfully acquired by Emory Heilbrun Music & Media Library lack accessibility features).

¹⁶⁷ *See* April 12 Hearing Transcript, at 29-30.

¹⁶⁸ *See* ATSP Class 2 Comments, at 3-4, 17-19; *see also* April 12 Hearing Transcript, at 40 (“That is a copyright exemption and the ability to circumvent are not necessarily the only way to solve the problem. We are here because that is the least worst solution to deal with the way things are now.”).

¹⁶⁹ *See* April 12 Hearing Transcript, at 30-40, 47-48, 63-64. NTIA recognizes that, in practice, a disabilities rights office may decide to search the market for and buy an accessible copy instead of circumventing the work to add accessibility features. For example, at the hearing proponents stated that finding an accessible commercial version “at the right price” would be fine “because it would be so much cheaper to buy.” *See id.* at 31-32. That said, NTIA sees no reason why the Librarian should make circumvention contingent upon a market search. For one, the record does not demonstrate a potential for abuse of the exemption by disability rights offices. Moreover, the proponents demonstrated that a market precondition could hinder a disability rights office from meeting its legal and ethical obligations in a timely manner. Lastly, preconditioning the exemption on a reasonable market search would be difficult to implement and could cause confusion. As it stands, it was clear from the hearings that the disabilities rights offices are going to find the best way to serve the disabled students, which may include ordering the film that already contains the accessibility features and having it delivered with overnight service.

disability might need an accessible video the next day after he or she requests it. If an educational institution had to first search the market for and order an accessible copy, then the student would not be able to watch the film when she needed it, which could conflict with disability laws.¹⁷⁰ Finally, such a precondition could be costly for educational institutions.¹⁷¹

At the hearing, in response to the Copyright Office, proponents suggested the proposed exemption should encompass K-12 institutions.¹⁷² In their post-hearing response, ATSP and the Library Copyright Alliance (“LCA”) have demonstrated the need to expand the accessibility exemption to include K-12 educational institutions.¹⁷³ K-12 educational institutions, like higher educational institutions, possess lawfully acquired audiovisual works protected by TPMs that lack accessibility features.¹⁷⁴ The prohibition also adversely affects K-12 educators and disabled students.¹⁷⁵ Like Class 1, NTIA believes that including all educational users here would help all students, regardless of grade level, and would simplify the exemption.¹⁷⁶

Proponents argued that the accessibility exemption should not limit students who are able to utilize works “on the basis of the legal classification of students.”¹⁷⁷ Proponents have found that other laws, including the ADA, IDEA, and Rehabilitation Act of 1973, have varying definitions of “disability.”¹⁷⁸ Therefore, proponents have urged that the Copyright Office define “disability” broadly to allow disability rights officers to perform accessibility services pursuant to the exemption “with a good faith intent to comply with a federal or state disability law or otherwise serve the educational needs of a student with a disability recognized under federal or state disability law.”¹⁷⁹ NTIA agrees and recommends that the Copyright Office adopt a broad, good-faith based definition of “individual with disability” for the purposes of the accessibility exemption. The users would be the disabilities rights offices or the equivalent unit at schools

¹⁷⁰ See *id.* at 34, 39-40, 47-48.

¹⁷¹ See *id.* at 33.

¹⁷² See *id.* at 58-60, 66-72.

¹⁷³ See ATSP Class 2 Post-Hearing Response, at 1-4 (“K-12 institutions face similar needs to make accessible versions of videos encumbered with technological protection measures that must be circumvented...”); see also Americans with Disabilities Act, 42 U.S.C. §§ 12101-12103; Individuals with Disabilities Education Act (IDEA), 20 U.S.C §§ 1400-1491; Rehabilitation Act, 29 U.S.C. § 701; see also April 12 Hearing Transcript, at 68 (requiring K-12 schools to abide by similar accessibility mandates).

¹⁷⁴ See ATSP Class 2 Post-Hearing Response, at 1-2.

¹⁷⁵ For example, the prohibition would adversely affect K-12 educators and disabled students if a school mandates requirements (a)(1)(i)(v)(c)(K6 (u)12.9 (t)-2.7 (i)-2.6 (o)1(g)12. (t)-4e75 (i)4Tw 11.17tiK

serving the needs of students with disabilities.¹⁸⁰ Other laws, such as the ADA, dictate what students (the exemption beneficiaries) the disabilities rights offices must serve. The exemption needs only define the user, who in this case is the disabilities rights office or its equivalent.

NTIA Recommendation for Class 2 (Accessibility): Based on the above analysis, NTIA recommends the following accessibility exemption:

Motion pictures (including television shows and videos), where circumvention is undertaken for the purpose of making a motion picture accessible to people with disabilities, including through the provision of closed and open captions and audio description, and is undertaken by disability services offices and equivalent units that support students with disabilities at educational institutions that are responsible for fulfilling those institutions' obligations to make works accessible to students with disabilities. The term "students with disabilities" should be construed broadly to allow educational institutions to exercise this exemption in a good-faith effort to comply with federal or state disability law or otherwise serve the educational needs of a student with a disability recognized under federal or state disability law and whose disability requires the use of accessible formats.

Class 3 – Audiovisual Works – Space-Shifting

Two petitioners requested new space-shifting exemptions for personal use and commercial use, respectively.¹⁸¹ Mr. Chris De Pretis proposed an exemption to permit circumvention by private owners of movies and television on DVD and Blu-ray discs to create a digital backup of the content for private use in case the original content becomes inaccessible.¹⁸²

¹⁸⁰ Hearing discussion on this topic as it relates to K-12 schools pointed out that each of these schools has a responsibility to assist students with disabilities with their individualized education plan or other accommodations for the student's particular disability and may call these offices various things such as Special Education Offices, Assistive Learning Offices, etc. and these names are derived from the institution's legal obligations. *See, e.g.*, IDEA, 20 U.S.C. § 1401(29).

¹⁸¹ Space-shifting refers to the transfer of digital content that enables a user to view on a different device the content protected by technological protection measures embedded in a lawfully acquired device (*e.g.*, a DVD, a Blu-ray disc, or a computer hard-drive. The physical devices in which the content is fixed contain TPMs that control users' ability to move that content to different devices for personal use or to create backup copies. No exemption for this class currently exists, but the Copyright Office considered and rejected similar proposed exemptions in the 2012 and 2015 proceedings. *See* 2012 Final Rule, 77 Fed. Reg. at 65276 ("The Register concluded that proponents had failed to establish that the prohibition on circumvention is imposing an adverse impact on non-infringing uses and declined to recommend the requested exemptions for space shifting."); 2015 Final Rule, 80 Fed. Reg. at 65960 ("[T]he 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.").

¹⁸² Class 3 Petition of Chris De Pretis (De Pretis Class 3 Petition) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class3/class-03-newpetition-de-pretis.pdf> (for example, "fragile disc as well as to play the content on tools that do not play discs (newer computer; iPads; iPhones; etc.)"). Consumers Union submitted comments in support of De Pretis's petition for

OmniQ proposed an exemption for “non-reproductive space-shifting,” which would permit circumvention for the purpose of creating digital copies of audiovisual works (“especially Motion Pictures”) that were originally fixed in optical discs (*e.g.*, a DVD or Blu-ray disc).¹⁸³

NTIA position: NTIA recommends denying the proposed exemption. Although noncommercial space-shifting might be a non-infringing use, the proponents have not established in this proceeding that their specific proposal would be non-infringing.¹⁸⁴

Analysis: The legal status of the concept of space-shifting remains a matter of dispute among copyright experts.¹⁸⁵ The fair use analysis generally weighs against granting the proposed exemptions. The first fair use factor weighs in favor of De Pretis’s proposed exemption but against OmniQ’s proposed exemption because the purpose and character of the use De Pretis proposed are personal use and those of OmniQ’s proposal are commercial and non-transformative.¹⁸⁶ Moreover, since this class primarily concerns audiovisual works, the second fair use factor, “the nature of the copyrighted work,” weighs against both proposed exemptions because the implicated copyrighted works tend to be highly expressive, which would warrant robust copyright protection.¹⁸⁷ Next, with regard to the amount and substantiality of the portion

space-shifting for personal use. This petition is similar to the proposed exemptions that the Copyright Office and the Librarian rejected in previous rulemakings. The previous proposals focused on copying owned copies of copyrighted works to different media or formats for noncommercial purposes of viewing the works on a different device or in a different format.

¹⁸³ Class 3 Petition of OmniQ (OmniQ Class 3 Petition) at 1, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class3/class-03-newpetition-omniq.pdf>; *see also* Class 3 Comments of OmniQ (OmniQ Class 3 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class3/class-03-initialcomments-omniq.pdf>. As in 2015, OmniQ claimed to have invented a space-shifting method that would not involve reproduction of copyrighted works and therefore would be non-infringing. 2015 Register’s Recommendation, at 123 (“OmniQ contends that the ‘non-reproductive’ space-shifting model it describes in its comments is a non-infringing use because the process described does not constitute reproduction under the Copyright Act.”).

¹⁸⁴ NTIA supported limited versions of a noncommercial space-shifting exemption in 2012 and 2015 mainly in the interest of consumer protection. In 2015, NTIA noted that some copyright scholars, such as Pamela Samuelson, take the view that noncommercial space shifting is fair use, and that “both the purpose and the technical details of time and space shifting are similar.” 2015 NTIA Letter, at 30. NTIA supported an exemption in cases where “the disc neither contains nor is accompanied by an additional copy of the work in an alternative digital format. *Id.* at 29-33.

¹⁸⁵ *See* 2015 NTIA Letter, at 29-30. Unlike time-shifting, space-shifting has not been explicitly established as non-infringing on the basis of the fair use doctrine. 2015 Register’s Recommendation, at 109 (“[T]he Register has consistently found insufficient legal authority to support the claim that [space-or format-shifting for the transfer of copyrighted works to different devices or the creation of back-up copies] are likely to constitute fair uses under current law.”). Proponents’ record does not indicate any changes with respect to the legal or factual landscapes regarding whether space-shifting should be non-infringing since the last Section 1201 Proceeding.

¹⁸⁶ *See id.* at 235 (“[T]he Register previously concluded that the first factor may favor fair use where ‘the purpose and character of the use is noncommercial and personal’ and facilitates the intended use” by device owners.).

¹⁸⁷ 17 U.S.C. § 107(2).

used, the proponents would copy works in their entirety.¹⁸⁸ Hence, the third fair use factor is either neutral or weighs against the proposals.¹⁸⁹ The fourth factor weighs against fair use. OmniQ intends to commercialize space-shifting in a way that could negatively effect on the market for copyrighted works.¹⁹⁰

In addition to the legal ambiguity of space-shifting, the extensive breadth of OmniQ's proposed exemption is both concerning and insufficiently supported by evidence. Proponents failed to demonstrate that the "prevalence of [encrypted digital content] is diminishing the ability of individuals to use these works in ways that are otherwise lawful."¹⁹¹ Further, OmniQ asserts that its technology is non-infringing because it does not implicate the reproduction right, but proponents have not demonstrated that the actual mechanism of OmniQ's invention will indeed avoid reproduction of copyrighted works.¹⁹² NTIA cannot recommend adopting the proposed exemption, although NTIA is sympathetic to the challenges encountered by those who own copies of motion pictures in formats no longer compatible with modern devices.¹⁹³

NTIA Recommendation for Class 3 (Space Shifting): NTIA recommends denying the proposed exemption.

Class 4 – Audiovisual Works – HDCP/HDMI

No exemption for this class currently exists. The proponent requested the ability to circumvent High-bandwidth Digital Content Protection (HDCP), which restricts access to audiovisual works passing over High-definition Multimedia Interface (HDMI) connections, for a variety of purported non-infringing uses.¹⁹⁴

¹⁸⁸ Proponents do not dispute that space-shifting usually involves the entirety of a copyrighted work. See Class 3 Reply Comments of OmniQ (OmniQ Class 3 Reply Comments) at 20, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class3/Class_03_Reply_OmniQ.pdf ("Although a single embodiment of the "entire work" is being moved from one material object to another, un-fixing it from one and fixing it in the new body, nothing is being reproduced into copies.").

¹⁸⁹ See 17 U.S.C. § 107(3).

¹⁹⁰ OmniQ Class 3 Petition, at 1 (OmniQ is "a joint venture . . . including major home video industry veterans, for the *commercial* development of a method for non-reproductive substitution of the material object in which a work is fixed.") (emphasis added).

¹⁹¹ 2015 Register's Recommendation, at 15.

¹⁹² OmniQ Class 3 Comments, at 2-3 ("The OmniQ solution, in contrast, is by definition non-infringing because there is no reproduction."). The proponents' record does not contain evidence other than OmniQ's assertion that only one copy of a copyrighted work will exist as the result of space-shifting performed in accordance with OmniQ's invention.

¹⁹³ See Class 3 Comments of Consumers Union (Consumers Union Class 3 Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class3/class-03-initialcomments-consumers-union.pdf> ("[W]hen a consumer purchases a product, the consumer should obtain genuine ownership of the product and its parts, including the ability to make effective use of the product, and the ability to effectively resell it. We believe consumers should have the ability to use the products they have purchased in all.").

¹⁹⁴ See Class 4 Petition of Andrew "Bunnie" Huang (Huang Class 4 Petition), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class4/class-04-newpetition-huang.pdf>. The proponent asserts that circumvention will allow a variety of purported non-infringing uses, including

NTIA Position: NTIA does not support the proposed exemption.

Analysis: Proponents did not provide sufficient evidence on the record about the alleged non-infringing uses for the particular class of works. While there are several examples of potential non-infringing uses that could serve as the basis for an exemption, the proponents have not developed the argument in the record here.¹⁹⁵ Instead, the proposed exemption appears to be for the HDCP TPM itself, which is not appropriate for this rulemaking process.¹⁹⁶

NTIA Recommendation for Class 4 (HDCP/HDMI): Without evidence in the record to support the proponent's claims, NTIA recommends denying the proposed exemption.¹⁹⁷

intelligent filtering of unwanted content; applying visual cues; translating and subtitling; alpha-blending overlays informed by a home assistant; space-, time-, and format-shifting; recording a video gamer's gameplay and remixing it with audio and visual commentary about the game; and rescaling a live political debate to add a live blog, among others. *See* Class 4 Comments of Andrew "Bunnie" Huang (Huang Class 4 Comments) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class4/class-04-initialcomments-huang.pdf>; Class 4 Reply Comments of Andrew "Bunnie" Huang (Huang Class 4 Reply Comment) at 4-5, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class4/Class_04_Reply_Huang.pdf.

¹⁹⁵ For example, circumventing HDCP to record a video gamer's gameplay and remixing it with audio and visual commentary about the game on the PlayStation 3, or circumventing HDCP to help document public government meetings. Huang Class 4 Reply Comments, at 2.

¹⁹⁶ Section 1201 provides for a rulemaking proceeding wherein the Librarian of Congress determines "whether persons who are users of a copyrighted work are, or are likely to be in the succeeding 3-year period, adversely affected by the prohibition [in Section 1201(a)(1)(A)] in their ability to make non-infringing uses under this title of *a particular class of copyrighted works*." 17 U.S.C. § 1201(a)(1)(C) (emphasis added). This process is not designed to grant exemptions for circumventing particular access controls, but to enable non-infringing use of a particular class of works that may be prevented by such access controls.

¹⁹⁷ We note, however, that some of proponent's sought uses may be supported by other current exemptions that the Register has recommend be renewed, such as the Smart TV exemption. 37 C.F.R. § 201.40(b)(5). *Cf.* 2015 Register's Recommendation, at 215 (noting that then-prohibition on circumvention adversely affected "legitimate non-infringing uses of smart TV firmware" that prevented the installation of "legitimate third-party software applications" that "include software to improve accessibility features for disabled users, to enable or expand the TV's compatibility with peripheral hardware and external storage devices, and to make changes to the features of the TV such as the aspect ratio") (internal citations omitted); 2015 NTIA Letter, at 50 (supporting the then-proposed Smart TV exemption in part because "there are accessibility needs that cannot always be met without circumvention, such as modifying subtitles to enhance readability or changing the aspect ratio or resolution of the television."); *see also* April 24 Hearing Transcript, at 146-48 (discussing whether the Smart TV exemption could permit some of the alleged non-infringing uses sought in the Seventh Triennial Section 1201 Rulemaking). To the extent that the proponent or others believe that current exemptions do not permit non-infringing uses, they are of course welcome to seek expansions or new exemptions in future rulemakings.

Class 5 – Computer Programs – Unlocking

Proponents seek two expansions to the current unlocking exemption, which allows for circumvention of:

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: Wireless telephone handsets (*i.e.*, cellphones); All-purpose tablet computers; Portable mobile connectivity devices, such as mobile hotspots, removable wireless broadband modems, and similar devices; and Wearable wireless devices designed to be worn on the body, such as smartwatches or fitness devices.¹⁹⁸

At a minimum, NTIA supports the proposed renewal of the exemption.¹⁹⁹ An exemption to allow circumvention of TPMs for purposes of unlocking particular wireless devices has existed in various forms since 2006.²⁰⁰ We believe that the renewal petitions demonstrated the

¹⁹⁸ See 37 C.F.R. § 201.40(b)(3).

¹⁹⁹ The TPMs and methods of circumvention are the same as those described and analyzed in the 2015 proceeding. See Class 5 Comments of Institute of Scrap Recycling, Inc. (ISRI Class 5 Comments) at 3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class5/class-05-initialcomments-isri.pdf>. Proponents have demonstrated that baseband locks found on wireless devices must be unlocked in order to switch cellular connectivity from one carrier to another. See Transcript, Hearing on Exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 – Digital Millennium Copyright Act, at 139, 153, 187 (Apr. 23, 2018) (April 23 Hearing Transcript), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-23-2018.pdf>. Since 2006, the Register has recognized that wireless devices have TPMs on the computer programs that enable connection to networks, and that methods of circumvention include alterations of code and operating systems. See Class 11 Comments of the Institute of Scrap Recycling Industries, Inc. (2015 ISRI Comments) at 4-5, Docket No. 2014-07, https://www.copyright.gov/1201/2015/comments-020615/InitialComments_LongForm_ISRI_Class11.pdf (examples of common locks include service provider code, system operator code, band order, and subscriber identity module).

²⁰⁰ See 2006 Final Rule, 71 Fed. Reg. at 68476; 2010 Final Rule, 75 Fed. Reg. at 43830-32; 2012 Final Rule, 77 Fed. Reg. at 65264-66; 2015 Final Rule, 80 Fed. Reg. at 65950-52. In the 2012 rulemaking, NTIA recommended an unlocking exemption to include all wireless devices, as the “line that distinguishes a mobile phone from other wireless devices is increasingly disappearing.” 2012 NTIA Letter, at 19. In the 2015 rulemaking, NTIA again recommended the unlocking exemption incorporate all wireless devices, as specified wireless devices would “inevitably prove ambiguous or obsolete within the next three years.” 2015 NTIA Letter, at 42.

continuing need for the exemption.²⁰¹ The petitioners have shown that the conditions that led to the last exemption still exist, so the need for the exemption remains.²⁰²

Proponents requested two related expansions of the unlocking exemption.²⁰³ Proponents ask to: (1) remove the enumerated list of wireless devices in the current exemption so that the exemption would apply to all wireless devices, and (2) remove the “used” devices limitation in the current exemption so that the exemption would include new wireless devices.²⁰⁴

NTIA position: NTIA supports the proposed changes to exemption for Class 5: Computer Programs – Unlocking, with some modification.

Analysis: NTIA believes the proponents have provided sufficient evidence to demonstrate that circumvention of TPMs on all lawfully acquired wireless devices is a non-infringing use. NTIA believes that replacing “used” with “lawfully acquired” would enable all

²⁰¹ Four entities submitted petitions to renew the current unlocking exemption. *See* Class 5 Renewal Petition of Competitive Carriers Association (CCA Class 5 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0024>; Class 5 Renewal Petition of Consumers Union (CU Class 5 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0034>; Class 5 Renewal Petition of the Institute of Scrap Recycling Industries, Inc. (ISRI Class 5 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0009> (ISRI organization members continue to receive locked mobile devices which require TPM circumvention to unlock in order to recycle or resell); Class 5 Renewal Petition of Owners’ Rights Initiative (ORI Class 5 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0037>.

²⁰² *See* CCA Class 5 Renewal Petition, at 3 (“CCA has direct knowledge that its carrier members and their consumers continue to need for the foreseeable future the unlocking exemption.”); CU Class 5 Renewal Petition, at 3 (“the considerations that warranted the exemption previously continue to be present”); ISRI Class 5 Renewal Petition, at 3 (“there are variations in which devices are locked and when or if carriers are willing to unlock them, the overall landscape has not changed in any way material to this exemption.”); ORI Class 5 Renewal Petition, at 3 (“Unless this exemption is renewed, section 1201 will interfere with this non-infringing activity in the future.”).

²⁰³ *See* Class 5 Petition of Institute of Scrap Recycling Industries, Inc. No. 1 (ISRI Class 5 Petition No. 1), <https://www.copyright.gov/1201/2018/petitions-091317/class5/class-05-newpetition-isri-1.pdf>; Class 5 Petition for New Exemption of the Institute of Scrap Recycling Industries, Inc. No. 2 (ISRI Class 5 Petition No. 2), <https://www.copyright.gov/1201/2018/petitions-091317/class5/class-05-newpetition-isri-2.pdf>.

²⁰⁴ *See* ISRI Class 5 Comments, at 5. There were no opponents in regard to either proposed expansion of the unlocking exemption. *See* April 23 Hearing Transcript at 141 (“There is no opposition this time, which seems to suggest and reinforce the link, that there is not a large link between copyright, phone trafficking and unlocking.”). Proponents have requested to expand the current unlocking exemption so that it would apply to all wireless devices that can connect to cellular networks, as the enumerated categories of devices are arbitrary and slow technological innovation. *See* ISRI Class 5 Comments at 5; Class 5 Comments of the Free Software Foundation, Inc. (FSF Class 5 Comments) at 2, <https://www.copyright.gov/1201/2018/comments-121817/class5/class-05-initialcomments-fsf.pdf>.

non-infringing activities contemplated by the proponents, while simultaneously decreasing concerns about facilitating the trafficking of stolen devices.²⁰⁵

In the hearings, the witnesses discussed the question of whether the exemption should cover wireless devices where the consumer does not contract directly with the service provider (such as, for example, with the OnStar system or wireless Amazon Kindles, where users of cars and e-readers can receive wireless services without a direct contract with the carrier providing the telecommunications service). We believe that the best way to think about this situation is by analogy to a wireless reseller of cellular service (where the end users also contract with a company that is not the actual carrier providing the cellular service). With wireless resellers, users can unlock their phones regardless of which entity is actually providing the wireless service. NTIA believes that the same should apply to owners of cars or e-readers (or other devices) that can connect to wireless carriers, as there is no clear difference between the situations as a copyright policy matter. There is no evidence that merely allowing the cellular radio in a car to communicate with a different wireless network would result in the user unlawfully obtaining copyrighted material that had only been made available with the initially bundled service (*e.g.*, OnStar maps).

However, just as with unlocking of more traditional devices, we note that no DMCA exemption can enable users to skirt any contractual obligations they may have. Similarly, if a user unlocks a device with bundled specialized services and moves it to another carrier, the user cannot expect that the original services would work over a new carrier network. Thus, for example, if a user is able to unlock an OnStar receiver in a car to direct it to connect to a different wireless carrier, the user cannot expect that OnStar would continue to provide service to the user. Similarly, although there may be good reasons why a user might want to unlock an e-reader device to connect to another carrier, such an action may well make the device unable to receive e-books from the original e-reader provider.

Proponents also have argued convincingly that the Librarian should remove the term “used” from the exemption, allowing the ability to unlock individual and bulk wireless devices that wireless carriers have not activated.²⁰⁶ Proponents have demonstrated that since 2015, business practices have changed, resulting in a need for bulk and individual unlocking of new wireless devices.²⁰⁷ Proponents were amenable to NTIA’s proposal to replace “used” with

²⁰⁵ During the hearing, NTIA proposed and proponents were amenable to replacing “used” with “lawfully acquired.” See April 23 Hearing Transcript, at 147-49 (“[O]ne of the problems we run into is that if these devices are returned without having been connected, they are for 1201 purposes new devices.”).

²⁰⁶ Proponents argued that the ability to recycle or resell wireless devices should not depend on whether a carrier previously activated a device. The analysis of non-infringing uses and statutory factors is the same whether or not a carrier had previously activated a wireless device. See ISRI Class 5 Comments, at 3 (“The same pro-consumer and procompetitive benefits that justify allowing unlocking of used devices and that warranted the 2015 exemption and 2017 renewal recommendation also justify unlocking of new wireless devices.”).

²⁰⁷ See *id.* at 3 (recyclers “increasingly obtain and need to recycle and/or resell new devices, particularly wireless handsets”); see also April 23 Hearing Transcript, at 138 (discussing recyclers obtaining new, locked smart watches because of a software glitch); *id.* at 145 (describing recyclers potentially obtaining thousands of leftover home security system units when a company shuts down the system and is longer

“lawfully acquired.” The expanded exemption would allow for greater consumer choice, avoiding unnecessary costs, and greater recycling or reselling of wireless devices.²⁰⁸

Proponents demonstrated that the exemption would allow for non-infringing use under Title 17, and indeed have shown that the proposed uses are essentially identical to those found under the current exemption for a more limited set of devices.²⁰⁹ Proponents also demonstrated that the proposed use would be fair use, which the 2015 record supports.²¹⁰ The first factor, purpose and character of the use, weighs in favor of fair use as the unlocking would be non-commercial and benefit the public.²¹¹ The second factor, nature of the copyrighted work, weighs in favor of a finding of fair use as it applies to software that is primarily functional in nature.²¹² The third factor, amount and substantiality of the work, would also promote a finding of fair use, as unlocking would only use necessary portions of the relevant works.²¹³ The fourth factor, effect on the market, weighs in favor of fair use, as allowing circumvention would increase the market value of unlocked devices.²¹⁴

Proponents have demonstrated that the prohibition on circumvention adversely affects or is likely to affect adversely affect users of all wireless devices in their ability to make non-infringing uses of copyrighted works. Proponents have argued convincingly that the lack of a pro-consumer, pro-competitive policy adversely affects consumers, recyclers, and wireless network providers.²¹⁵ The prohibition limits consumer choice of wireless network providers, limits recyclers’ ability to recycle or resell wireless devices, and limits competition between wireless network providers.²¹⁶

supporting it; for example, smart home system, Revolv, was bought by nest, then Nest shut the servers down).

²⁰⁸ See ISRI Class 5 Renewal Petition.

²⁰⁹ See ISRI Class 5 Comments, at 3, 7; *see also* 2015 ISRI Comments, at 6 (wherein proponents demonstrated that unlocking a wireless device usually does not implicate a copyright holder’s exclusive rights; the purpose of the locking TPMs on wireless devices is to decrease consumer choice in network provider and not to protect the copyrighted works on the wireless device).

²¹⁰ See 2015 ISRI Comments, at 6; 2015 NTIA Letter, at 40 (“All other factors are either neutral or favor the proponents in a fair use determination.”).

²¹¹ See 2015 ISRI Comments, at 7-8 (“[T]he use that is made has the opposite purpose of the original purpose, a highly transformative action.”).

²¹² See *id.* at 8 (“[M]ost unlocking methods only involve the highly functional portions of the software—such as carrier code variables—which are not eligible for copyright protection”).

²¹³ See *id.* (“[U]nlocking methods . . . only interact with certain codes or variables that represent a tiny component of the software stored or embedded on the phone.”).

²¹⁴ See *id.* (“[T]he ability to lawfully unlock mobile devices likely increases the value of those devices because the owner gains the ability to switch to a preferred carrier and because the resale value of the device increases.”).

²¹⁵ See ISRI Class 5 Comments, at 4.

²¹⁶ See *id.* at 4 (recyclers “are unable to engage in non-infringing unlocking of devices for the benefit of consumers who are buying or selling used devices; consumers are denied the ability to acquire high-quality devices from resellers and use them on the network of their choice; and competition between new and formerly owned devices and between networks is reduced . . . [T]heir [wireless devices] status as new/unused changes none of these considerations.”); Class 5 Reply Comments of Institute of Scrap Recycling Industries, Inc. (ISRI Class 5 Reply Comments) at 5, 6, Docket No. 2017-10,

Lastly, proponents have demonstrated that the statutory factors favor proponents.²¹⁷ Proponents have shown that an unlocking exemption would increase availability for use of the copyrighted works, particularly wireless device software.²¹⁸ The market for the copyrighted works may increase with an unlocking exemption as wireless device sales may increase and software “will have longer lifetimes.”²¹⁹ Proponents have also demonstrated that unlocking is an issue of consumer choice rather than copyright.²²⁰ NTIA believes that proponents made the necessary case that the five statutory factors favor adopting the proposed exemption.

NTIA recommendation for Class 5 (Unlocking): NTIA recommends that the Copyright Office adopt the following exemption language:

Computer programs that enable lawfully acquired wireless devices to connect to a wireless telecommunications network, when circumvention is undertaken solely in order to connect the wireless device to a wireless telecommunications network and such connection is authorized by the operator of such network.

Class 6 – Computer Programs – Jailbreaking

The current jailbreaking exemption allows for circumvention of:

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.²²¹

https://www.copyright.gov/1201/2018/comments-031418/class5/Class_05_Reply_ISRI.pdf (some security systems and automobile GPS trackers are only offered in certain locations with certain network providers).

²¹⁷ See ISRI Class 5 Comments, at 7 (the class of works, TPMs, methods of circumvention, non-infringing uses, and adverse effects are the same regardless of the type of wireless device so that ISRI’s 2015 comment can provide support).

²¹⁸ See *id.* at 9.

²¹⁹ *Id.* (“There is no reason to think that device manufacturers would slow or halt production of mobile software or devices simply because owners are able to unlock those devices and switch carriers.”).

²²⁰ See *id.* at 10.

²²¹ See 37 C.F.R. § 201.40(b)(4). The Librarian first granted an exemption for jailbreaking in 2010. The Librarian renewed and expanded the exemption in 2012 and 2015.

At a minimum, NTIA supports the proposed renewal of the exemption. Four petitioners submitted petitions to renew the current exemption.²²² The petitioners argued persuasively that the relevant factual and legal record in this class has not changed materially since the 2015 proceeding, and that the need for the exemption remains.²²³

EFF, *et al.*, have proposed the following modification to the jailbreaking exemption:²²⁴

Computer programs that enable smartphones, voice assistant devices, and portable all-purpose mobile computing devices to execute lawfully obtained software applications, where circumvention is accomplished solely for one or more of the following purposes: enabling interoperability of such applications with computer programs on the smartphone or device, or to permit removal of software from the smartphone or device, or to enable or disable hardware features of 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. A “voice assistant 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 designed to take user input primarily by voice, and is designed to be installed in a home or office.²²⁵

The proposed exemption would expand the current class of devices to include voice assistant devices (*e.g.*, Amazon Echo, Google Home, and Apple HomePod).²²⁶ The proposed

²²² See Class 6 Renewal Petition of Electronic Frontier Foundation (EFF Class 6 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0013>; Class 6 Renewal Petition of Software Freedom Conservancy (Software Freedom Conservancy Class 6 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0015>; Class 6 Renewal Petition of New Media Rights (New Media Rights Class 6 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0021>; Class 6 Renewal Petition of Libiquity, LLC (Libiquity Class 6 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/document?D=COLC-2017-0007-0008>.

²²³ See EFF Class 6 Renewal Petition, at 3; Libiquity Class 6 Renewal Petition, at 3; New Media Rights Class 6 Renewal Petition, at 3.

²²⁴ EFF filed its First Round Comments in conjunction with the Owners’ Rights Initiative and the Association of Service and Computer Dealers International, Inc. See Class 6 Comments of Electronic Frontier Foundation (EFF Class 6 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class6/class-06-initialcomments-eff-ori-ascdi.pdf>.

²²⁵ EFF Class 6 Comments, at 2. This formulation refines the original text that EFF proposed in its Initial Petition. See Class 6 Petition of Electronic Frontier Foundation (EFF Class 6 Petition) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class6/class-06-newpetition-eff.pdf>.

²²⁶ No previous proposals addressed allowing circumvention for voice assistant devices for the purpose of enabling or disabling hardware features.

exemption would also permit circumvention for enabling or disabling hardware features of all devices subject to the current and proposed exemption.²²⁷

NTIA Position: NTIA supports the proposed modification. NTIA recommends granting the requested exemption for Class 6: Computer Programs – Jailbreaking.²²⁸

Analysis: Proponents have made the case that the proposed class includes copyrighted works protected by TPMs.²²⁹ With regard to the type of device at issue, EFF included a definition for the term “voice assistant device” in its proposed exemption text.²³⁰ Opponents claimed that the proposal is overly broad and could include any device operated by voice, including set-top boxes and video game consoles.²³¹ EFF responded by stating explicitly that the intended class would not include set-top boxes and video game consoles, nor would it include any other device that is not designed to take user input *primarily* by voice.²³² NTIA believes that

²²⁷ Thus, in all, the purpose of the modified exemption would allow users to: (1) enable interoperability of applications with computer programs on the device, (2) permit removal of software from the device, or (3) enable or disable hardware features of the device. Consumers Union and the Free Software Foundation, Inc. also submitted comments in support of this exemption. *See generally* Class 6 Comments of Consumers Union (Consumers Union Class 6 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class5/class-05-initialcomments-consumers-union.pdf>; Class 6 Comments of Free Software Foundation (Free Software Foundation Class 6 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class5/class-05-initialcomments-consumers-union.pdf>. EFF argued that this exemption is necessary to give consumers fuller control over a broader range of devices than is allowed by the current exemption. *See* EFF Class 6 Comments, at 13-15.

²²⁸ On a procedural note, opponents raise an objection to EFF’s modification of its proposed exemption text between its Initial Petition and its First Round Comments. Class 6 Opposition Comments of Joint Creators II (Joint Creators II Class 6 Opposition Comments) at 3, 4, 6-8, 9-10, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class6/Class_06_Opp'n_Joint_Creators_II.pdf. However, NTIA agrees with EFF that the modification constitutes a clarification in response to questions posed in the 2017 Notice of Proposed Rulemaking. Class 6 Reply Comments of Electronic Frontier Foundation (EFF Class 6 Reply Comments) at 2-3, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class6/Class_06_Reply_EFF.pdf. Thus, it presents no procedural obstacle that would prevent the Librarian from granting the requested exemption.

²²⁹ In its comments, EFF described sufficiently the TPMs installed on the devices at issue and the method of circumvention. The firmware on most voice assistant devices is GNU/Linux, which contains access controls to limit access to many device functions. Voice assistant devices running iOS (the same operating system running on iPhones and iPads subject to the current jailbreaking exemption) have similar access controls. A user would need to circumvent the access controls in order to engage in the non-infringing uses discussed below. *See* EFF Class 6 Comments, at 6-7; *see also* EFF Class 6 Reply Comments, at Attachment 1.

²³⁰ EFF Class 6 Reply Comments, at 3.

²³¹ Class 6 Opposition Comments of ACT | The App Association (ACT Class 6 Opposition Comments) at 3-4, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class6/Class_06_Opp'n_App_Association.pdf; Joint Creators II Class 6 Opposition Comments, at 4, 10-11.

²³² EFF Class 6 Reply Comments, at 3-4.

this clarification should assuage opponents' concerns regarding the breadth of the proposed exemption and the risk of piracy.

Proponents have made the case that the uses at issue are non-infringing under Title 17. They have argued convincingly that the uses for which they are requesting the exemption would likely be fair uses.²³³ Under the first fair use factor, the purpose and character of jailbreaking promotes interoperability and is transformative and noncommercial, which favors a finding of fair use.²³⁴ The second and third factors either favor fair use or are neutral. The nature of the copyrighted work is largely functional, which favors fair use. The amount and substantiality of the portion of the overall code that users and developers would modify to accomplish a jailbreak is minimal, necessary, and reasonable, which is neutral.

Under the fourth factor, proponents argued persuasively that jailbreaking would likely not harm the market for the copyrighted work. Indeed, proponents have presented evidence that jailbreaking has not harmed the market for devices subject to the current exemption.²³⁵ The Register has previously found that further growth of the market for devices subject to a jailbreaking exemption supports a favorable finding on the fourth factor.²³⁶ Opponents claimed that the proposed exemption would: compromise security of subscription entertainment and publishing offerings; allow for installation of piracy applications on a device; and generally enable unauthorized access to and infringement of copyrighted works.²³⁷ However, opponents failed to explain why infringement is more likely on voice assistant platforms than on smartphones, tablets, and other devices already subject to the exemption.²³⁸ Due to the lack of

²³³ See 17 U.S.C. § 107. NTIA believes that the uses described are similar or identical to those allowed by the current exemption. In 2010, 2012, and 2015, the Register and Librarian concluded that jailbreaking the firmware in one's device for the purpose of running lawfully acquired software is a fair use. See 2010 Final Rule, 75 Fed. Reg. at 43828-29; 2012 Final Rule, 77 Fed. Reg. at 65263-64; 2015 Final Rule, 80 Fed. Reg. at 65952.

²³⁴ EFF Class 6 Comments, at 8-9. Jailbreaking is transformative in that copying and modifying software to make it compatible with other, independently created software is transformative. See also 2015 Register's Recommendation, at 188; see also U.S. Copyright Office, *Section 1201 Rulemaking: Fifth Triennial Proceeding to Determine Exemptions to the Prohibition on Circumvention, Recommendation of the Register of Copyrights*, at 71-72 (Oct. 2012) [hereinafter 2012 Register's Recommendation], https://www.copyright.gov/1201/2012/Section_1201_Rulemaking_2012_Recommendation.pdf (showing that in previous proceedings, the Register has found that when the use is for interoperability, removing software, and enabling or disabling hardware features for personal use (as is the case here), these uses would likely be transformative and non-infringing).

²³⁵ EFF Class 6 Comments, at 12.

²³⁶ 2015 Register's Recommendation, at 189.

²³⁷ Joint Creators II Class 6 Opposition Comments, at 11-13; *id.* Exhibit 1, 2-3.

²³⁸ Class 6 Reply Comments of SaurikIT (SaurikIT Class 6 Reply Comments), Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class6/Class_06_Reply_SaurikIT.pdf.

Opponents introduced no convincing evidence that the current jailbreaking exemption has contributed to infringement of entertainment content in any significant way. On smartphones, tablets, and other devices subject to the current exemption, rights holders employ access controls over content that function even if the device owner has root privileges. Opponents presented no evidence of any fundamental difference between voice assistants and other personal computing devices already subject to an exemption.

evidence in the record, NTIA rejects opponents' proposition that infringement would be more likely on voice assistant devices.²³⁹ Thus, the proposed exemption would likely not harm the market for the copyrighted works at issue. This favors a finding of fair use. Based on analysis of all the factors, NTIA believes the requested uses are likely fair uses, and thus non-infringing.

Proponents have made the case that the prohibition on circumvention adversely affects or is likely to adversely affect users of this class of work. The proponents asserted that the prohibition on circumvention adversely affects consumers' control over voice assistant devices.²⁴⁰ In particular, proponents are concerned about the consumers' inability to control privacy and personal information settings on these devices without jailbreaking.²⁴¹

No reasonable alternative to circumvention exists. Opponents argued the opposite, as some voice assistant device manufacturers allow independent application development for their devices.²⁴² However, the proffered alternatives to circumvention – including building one's own device from an online model – are not viable.²⁴³

The Section 1201 five statutory factors also favor proponents.²⁴⁴ With regard to the availability for use of copyrighted works, the market for smartphones has continued to grow despite the existence of the current exemption to which they are subject. The Register has concluded "access controls prevent consumers from using third-party applications, so denying a jailbreaking exemption would significantly diminish the availability of those works."²⁴⁵ Further, the Register concluded that granting an exemption is unlikely to discourage the development or use of devices or the firmware needed to run them.²⁴⁶ Based on the same logic, the proposed exemption would have either no effect or a positive effect on the availability of copyrighted firmware and application software. Further, the proposed exemption would likely not have an effect on the market for, or value of, copyrighted works. EFF argued that the exemption is likely to "stimulate the market for such works by permitting developers to create new applications for the devices that go beyond what the manufacturer has anticipated, thus making these devices ... more attractive to consumers."²⁴⁷ Further, EFF argued jailbreaking would not contribute to

²³⁹ EFF Class 6 Reply Comments, at 5-6.

²⁴⁰ These adverse effects parallel the adverse effects for users of mobile devices in the current jailbreaking exemption and therefore this is a natural expansion of the current exemption. EFF Class 6 Comments, at 13; Consumers Union Class 6 Comments, at 2-3.

²⁴¹ EFF Class 6 Comments, at 14.

²⁴² ACT Class 6 Opposition Comments, at 3; Joint Creators II Class 6 Opposition Comments, at 5, 14.

²⁴³ For example, the homemade device would not include a connection to Amazon or Google and would not include a voice assistant, eliminating all of the desired capabilities and functionality of the device itself. EFF Class 6 Reply Comments, at 7-8.

²⁴⁴ See 17 U.S.C. 1201(a)(1)(C)(i)-(v).

²⁴⁵ 2015 Register's Recommendation, at 190 (citing 2012 Register's Recommendation, at 76, and U.S. Copyright Office, *Recommendation of the Register of Copyrights in RM 2008-8; Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies*, at 101 (June 2010), <https://www.copyright.gov/1201/2010/initialed-registers-recommendation-june-11-2010.pdf>).

²⁴⁶ *Id.*

²⁴⁷ EFF Class 6 Comments, at 16.

infringement of copyrighted entertainment media, as the proposed expansion would not allow circumvention of access controls on media streamed to the device.²⁴⁸ These arguments persuade NTIA that the proposed exemption would not harm the market for copyrighted works.

NTIA Recommendation for Class 6 (Jailbreaking): NTIA recommends that the Copyright Office adopt the exemption language proposed by EFF:

Computer programs that enable smartphones, voice assistant devices, and portable all-purpose mobile computing devices to execute lawfully obtained software applications, where circumvention is accomplished solely for one or more of the following purposes: enabling interoperability of such applications with computer programs on the smartphone or device, or to permit removal of software from the smartphone or device, or to enable or disable hardware features of 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. A “voice assistant 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 designed to take user input primarily by voice, and is designed to be installed in a home or office.

Class 7 – Computer Programs – Repair

Proponents sought four expansions to the current repair exemption, which allows for circumvention of:

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.²⁴⁹

At a minimum, NTIA supports the proposed renewal of the current exemption. No parties opposed the renewal, and motorized land vehicles have only increased their reliance on software embedded electronics, increasing the need for the exemption. We discuss the four proposals to expand the exemption below.

²⁴⁸ *Id.*; EFF Class 6 Reply Comments, at 1.

²⁴⁹ 37 C.F.R. 201.40(b)(6).

Software-Enabled Devices

EFF proposed to eliminate the current exemption's limitation to motorized land vehicles by expanding the exemption to reach any software and compilations of data so long as it is for non-infringing repair, diagnosis, or modification of a software-enabled device.²⁵⁰

NTIA position: NTIA supports a modified version of the proposed exemption. NTIA believes that in general a user modifying or repairing her own software-enabled device is a non-infringing fair use.²⁵¹ At this juncture, the record only supports an exemption for mobile handsets (such as cell phones) and home appliances.²⁵²

Analysis: NTIA believes for the aforementioned devices that proponents adequately described a new definable sub-class separate from land mobile vehicles, for circumvention to facilitate non-infringing uses of their device.²⁵³ The proponents demonstrated for these devices that the current prohibition against circumvention adversely affects users' ability to make non-infringing uses, such as repair of defects, diagnosis of problems, and modification of these devices.

Proponents meet their burden in demonstrating that repair and modification of mobile handsets and household appliances (*e.g.* thermostat controls and refrigerators with functionality related to Internet connectivity) are specific classes of devices where users have demonstrated the need for breaking the encryption in order to make non-infringing uses.²⁵⁴ The fair use

²⁵⁰ *Id.*; Class 7 Petition of Electronic Frontier Foundation Class 7 Petition (EFF Class 7 Petition) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class7/class-07-newpetition-eff.pdf>. Here EFF argued for a list of various classes of devices. The evidence presented and discussed on the two classes here were better developed than the remaining proposed list of devices. See EFF Class 7 Petition, at 1-2.

²⁵¹ This position is consistent with NTIA's position in past 1201 proceedings and relevant statutes, which

analysis here is similar to repair of land mobile vehicles and jailbreaking discussed in other sections.

The first factor favors fair use since, as the proponents argued, diagnosis is a critical component of repairing a device and subsequent modification both qualify as a non-infringing transformative uses.²⁵⁵ For example, proponents asserted that users are proposing to add new functions or modifying existing features to these devices to better serve their needs. Users are also examining the data in order to diagnose issues the device may have. Both often require circumvention.²⁵⁶ The second factor favors fair use as software in this class of devices is largely functional (it contains a set of commands for how a device should operate).²⁵⁷ The third factor weighs in support of fair use since the portion used is reasonable to its proposed purpose.²⁵⁸ Moreover, the fourth factor favors fair use, as the user already owns the device so there would be no market substitution. Given this analysis, NTIA believes proponents have met their burden to demonstrate non-infringing fair use.

NTIA supports this limited expansion to home appliances and handsets (such as cell phones) based upon the strength of the record for these devices. For example, proponents provided a number of helpful examples in the written and oral record from both categories that effectively demonstrated these uses of repair, diagnosis and modification to the device that required circumvention as a step.²⁵⁹ Home appliances, for this proposed exemption, include a fairly broad spectrum of devices such as a wireless lighting system, where a modification allowed users to use other lighting options other than those provided by the manufacturer.²⁶⁰ Additionally, proponents noted that appliance companies are installing various security measures that prevent repair, in some cases because of security concerns.²⁶¹ Also, manufacturers stop providing security updates, which then requires circumvention to turn the Wi-Fi off in order to update and secure the device.²⁶² In part, the need for this category of devices stems from the limited warranties and life spans of appliances.²⁶³

An additional example that NTIA believes will qualify under the handset category of devices includes two-way radios. EFF provided an important example that demonstrates this fair use where a tinkerer bypassed the encryption on firmware updates. This would allow the users to modify the radio to monitor conversations and reprogram certain buttons to increase functionality.²⁶⁴ Further examples include replacing batteries in certain cell phones such as the

²⁵⁵ EFF Class 7 Comments, at 7-8.

²⁵⁶ *Id.* at 8.

²⁵⁷ *Id.* at 8-9.

²⁵⁸ *Id.* at 9.

²⁵⁹ See April 12 Hearing Transcript, at 98-99 (for a discussion generally of modification to the device). This proposal will also reduce e-waste, which occurs when consumers cannot afford costly device repairs. See April 23 Hearing Transcript, at 9-11.

²⁶⁰ EFF Class 7 Comments, at 3.

²⁶¹ April 25 Hearing Transcript, at 30-31.

²⁶² *Id.* at 73-74.

²⁶³ *Id.* at 30-31. This included a discussion of that appliances break down after their warranty has expired.

²⁶⁴ EFF Class 7 Comments, at 3-4; see also April 25 Hearing Transcript, at 13-14 (various brands of cell phones are mentioned as the types of items that are needing repairs, such as the home button on iPhones).

Apple iPhone where a TPM may have to be circumvented to ensure that a replacement battery operates with the phone or installing parts from donor phones to repair cell phones.²⁶⁵

Limiting the devices to home appliances and handsets, excludes media playback devices, computers, and game consoles largely answering opponents concerns of the risk of infringement in this expansion of the exemption.²⁶⁶ While NTIA generally supports opponents' point that a clear definition of repair is helpful going forward, it is unnecessary to eliminate the possibility that device owners can also modify their devices so long as that modification is not intended to gain unauthorized access to works or play pirated materials.²⁶⁷ This concern is ameliorated as the devices we propose be included do not include playback of copyrighted works as their primary function.²⁶⁸ Also, proponents countered that devices that include any playback capability are generally returned "locked down" as the goal is not to enhance the device's functionality.²⁶⁹ Further, NTIA agrees with proponents that moving forward it is best to provide categories of devices rather than listing specific devices.²⁷⁰ Accordingly, NTIA recommends the Librarian adopt the following language as new sub-class as a part of the repair exemption:

Computer programs that are contained in and control the functioning of a home appliances and handsets (such as cell phones), when circumvention is a necessary step to allow the diagnosis, repair or lawful modification of a device function.

Telematics and Entertainment Systems

Two petitioners, the Consumer Technology Association (CTA) and Auto Care Association (ACA), seek to remove the telematics and entertainment systems limitation from the current exemption.²⁷¹ In the 2015 proceeding, the Register excluded telematics and entertainment systems from the exemption due to specific copyright infringement concerns.

NTIA position: NTIA supports petitioners' proposal in part. NTIA believes that petitioners satisfy their burden of proof to include telematics for limited purposes, but not

²⁶⁵ April 25 Hearing Transcript, at 32-34.

²⁶⁶ See Joint Creators Class 7 Comments, at 12-13; see also ESA Class 7 Comments, at 2-3; April 10 Hearing Transcript, at 76-81; April 25 Hearing Transcript, at 15.

²⁶⁷ See Joint Creators Class 7 Comments, at 12-13.

²⁶⁸ See EFF Class 7 Comments, at 10 (quoting U.S. Copyright Office, *Software-Enabled Consumer Products: A Report of the Register of Copyrights*, at 35-58 (Dec. 2016), <https://www.copyright.gov/policy/software/software-full-report.pdf>); see also EFF Class 7 Reply Comments, at 3-5.

²⁶⁹ April 25 Hearing Transcript, at 16-17.

²⁷⁰ See April 12 Hearing Transcript, at 82-90. Categories are preferred over very specific devices such as a thermostat or a refrigerator and is better in this context than all devices that contain computer software.

²⁷¹ Class 7 Petition of Auto Care Association & Consumer Technology Association (ACA & CTA Class 7 Petition) at 4, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class7/class-07-newpetition-aca-cta.pdf>.

entertainment modules.²⁷² The record supports proponents' argument that the telematics modules increasingly contain critical information for diagnosis, repair, and modification of the entire vehicle. However, proponents have not developed the record on entertainment modules enough to support their inclusion in the exemption.

There is a strong likelihood that accessing telematics modules for diagnostic purposes in order to facilitate vehicle repair and modification would qualify as fair use. In the last triennial process, the Copyright Office found support in the record for non-infringing uses as they relate to the Engine Control Unit's (ECU) controlling vehicle function (*e.g.*, ignition and gear shifting), but concluded that the record on non-infringing uses for telematics and entertainment systems was "sparse."²⁷³ In this rulemaking, proponents presented new information on non-infringing use of telematics data for diagnostic purposes. It is now clear that if the telematics device relates to the functioning of the automobile, then there should be an exemption for this purpose. The written and oral testimony highlighted the problem that critical diagnostic information is increasingly inaccessible through the "on-board diagnostics" (OBD) port.²⁷⁴ NTIA was particularly persuaded by testimony that not only is this diagnostic information from the OBD port limited to begin with (since it was primarily an access point for auto shops to determine whether the vehicle meets exhaust standards set by the Clean Air Act), but that it also provides limited diagnostic information than what is available over the encrypted telemetry data stream.²⁷⁵

In addition, NTIA is also concerned that hearing testimony highlighted a trend toward diagnostic information being located in the telematics module, and only available via the original equipment manufacturer's (OEM's) licensed devices.²⁷⁶ This creates a closed market for repair and modification and lessens consumer choice. NTIA notes that it proposes limiting use to

²⁷² Proponent and opponent use the terms entertainment system and infotainment system interchangeably. For consistency, NTIA will use entertainment system throughout.

²⁷³ 2015 Register's Recommendation, at 234-5. In general, the ECU is a dedicated operating system within the vehicle that controls a number of electronic control systems related to engine efficiency and functionality.

²⁷⁴ April 25 Hearing Transcript, at 66-67.

²⁷⁵ Class 7 Response to Post-Hearing Questions of Electronic Frontier Foundation, *et al.* (EFF Class 7 Post-hearing Response) at 5 (June 11, 2018), https://www.copyright.gov/1201/2018/post-hearing/answers/Class%207%20post-hearing%20response%20--%20EFF_Dorman_SmarTeks_Auto%20Care_iFixit_Puls_Repair.org.pdf ("As a factual matter, the Office heard testimony that those other TPMs are in place in many instances, and in other are only absent because rightsholders chose to remove them. It would be absurd to prevent a wide range of legitimate

obtaining the *diagnostic* data from the telematics module for purposes of repair and modification of the vehicle, and not repair or modification to the module itself.

Entertainment systems present a harder case for inclusion in the exemption. There is some evidence in the record about entertainment modules, but NTIA continues to have reservations about the strength of that record and the potential for infringement.²⁷⁷ At this time, NTIA does not believe that proponents have made a strong enough case that adding storage capacity in the entertainment module, for example, represents a fair use.

Concerning statutory factors, NTIA does not believe the record warrants a departure from the 2015 analysis on the other factors. Under the fifth statutory factor (“such factors as the Librarian considers appropriate”), commenters raised concerns about compliance with federal and state laws unrelated to copyright.²⁷⁸ NTIA notes that these parties raised similar concerns three years ago, and the Librarian found good reason to grant the repair exemption. NTIA does not believe that this small expansion of the current exemption to include vehicle telematics systems for diagnostic purposes increases the risks proponents raised. NTIA continues to believe, as it did in 2015, that “the appropriate regulatory authorities will continue to ensure compliance with federal and state laws that control [such things as] safety features and emissions. NTIA notes, however, that granting an exemption from the prohibition does not authorize a vehicle owner to violate any federal, state or local laws.”²⁷⁹ For the reasons discussed above, NTIA recommends expanding the exemption to include telematics modules, but not entertainment modules.

²⁷⁷ The proponents’ primary argument is that adding storage capacity is a transformative use. Relying on *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984), CTA argues that the entertainment systems are similar to “storage capacity” and being able to add to an owner’s vehicle storage capacity can “violate neither copyright nor the DMCA.” See CTA Class 7 Comment at 6. Harman replies that the decision in *Sony* focused on “whether the use of tape recorders to archive copyrighted material was fair use. The Supreme Court held that it was, because the Betamax VHS player’s ‘time shifting’ capabilities [were] fair use.” See Harman Class 7 Opposition Comments, at 5.

²⁷⁸ 17 U.S.C. § 1201(a)(1)(C)(v). Harman, for example, raised concerns about consumer safety, privacy protection, and spectrum compliance. Harman Class 7 Opposition Comments, at 3-4; see also *id.* at 4 (In particular, Harman contended that “telematics systems are often gateways into vehicle ECUs that control critical safety functions of the vehicle, such as throttle, braking, and steering. . . . For example, the recent Jeep hacking incident, in which hackers updated the ECU’s firmware to adjust cruise control settings or activate parking brakes, illustrates the dangers attendant with permitting *any* type of circumvention of a vehicles TPM.”); Harman Class 7 Post-hearing Response, at 3 (“[C]ircumventing that system could result in grave safety concerns, such as changing settings so that a driver can engage with augmented reality while the car is in motion, thus putting himself and other drivers on the road in grave danger.”). Auto Alliance advanced safety, environment, and data privacy concerns as reasons to oppose the exemption. Class 7 Opposition Comments of Auto Alliance (Auto Alliance Class 7 Opposition Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class7/Class_07_Opp'n_Auto_Alliance.pdf.

²⁷⁹ 2015 NTIA Letter, at 57-58.

Third Parties

The current exemption allows for the use of computer programs where the authorized owner of the vehicle undertakes circumvention to allow diagnosis, repair, or lawful modification of a vehicle function and where such circumvention does not constitute a violation of applicable laws. The American Farm Bureau Federation and others have petitioned to extend the current exemption to “non-manufacturer-authorized farm equipment mechanics and service technicians who serve agricultural vehicle owners,” while two other petitioners requested expansion of the exemption beyond motorized land vehicles.²⁸⁰ The Copyright Office consolidated the separate petitions into one proposal to “expand the existing exemption to allow third parties to provide services on behalf of owners of *motorized land vehicles*.”²⁸¹ NTIA analyzes the proposals using this Copyright Office framework.

NTIA position: NTIA supports the proposed exemption. To ensure that the DMCA does not unduly inhibit the rights of vehicle owners, NTIA recommends expanding the existing exemption to include third parties who provide diagnosis, repair and modifications service to vehicle owners. As modern vehicles become increasingly complex for their owners to diagnose, repair, and modify without expertise in software, these owners risk losing the freedom to diagnosis, repair, and modify their vehicles without this expansion.²⁸²

²⁸⁰ Class 7 Petition of USC Intellectual Property and Technology Law Clinic, *et al.* (USC Class 7 Petition) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class7/class-07-newpetition-ipt-usc-afbf-ncga-nfu.pdf> (noting that “many farmers and ranchers do not have the necessary skill, knowledge, or tools in software engineering to diagnose, repair, or lawfully modify their own vehicles”); *see also* 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49,561.

²⁸¹ 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49,561 (emphasis added) The American Farm Bureau Federation and others have petitioned to extend the current exemption to “non-manufacturer-authorized farm equipment mechanics and service technicians who serve agricultural vehicle owners.” Another two petitions went beyond motorized land vehicles that the Copyright Office suggested for this proposed exemption in its Notice of Proposed Rulemaking; *see also* EFF Class 7 Petition, at 2 (“The types of users who want access [include] . . . independent repairpersons.”); Class 7 Petition of iFixit (iFixit Class 7 Petition) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class7/class-07-newpetition-ifixit.pdf> (“Consumers should be able to repair products themselves or contract with a third-party service technician or their choice.”); USC Class 7 Petition, at 2 (“[S]eeking to expand the current Class 21 exemption to non-manufacturer-authorized farm equipment mechanics and service technicians who serve agricultural vehicle owners” and noting that “many farmers and ranchers do not have the necessary skill, knowledge, or tools in software engineering to diagnose, repair, or lawfully modify their own vehicles[.]”). In the previous rulemaking process, the Copyright Office rejected a similar expansion for third parties on behalf of vehicle owners. *See* 2015 Register’s Recommendation, at 246-47.

²⁸² Transcript, Hearing on Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 - Digital Millennium Copyright Act, at 23 (noting that vehicles today “have somewhere between 50 and 70 complex computing devices”); *see also* Class 7 Comments of American Farm Bureau Federation (AFBF Class 7 Comments), Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class7/class-07-initialcomments-afbf-ncga-nfu.pdf>.

Analysis: OEMs increasingly embed proprietary software in vehicles’ internal ECUs, restricting the user’s ability to diagnose, repair, or modify the function of a vehicle or directly control the function and operation of vehicle parts.²⁸³ Currently, the ability of vehicle owners to diagnose, repair, and lawfully modify their own vehicles varies based on the availability of proprietary software tools via OEM-authorized dealerships.²⁸⁴ Based on the record, NTIA believes that third-party circumvention for the purposes of diagnosis, repair, and lawful modification, authorized by vehicle owners for their personal use, constitute non-infringing uses under the fair use doctrine and Section 117.²⁸⁵

The fair use analysis supports broadening the current exemption. The first fair use factor weighs in favor of the proposed exemption because “the purpose and character of the use” of the proposed expansion would be noncommercial and for owners’ personal use.²⁸⁶ The second fair

²⁸³ AFBF Class 7 Comments, at 3; Class 7 Comments of Auto Care Association & Consumer Technology Association (Auto Care & CTA Class 7 Initial Comments) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class7/class-07-initialcomments-auto-care-association.pdf>. Proponents argued that the law applicable to physical parts and tools should also apply to software that controls the vehicle’s function and operation as well as diagnostic software because software performs the same functions that have been controlled and operated by physical parts in older model vehicles.

²⁸⁴ Due to the time-sensitive nature of farming activities, small-scale farmers in rural areas are especially affected by lack of local access to OEM-authorized software tools and dealerships. See AFBF Class 7 Comments, at 4 (“Unless a local mechanic or servicer has acquired tools from an authorized dealer . . . the local mechanic cannot render expert assistance to the Farmer in operating, maintaining, or repairing agricultural equipment.”); *id.* at 14 (Declaration of Guy Mills, Jr.).

²⁸⁵ During the sixth triennial proceeding, the Register and Librarian concluded that diagnosis, repair, or lawful modification by owners of motorized land vehicles “may constitute a non-infringing activity as a matter of fair use and/or under the exception set forth in Section 117 of the Copyright Act of 1976 (17 U.S.C. § 117).”

use factor also favors a finding of fair use. The record does not indicate any change in the nature of the copyrighted works implicated in this class during the past three years, and thus the Register's conclusion during the previous rulemaking process still holds: the ECU software in vehicles is not especially expressive.²⁸⁷ The analysis of the third fair use factor is less conclusive.²⁸⁸ The record does not clearly show what portion of a copyrighted computer program must be used for the purpose of repair.²⁸⁹ Lastly, NTIA believes that the fourth factor weighs slightly in favor of fair use.²⁹⁰ Opponents' argument for negative market impact primarily focused on allowing circumvention of vehicles' entertainment systems. The proponents argued that the opponents did not show that the proposed exemption would adversely affect the market for or value of their copyrighted works. Indeed, OEM-authorized software repair tools have been available for well over a decade.²⁹¹ Further, the Register concluded during the last rulemaking "there is not a significant independent market" for OEMs-authorized

vehicle owners seeking third-party service to circumvent TPMS in their vehicles do so to conduct the necessary repair or lawful modification, not for the circumvention itself. At the hearing before the

repair software separate from the market for vehicles, and the opponents' evidence in the this rulemaking did not challenge this conclusion.²⁹² Further, NTIA weighs heavily the proponents' concerns about the anti-competitive impact and unreasonable obstacles that vehicle owners would have to endure without the benefit of a broader exemption.²⁹³

The opponents made two main arguments against the proposed exemption.²⁹⁴ First, opponents argued that third-party circumventions violate the Section 1201 anti-trafficking provisions.²⁹⁵ Second, opponents argued that the existence of a Memorandum of Understanding (MOU) supplied adequate access to authorized circumvention tools.²⁹⁶ NTIA disagrees with the opponents' statutory interpretation and characterizations of the MOU. As illustrated above, the proposal would allow for third party use of tools (at the direction of vehicle owners) to diagnose, repair, and lawfully modify their vehicles. This use is not primarily "for the purpose of circumventing a technological measure" that protects copyrights; the circumvention here is incidental.²⁹⁷ This proposed exemption seeks to afford vehicle owners all the benefits of vehicle ownership consistent with the DMCA's anti-trafficking provisions. NTIA does not believe that the proposed exemption will violate the anti-trafficking provisions, but that the proposed exemption will allow vehicle owners to receive the necessary assistance to exercise ownership rights that DMCA intended to leave intact.²⁹⁸

²⁹² 2015 Register's Recommendation, at 236 ("Proponents persuasively establish that computer programs on the majority of ECUs are only meaningful in connection with the vehicle, that the copies are generally sold only with the vehicle, and that the consumer pays for those copies when purchasing the vehicle.").

²⁹³ See Class 7 Reply Comments of Alex Adams (Adams Class 7 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_Adams.pdf ("This hurts the free market while allowing car makers to exercise too much control over vehicles that are not their property."); Class 7 Reply Comments of William Brown (Brown Class 7 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_Brown.pdf ("[S]upporting the free market"); Class 7 Reply Comments of Geoffrey Gross (Gross Class 7 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_Gross.pdf ("I have a mechanic I trust. Should I want to modify the software in the vehicle I paid for, I should be permitted."); Class 7 Reply Comments of American Farm Bureau Federation (AFBF Class 7 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_AFBF_NCGA_NFU.pdf ("Without an exemption specifically for farm equipment enabling such assistance, farmers' very livelihood is threatened due to short growing seasons and distance and time delays involved in getting help from authorized dealers.").

²⁹⁴ Auto Alliance Class 7 Opposition Comments, at 9 (nothing that "expanding the beneficiaries of the existing exemption to include [independent servicers] that would provide circumvention services to the public is clearly not permissible under the DMCA provisions governing this proceeding").

²⁹⁵ *Id.* at 8-9; see also 17 U.S.C. § 1201(a)(2), (b) (anti-trafficking provisions).

²⁹⁶ Auto Alliance Class 7 Opposition Comments, at 9-10.

²⁹⁷ 17 U.S.C. § 1201(a)(2)(A), (b)(1)(A).

²⁹⁸ NTIA believes that it is a logical extension of the Copyright Office's own analysis to say that Congress did not intend to apply the anti-trafficking provisions to third-party circumvention for a vehicle owner's personal need to diagnose, repair, or modify lawfully owned vehicle. See 1201 Study, at 54 ("[T]here are strong reasons to conclude that Congress did not intend to apply the manufacturing bar to exemption beneficiaries from producing their own circumvention tools for personal use.").

The proponents demonstrated that the MOU has a limited scope and cannot adequately protect all vehicle owner rights. Indeed, Auto Care’s and MEMA’s reply comments enumerated several features of the MOU that illustrated how limiting the MOU is for owners of software-enabled vehicles.²⁹⁹ In addition, despite opponents’ representation of its ubiquity, the MOU is not a standard-setting effort by any government agency or independent body. NTIA shares many proponents’ concern that the “[c]onsumers’ need for [circumvention tools] is in no way affected or displaced” by the existence of MOU because the MOU is necessary but not sufficient.³⁰⁰ Therefore, the limited enforceability and scope of the MOU cannot adequately remedy the harms proponents face under the existing exemption.³⁰¹

As an example of a further adverse effect under the existing exemption, a farmer in a rural area cannot seek help from his neighbor (who is not an authorized dealer) to repair his broken tractor if the repair requires circumvention of TPMs. Many factors might indicate that the most feasible solution at the farmer’s disposal would be to ask the neighbor for help, especially if the repair is likely to entail circumvention of TPMs and the neighbor happens to know how to repair the issue, or has developed his own tool, because other alternatives would be more costly and time-consuming for the farmer.³⁰²

Proponents showed that, given the ubiquity of software deployment in vehicles, diagnosis and repair have become more and more complicated, requiring specialized skills or knowledge that vehicle owners typically do not possess.³⁰³ The current exemption would require individual farmers to independently develop critical circumvention tools to repair their own vehicles when no authorized dealer is in the vicinity, no matter how infeasible the undertaking is for most farmers.³⁰⁴ Further, NTIA is concerned that without this expansion, the current

²⁹⁹ Class 7 Reply Comments of Auto Care Association (ACA Class 7 Reply Comments) at 4-6, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_Auto_Care.pdf.

³⁰⁰ Class 7 Reply Comments of eBay, Inc. (eBay Class 7 Reply) at 4, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class7/Class_07_Reply_eBay.pdf.

³⁰¹ See, e.g., Class 7 Comments of Consumer Technology Association (CTA Class 7 Initial Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class7/class-07-initialcomments-cta.pdf> (noting that the OEM repair tools included in the MOU remain “strictly proprietary” and “brand-limited” and require separate licenses).

³⁰² See AFBF Class 7 Comments and accompanying declarations. For example, the farmer’s tractor might have broken down in the middle of the harvest season, going to the closest authorized dealer might cost tens of thousands of dollars and days of delay, or the known workaround software solutions do not work on the exact model that the farmer has.

³⁰³ See *id.*

³⁰⁴ A large-scale farmer located relatively close to an authorized dealership might not run into much difficulty in complying with the existing exemption. However, proponents have demonstrated that, for the other farmers as well as many vehicle owners, if the proposed exemption is denied, their property rights and consumer interests will be, or will likely be, adversely affected in the next three years. See, e.g., AFBF Class 7 Comments, at 21, Declaration of John Doe (actual name known to counsel); Class 7 Comments of Consumers Union (Consumers Union Class 7 Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class7/class-07-initialcomments-consumers-union.pdf>; EFF Class 7 Comments, at 1.

limitation will continue to harm small local businesses (including independent auto parts stores), preventing them from providing necessary vehicle diagnosis and repairs.

Finally, the Section 1201 statutory factors favor adopting the proposed exemption. Under the first statutory factor, NTIA believes that the availability for use of copyrighted works would increase under the proposed exemption. Adopting the proposed exemption would remove existing obstacles to obtaining timely and affordable diagnosis, repair, and modification tools. This could make owning software-enabled vehicles a more positive experience for consumers. Proponents did not present evidence particularly relevant to analyzing the second and third statutory factors.³⁰⁵ The fourth factor supports adopting the proposed exemption because the “relevant markets will not suffer any harm cognizable under copyright law.”³⁰⁶ Opponents did not present evidence demonstrating that the value of the relevant copyrighted works would decrease simply because third-party servicers could repair vehicles on a case-by-case basis. Lastly, the additional factors that the Register cited in her rejection of the proposed exemption in 2015 are not present in the Seventh Triennial Section 1201 Rulemaking.³⁰⁷

NTIA recommends extending the current exemption to allow circumvention by third-party service providers to diagnose, repair and modify software-enabled vehicles on behalf of owners.

Distribution and Sale

Auto Care and CTA proposed an exemption to “permit companies with expertise in software development to develop and make circumvention and repair solutions available to servicers and consumers.”³⁰⁸ iFixit proposed an exemption to allow the “development and sale of repair tools.”³⁰⁹ Collectively, this proposed exemption seeks to permit third-party commercialization of software repair tools for vehicles in this class. No exemption currently exists that would permit this use.

NTIA position: NTIA opposes the proposed exemption. As discussed above, NTIA believes that the Librarian should allow owners of motorized land vehicles (and the third parties discussed above) to develop software tools for the diagnosis, repair, or modification of their own

³⁰⁵ 17 U.S.C. 1201(a)(1)(C) (“(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 . . .”).

³⁰⁶ EFF Class 7 Comments, at 13.

³⁰⁷ 2015 Register’s Recommendation, at 241-44 (Both DOT and EPA submitted letters to the Copyright Office, raising concerns regarding public safety and other compliance issues against granting the proposed exemption in 2015.).

³⁰⁸ ACA & CTA Class 7 Petition, at 3; *see also* Class 7 Comments of Motor & Equipment Manufacturers Association (MEMA Class 7 Initial Comments) at 3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class7/class-07-initialcomments-mema.pdf>.

³⁰⁹ iFixit Class 7 Petition, at 2.

vehicles.³¹⁰ However, the proposed exemption proposed is likely to constitute trafficking under Section 1201 because iFixit, Auto Care, and CTA focused on the marketing and sale of tools they have developed.

Analysis: Although the development of circumvention tools might not violate the anti-trafficking provisions when undertaken by third party servicers in vehicle repair shops for owners' personal use (as discussed above), the distribution of the same tools is a separate issue. If the repair shop only circumvents TPMs as an incidental part of an overall repair, then they likely have not violated the DMCA's anti-trafficking provisions. In contrast, if the software developer sells or distributes these circumvention tools, or if he solicits vehicle owners or repair people to use the circumvention tools, he has developed but does not repair vehicles at all, this may violate the DMCA's anti-trafficking provisions. The Librarian cannot grant an exemption that would be a violation of another section of 1201, let alone other existing laws.

Therefore, NTIA recommends denying the proposed exemption. Unlike the proposed exemption for third party service providers discussed above, proponents have focused this proposed exemption on the distribution and sale of circumvention tools and the Librarian should reject it.

NTIA Recommendation for Class 7 (Repair): NTIA proposes the following exemption language in order to allow consumers to take full advantage of the benefits that the proponents intended this class to confer on domestic vehicle owners:

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 entertainment systems for such vehicle, when circumvention is a necessary step to allow the diagnosis, repair or lawful modification of a vehicle function, or extraction of telematics diagnostic data.

Class 8 – Computer Programs – Video Game Preservation

Proponents seek renewal and expansion of the current video game preservation exemption, which currently includes:

- (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

³¹⁰ NTIA does not believe that this activity would implicate the DMCA's anti-trafficking provisions. See 17 U.S.C. § 1201(a)(2), (b).

- (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.

At a minimum, NTIA supports the proposed renewal of the exemption. EFF, the Library Copyright Alliance, and the University of Michigan Library Copyright Office each submitted petitions for renewal. As the Copyright Office noted in its NPRM, petitioners noted the continued need for the exemption in order “to preserve and curate video games in playable form,” and “demonstrated personal knowledge and experience” related to the exemption.³¹¹ Because petitioners demonstrated the continuing need for this exemption, and because it was unopposed, NTIA urges the Librarian to adopt an exemption that at minimum includes the previously exempted class of work and use cases.

The Museum of Art and Digital Entertainment (“The MADE”) seeks to expand the scope of the existing exemption “to further include multiplayer online games, video games with online multiplayer features, and massively multiplayer online games (MMOs), whether stored physically or in downloadable formats, and would add preservationists affiliated with archival

³¹¹ 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49,555.

institutions as users.”³¹² Another proponent, Public Knowledge, notes that “evolution in game development has increased reliance on server-side software while blurring the line between what the Office considers to be ‘complete’ games under the current exemption, and online multiplayer formats,”³¹³ and appears to go further than The MADE in advocating that the exemption cover games where “mandatory patches and updates... change key elements of the game.”³¹⁴

NTIA position: NTIA recommends some expansion and clarification of the current exemption, particularly to include preservation of video games where the user uses the server component—whaerponent (a(e)4 (t)-2 (he)4 (a(e)4BDC 0.)nt)][(2 (he)-6 (r)3 (e)4 (s)-5 ([(u)-Tw b)-1d0 >>BI

In light of these difficult issues, NTIA supports a narrower expansion of the exemption that attempts to enable preservation of more video games without suggesting applicability in situations where the activity is more likely to constitute copyright infringement—such as if the game can only be reproduced using expressive content stored on a server—and while bearing in mind the scope of preservation activities contemplated in Section 108. In addition to simplifying the regulatory text, we propose expanding the exemption to include situations where the server software performs various administrative tasks (as described above) in addition to any authentication function. While this will not address situations where creative game content is stored on the server and streamed to the client as needed, Ed Fries, a distinguished retired video game developer and preservationist, noted in a hearing that “typically, it’s not the assets that are streamed” to the client, in part because of bandwidth issues.³¹⁹ Instead, game servers more typically keep track of experience points, transactions among players, and other administrative tasks that could be re-implemented by dedicated preservationists working without knowledge of the original server code.³²⁰ This suggests that, despite the trend towards more server-dependent games, in many cases preservation without the original server software remains possible.

We also note that some of the scenarios presented on the record may be possible under the current exemption. In particular, we do not believe the current exemption prohibits institution-affiliated preservationists, such as volunteers, from engaging in circumvention while following the requirements of the current exemption, which enables circumvention to “allow preservation of the game in a playable form by an eligible library, archives or museum.”³²¹ At no point does the regulatory language specify that the institution can only use paid employees for this task. Furthermore, NTIA does not recommend explicitly including a term along the lines of “affiliated preservationist,” due to the potential for introducing confusing language or suggesting that any such preservationists may not need to be answerable to the institutions for which they are volunteering. NTIA recommends the following:

Computer programs in the form of video games, where circumvention is undertaken for the purpose of restoring access to single-player or multiplayer gaming functionality, either for personal gameplay or to allow preservation of the game in a playable form by a library, archives, or museum that is open to the public or routinely to external researchers, and where:

- (1) all or nearly all of the audiovisual content and gameplay mechanics reside on the player or institution’s lawfully acquired local copy of the game;
- (2) the developer and its agents have ceased support for particular games for a period of six months or more and have not restored support; and
- (3) activities by a library, archives, or museum 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 library, archives or museum.

³¹⁹ Testimony of Ed Fries, Seventh Triennial 1201 Rulemaking (April 13, 2018) at 73.

³²⁰ *Id.* at 72, 74-75.

³²¹ 37 C.F.R. § 201.40(b)(8)(i)(B).

Class 9 – Computer Programs – Software Preservation

No current exemption allows for preservation of computer programs aside from video games.³²² The Software Preservation Network (SPN) and the Library Copyright Alliance (LCA) proposed the following new exemption text:

Computer programs that have been lawfully acquired and which are no longer reasonably available in the commercial marketplace, for the purpose of preserving a computer program and/or a computer program-dependent material when a technological protection measure of a computer program renders either the computer program or computer program-dependent material inaccessible, provided that such activity is undertaken by an eligible library, archive, museum, or other cultural heritage institution, where such activities are carried out without any purpose of direct or indirect commercial advantage and the computer program is not distributed or made available to the public outside of the premises of eligible institutions.³²³

For the proposed exemption, “computer program” would be a set of statements or instructions used directly or indirectly in a computer in order to bring about a certain result, and “computer program-dependent material” would be a digital file where accessibility requires a computer program.³²⁴

NTIA Position: NTIA supports the proposal for a new exemption for Class 9: Computer Programs – Software Preservation, with modifications to clarify the scope of the exemption. NTIA finds that the proposed exemption would be sufficiently narrow if it is limited to computer programs “no longer reasonably available in the commercial marketplace,” for a use of preservation, and to eligible institutional users.³²⁵

Analysis: Proponents demonstrated sufficiently the class of devices, diverse TPMs, and a method of circumvention.³²⁶ Opponents claimed that including computer program-dependent

³²² See Class 8 discussion above. As explained below, the exemption for preservation being sought here is different from the current video game exemption.

³²³ See Class 9 Reply Comments of the Software Preservation Network (SPN Class 9 Reply Comments) at 18, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class9/Class_09_Reply_SPN.pdf.

³²⁴ See *id.* at 18. The proponent’s definition of a computer program mirrors that of the Copyright Act. 17 U.S.C. § 101.

³²⁵ Without the proposed exemption to circumvent the diverse TPMs on computer programs, the proponents assert, entire computer programs and computer program-dependent materials may be lost to future generations. See Class 9 Comments of the Software Preservation Network & Library Copyright Alliance (SPN & LCA Class 9 Comments) at 6, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class9/class-09-initialcomments-spn-lca.pdf>.

³²⁶ See SPN & LCA Class 9 Comments, at 5-6 (TPMs include, but are not limited to the following: product keys, passwords, online authentication, bad sector copy protection, time restrictions, CD-Checks, and Dongles); see also Class 9 Reply Comments of Andrew Berger (Berger Class 9 Reply Comments) at 3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments->

materials makes the exemption too broad and that it should be limited to obsolete works.³²⁷ NTIA is satisfied that circumvention would be limited to a clear, defined class of works – computer programs, to preservation uses, and to preservation-oriented institutional users.³²⁸

Proponents and opponents disagreed about whether the proposed exemption should apply to video games.³²⁹ That said, proponents demonstrated that the proposed exemption “[would] cover[] a different set of TPMs and preservation activities” than the video game exemption (see class 8).³³⁰ In their reply comments, proponents note that anti-circumvention provision’s adverse effects are the same on video games as with other software; furthermore, proponents highlight several video games for which the anti-circumvention provision may prevent preservation, even with the renewal of current video game exemption.³³¹ NTIA agrees with proponents that the

[031418/class9/Class_09_Reply_Berger.pdf](#) (RealPublisher and RealPlayer “returned the same error message indicating that the versions on disk had ‘expired’ and that the user should install a new version.”).

³²⁷ See Class 9 Opposition Comments of Joint Creators II (Joint Creators II Class 9 Opposition Comments) at 3, 5, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class9/Class_09_Opp'n_Joint_Creators_II.pdf (the proposed class would include “every access control applied to every copyrighted work accessible in a digital format.”); see also Class 9 Opposition Comments of BSA | The Software Alliance (BSA Class 9 Opposition Comments) at 4, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class9/Class_09_Opp'n_BSA.pdf. DVD CCA and AACS LA also argued that the exemption should not extend to DVDs and Blu-ray Discs. See Class 9 Opposition Comments of the DVD Copy Control Association and the Advanced Access Content System Licensing Administrator (DVD CCA & AACS LA Class 9 Opposition Comments) at 3, https://www.copyright.gov/1201/2018/comments-021218/class9/Class_09_Opp'n_DVD_CCA_&_AACS_LA.pdf (“material submitted in support of this exemption, however, do not mention CSS, DVD, AACS, or Blu-ray Discs.”).

³²⁸ See SPN Class 9 Reply Comments, at 3-6. Proponents have further suggested limiting the exemption to apply only to computer programs “no longer reasonably available in the commercial marketplace.” See *id.* at 9; April 12 Hearing Transcript (broad exemption is necessary as “Some of them may have been developed by that company for itself. Some of it might have been standard at the time, but are no longer available. Some of it might be something that is some kind of technological protection that is still available from someone, but again, not, but it's, you know, not available to the library that's trying to preserve it”).

³²⁹ Opponents argued that the exemption should not allow for circumvention on video games, as the proposed exemption would go beyond the confines of the existing video game exemption. See Class 9 Opposition Comments of the Entertainment Software Association (ESA Class 9 Opposition Comments) at 5, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class9/Class_09_Opp'n_ESA.pdf (“The existing video game exemption was predicated on a substantial record specific to video games . . . and strikes a careful balance between the interests of preservationists and copyright owners.”). Proponents responded that video games share common adverse effects, non-infringing uses, and statutory factors as all forms of computer programs. See SPN Class 9 Reply Comments, at 7.

³³⁰ See SPN Class 9 Reply Comments, at 7 (the proposed exemption includes preservation of video games that are not necessarily “reliant on a server”); April 12 Hearing Transcript, at 241 (“[I]f it’s a server-based TPM on a video game, then I think that [the current video game] exemption should apply.”).

³³¹ See SPN Class 9 Reply Comments, at 7-8 (discussing the video games *DarkSide* and *BattleDroidz*).

proposed exemption should cover all computer programs, including video games, which meet the marketplace unavailability condition.

Proponents and opponents also debated whether adding “other cultural heritage institutions” as users would be appropriate.³³² As proponents note, there are “organizations that may not classify themselves as libraries, museums—perhaps due to a lack of size or resources—but . . . have nevertheless taken on a responsibility for the preservation and stewardship of cultural heritage.”³³³ NTIA suggests the Librarian adopt the eligibility criteria in the Copyright Office’s Section 108 Discussion Document to define properly the scope of cultural heritage institutions in this context.³³⁴ Proponents generally supported these criteria at the hearing, and some opponents noted that adoption would help allay their concerns.³³⁵ Furthermore, the inclusion of “other cultural heritage institutions” reflects a continuing trend that institutions falling outside of traditional definitions of libraries and archives are routinely engaged in similar preservation efforts in the digital age.³³⁶

Another disagreement centered on whether the Librarian should include the term “computer program-dependent material” in the exemption text.³³⁷ The proposed exemption

³³² Opponents have argued that adding “other cultural heritage institutions” as users of the proposed exemption is ambiguous and amorphous. *See* Joint Creators II Class 9 Opposition Comments at 3, 5 (finding “‘other cultural heritage institutions’ is an undefined term in the proposal”). April 12 Hearing Transcript, at 250 (“The concern was raised by the opponents is that ‘other cultural heritage institution’ is sort of an ambiguous, amorphous term.”).

³³³ SPN Class 9 Reply Comments, at 6. (internal quotations and citations omitted). For example, the proponents noted that the Electronic Literature Organization, “which runs an archive of important electronic literature, may not formally be a library, museum, or archive, but shares their essential characteristics and is dedicated to preservation of electronic works in such formats as Storyspace, HyperCard, and Flash.” *Id.*

³³⁴ In addition to the Section 108(a) requirements for libraries and archives, the Discussion Document proposes the following conditions for Section 108 eligibility: “(1) the institution has a public service mission; (2) the institution has trained staff or volunteers who provide professional services normally associated with a library, archives, or museum; (3) the institution’s collections are composed of lawfully acquired and/or licensed materials; and (4) the institution implements reasonable digital security measures.” U.S. Copyright Office, *Section 108 of Title 17: A Discussion Document of the Register of Copyrights*, at 19 (Sept. 2017) [hereinafter Section 108 Discussion Document],

<https://www.copyright.gov/policy/section108/discussion-document.pdf>. We think that adopting such criteria for cultural heritage institutions is appropriate for the proposed exemption. However, we do not think that such additional criteria should apply to other users of the proposed exemption—libraries, archives, and museums—as the meaning and activities of those institutions are well-understood.

³³⁵ April 12 Hearing Transcript, at 250-56.

³³⁶ *See* SPN Class 9 Reply Comments, at 6 (“the Register should include museums and other cultural heritage institutions in this proposed class, because their preservation efforts are similar to the efforts of others in the proposed class, and there is no reasonable distinction between museums (on the one hand) and libraries and archives (on the other hand) when it comes to preservation.”); *see also* 2015 Register’s Recommendation, at 342 (finding that the record supported the inclusion of museums as users of the then-proposed videogame exemption even though Section 108 on its face is limited to libraries and archives).

³³⁷ Opponents have argued that the term “computer program-dependent material” should not be included in the exemption text. *See* April 12 Hearing Transcript, at 187 (“I don’t think that there’s any reason to

would be limited to TPMs on computer programs, and not on computer program-dependent materials; rather, a user would not be able to access those materials without preserving the software protected by a TPM.³³⁸ Even a “backwards-compatible” option available in modern software today may not offer the same degree of fidelity as the original computer program that ran the computer program-dependent material.³³⁹ NTIA believes the term “computer program-dependent material” should be in the exemption.

The proposed use would likely be a non-infringing fair use. Under the first factor, preservation benefits the public interest, is a non-commercial activity, and is a transformative use.³⁴⁰ Moreover, courts have recently favored digital preservation efforts that provide a public benefit, under which the proposed exemption would fall.³⁴¹ The second and third factors weigh in favor of fair use, as computer programs and computer program-dependent materials are often functional works that users would copy only for preservation.³⁴² Lastly, preservation of a work would not interfere with the marketplace for the original work, given that the exemption would be limited to computer programs not reasonably available in the commercial marketplace.³⁴³ NTIA therefore believes the fourth factor favors the exemption, as preservation is unlikely to

actually refer to dependent materials at all in any exemption if what you're trying to circumvent to gain access to is only a piece of software that then gives you lawful access to another type of work without circumvention of any additional TPM.”).

³³⁸ See *id.* at 220 (“And our goal here was to make very clear that if you are circumventing the TPM for the purposes of preserving the computer-dependent material, not just the computer program, that’s still a thing covered by the exemption”). For example, a computer program-dependent material could include an architectural drawing using an early version of AutoCAD, where files might require a particular version of the software to be accessed. See *id.* at 219. AutoCAD files contain information that cannot be stored in other file formats, and in order to preserve AutoCAD files, preservationists must have the AutoCAD version compatible with the AutoCAD file and thus “should be permitted to preserve the computer programs required to access these files.” SPN Class 9 Reply Comments, at 4.

³³⁹ April 12 Hearing Transcript, at 222 (“[E]ven software that is theoretically backwards-compatible doesn’t necessarily produce all of the same information . . . as the original version of the software that the file was written in.”).

³⁴⁰ See SPN & LCA Class 9 Comments, at 10-11.

³⁴¹ In *Authors Guild, Inc. v. Google*, as proponents noted, the District Court found the first factor weighed in favor of fair use as digitization of copyrighted works offered a public benefit of book preservation. See *id.* at 10 (citing *Authors Guild, Inc. v. Google, Inc.*, 954 F. Supp. 2d 282, 293 (S.D.N.Y. 2013), *aff’d sub nom. Authors Guild, Inc. v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015)).

³⁴² See *id.* at 11-12. While the second and third factors may be closer calls, they are not dispositive.

³⁴³ See *id.* at 12-13. Although an argument could be made that the market for commercially available computer programs that offer a “backwards compatible” option may be affected, often data may be lost as part of the backwards compatibility process and there is value in preserving the computer programs in and of themselves. See *id.* at 7-8 (“Backwards compatibility sometimes relies on converting the original data into a contemporary file format; this can cause data loss or be impossible without access to the original software.”); see also *id.* at 3 (“the value of software preservation is not in the mere storage of digital information, but in providing this repository of digital information in a useable format to researchers, scholars, and government agencies.”). In any event, it seems unlikely that a significant amount of users would utilize years-old computer programs inside eligible institutions in lieu of using newer computer programs at their home or workplace. It is important to note that the use of the work would be within a closed institution and the work would not be publicly distributed.

harm the marketplace for the original work. Courts tend to favor preservation and educational uses, and the fair use factors tend to suggest that the proposed exemption would have non-infringing uses. Thus, NTIA believes that the proposed use of preservation would likely be non-infringing under a fair use analysis.

Opponents argued that the Librarian should not consider fair use for preservation exemptions, but rather such exemptions should be limited to non-infringing uses pursuant to Section 108.³⁴⁴ However, NTIA agrees with proponents that Section 108 would be inadequate to protect digital works and should not necessarily be the only non-infringing use considered in the rulemaking process.³⁴⁵ While NTIA is optimistic that efforts to modernize Section 108 will be successful, this rulemaking should not wait for such changes.³⁴⁶

Proponents have demonstrated that the prohibition adversely affects the eligible institutions. They are unable to preserve computer programs and computer program-dependent materials.³⁴⁷ No reasonable alternative to circumvention exists for eligible institutions.³⁴⁸ Without the exemption, an eligible institution must seek permission from the copyright holder to preserve a work, but searching for a copyright holder can be costly, time-consuming, and is often

³⁴⁴ See BSA Class 9 Opposition Comments, at 3; Joint Creators II Class 9 Opposition Comments, at 4-5 (“[T]his proceeding should not be used to ‘break new ground on the scope of fair use’ as a substitute for attempting to reform 108.”); 17 U.S.C. § 108. At the hearing, opponents argued that the proponents’ interpretation of *HathiTrust* and *Google* is too far reaching, the proposed class is too broad for a fair use analysis, and if a fair use analysis is performed, the fourth factor may weigh against a finding of fair use. See April 12 Hearing Transcript, at 206-207 (“I don’t think those cases go as far as they’re reading them”) (“[F]air use involves a case by case analysis that requires the application of the four mandatory factors to the particular facts of each particular use.”) ([T]here’s an incentive to preserve [video games] because they are often rereleased, and so there can be market harm”).

³⁴⁵ See SPN Class 9 Reply Comments, at 12 (“[T]he Register in prior proceedings recommended exemptions for preservation that are non-infringing but not covered under § 108.”); see also April 12 Hearing Transcript, at 213 (“[T]he problems with section 108 obsolescence requirements are the problems that keep software from being preserved and keeps software from being accessibly, even in cases where folks own a copy.”) As proponents note, “[T]he Copyright Office and the Library of Congress acknowledge that Section 108, by itself, provides inadequate protection for the digital preservation activities of librarians and archivists. See SPN Class 9 Reply Comments, at 12; see also Section 108 Discussion Document, at 1 (“The current section 108 language is insufficient to address digital works and digital transmissions, does not reflect the way that libraries and archives actually operate, and excludes museums, among other constraints.”); April 12 Hearing Transcript, at 214 (“[A]s we saw, in the cases we’ve already cited that have happened since 2006, there’s a wide variety of uses that are considered non-infringing that hadn’t been conceptualized when these exemptions were previously considered.”) Moreover, while Section 108 reflects the special value of preservation in the Copyright Act, Section 108 should not confine or limit the bounds of fair use under Section 107. 17 U.S.C. § 108(f)(4) (“Nothing in this section . . . in any way affects the rights of fair use as provided by section 107. . . .”).

³⁴⁶ April 12 Hearing Transcript, at 214-15.

³⁴⁷ See SPN & LCA Class 9 Comments, at 6-9. Without preservation, entire computer programs and computer program-dependent material may be lost. See *id.* at 7 (software preservation is especially important in a time when the amount of born-digital works continues to increase).

³⁴⁸ See *id.* at 9.

unsuccessful.³⁴⁹ Eligible institutions may attempt to use software with backwards compatibility, but this process is inadequate and can distort the original work.³⁵⁰

Proponents have demonstrated that the Section 1201 statutory factors favor adopting the proposed exemption for software preservation. The availability of copyrighted works would increase, as institutions would preserve software and software-dependent materials.³⁵¹ The primary purpose of preservation is to increase availability of software and software-dependent materials for archival, preservation, educational, criticism, research, teaching, and scholarship purposes.³⁵² Furthermore, preservation would be limited to computer programs that are not “reasonably available in the commercial marketplace” should have little or no impact on the commercial marketplace.³⁵³

³⁴⁹ *See id.* at 9 (“Even when the copyright owner is known, different components of a single piece of software can be owned by different parties.”); *see also id.* at 9 (even if a copyright holder is discovered, permission to circumvent the TPM can ultimately be denied).

³⁵⁰ *See id.* at 7-8 (“Backwards compatibility . . . can cause data loss or be impossible without access to the original software.”).

³⁵¹ *See id.* at 19.

³⁵² *See id.* at 19-20.

³⁵³ *See id.* at 21; SPN Class 9 Reply Comments, at 9.

NTIA Recommendation for Class 9 (Software Preservation): NTIA recommends that the Register and Librarian adopt the following exemption language:

- 1) Computer programs that have been lawfully acquired and which are no longer reasonably available in the commercial marketplace, for the purpose of preserving the computer program or a computer program-dependent material, when circumvention is undertaken by an eligible library, archive, museum, or other cultural heritage institution, where such activities are carried out without any purpose of direct or indirect commercial advantage and the computer program is not distributed or made available to the public outside of the premises of eligible institutions.
- 2) For purposes of this exemption, the following definitions shall apply:
 - (i) A library, archives or museum is considered “eligible” when their collections are open to the public and/or are routinely made available to researchers who are not affiliated with the library, archives or museum.
 - (ii) A cultural heritage institution is considered “eligible” when their collections are open to the public and/or are routinely made available to researchers who are not affiliated with the cultural heritage institution; and
 - a. The institution has a public service mission;
 - b. The institution has trained staff or volunteers who provide professional services normally associated with a library, archive, or museum;
 - c. The institution’s collections are composed of lawfully acquired and/or licensed materials; and
 - d. The institution implements reasonable digital security measures.
 - (iii) A “computer program” is a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.
 - (iv) A “computer program-dependent material” is a digital file which requires a compatible computer program in order to be accessible.

Class 10 – Computer Programs – Security Research

The current security research exemption allows for circumvention of:

- (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.³⁵⁴

At a minimum, NTIA supports the proposed renewal of the exemption. Six parties submitted petitions to renew the current security research exemption.³⁵⁵ The proponents argued that the relevant factual and legal record in this class has not changed materially since the 2015 proceeding, and that the need for the exemption remains.³⁵⁶ We agree with the Copyright Office

³⁵⁴ See 37 C.F.R. § 201.40(b)(7).

³⁵⁵ See Class 10 Renewal Petition of Security Researchers (Security Researchers Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0011&attachmentNumber=1&contentType=pdf>; Class 10 Renewal Petition of MEMA (MEMA Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0029&attachmentNumber=1&contentType=pdf>; Class 10 Renewal Petition of CDT (CDT Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0016&attachmentNumber=1&contentType=pdf>; Class 10 Renewal Petition of Libiquity LLC (Libiquity Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0007&attachmentNumber=1&contentType=pdf>; Class 10 Renewal Petition of Ed Felten, J. Alex Halderman and ORI (Felten Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0023&attachmentNumber=1&contentType=pdf>; Class 10 Renewal Petition of Hugo Campos (Campos Class 10 Renewal Petition), Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0018&attachmentNumber=1&contentType=pdf>.

³⁵⁶ See, e.g., Security Researchers Class 10 Renewal Petition, at 3 (noting “personal knowledge that the need for the exemption continues to exist”); MEMA Class 10 Renewal Petition, at 3 (“MEMA therefore supports renewal of the exemption for another three years.”); Libiquity Class 10 Renewal Petition, at 3 (noting that the security research exemptions “remain necessary and should be renewed”); Campos Class 10 Renewal Petition, at 3 (“A renewal would contribute to continued improvements in the quality and

that the petitions for renewal demonstrated the continuing need and justification for the exemption.³⁵⁷ No party filed an opposition to renewing this exemption.³⁵⁸

The Center for Democracy and Technology (CDT), Professors Felten and Halderman, and Professor Green proposed a modification of the current security research exemption.³⁵⁹ Essentially, proponents requested the removal of various restrictions in the current exemption.³⁶⁰

NTIA Position: NTIA supports the proposal to modify the exemption for Class 10: Computer Programs—Security Research. NTIA believes that proponents have made the necessary statutory showing to merit the modification of the security research exemption. NTIA also agrees with the view of the Department of Justice’s Computer Crime and Intellectual Property Section (CCIPS) that “the DMCA is not the sole nor even the primary legal protection preventing malicious tampering with [devices such as voting machines or motorized land vehicles], or otherwise defining the contours of appropriate research.”³⁶¹

safety of these medical devices.”); CDT Class 10 Renewal Petition, at 3 (“[N]othing has changed to diminish or eliminate the value of security research nor the exemption upon which it relies.”).

³⁵⁷ 2017 Notice of Proposed Rulemaking, 82 Fed. Reg. at 49555.

³⁵⁸ *Id.*

³⁵⁹ Class 10 Petition of Center for Democracy & Technology (CDT Class 10 Petition) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class10/class-10-newpetition-cdt.pdf>; Class 10 Petition of Ed Felten & J. Alex Halderman (Felten Class 10 Petition) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class10/class-10-newpetition-felten-halderman.pdf>; Class 10 Petition of Matthew Green (Green Class 10 Petition) at 2-3, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/petitions-091317/class10/class-10-newpetition-green.pdf>.

³⁶⁰ Proponents suggest removing the requirement that research can take place only on devices primarily designed for use by individual consumers, motorized land vehicles, or certain medical devices. *See, e.g.*, Class 10 Comments of the Center for Democracy & Technology (CDT Class 10 Comments) at 3-4, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-cdt.pdf>; Class 10 Comments of Ed Felten and J. Alex Halderman (Felten & Halderman Class 10 Comments) at 7, Docket No. 2017-10 <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-felten-halderman.pdf>; Class 10 Comments of the Consumers Union (CU Class 10 Comments) at 4, <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-consumers-union.pdf>; Class 10 Comments of the U.S. Public Policy Council of the Association for Computing Machinery (USACM Class 10 Comments) at 2, Docket No. 2017-10 <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-usacm.pdf>. Proponents have also requested removal of language limiting the use of information derived from the research activity, and other caveats requiring that users conduct all research “in a controlled environment;” perform it “solely” for good-faith security research purposes; and “not violate any applicable law.” Professor Green specifically proposed replacing the current exemption with NTIA’s recommended language from the 2015 proceeding, effectively removing the restrictions highlighted by the other petitions. *See* Class 10 Comments of Matthew Green (Green Class 10 Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-green.pdf>.

³⁶¹ *See* Letter from John T. Lynch, Jr., Chief, U.S. Department of Justice, to Regan Smith, Register of Copyrights, at 3 (June 28, 2018) (2018 CCIPS Letter), https://www.copyright.gov/1201/2018/USCO-letters/USDOJ_Letter_to_USCO.pdf.

Analysis: Proponents have shown that the proposed class includes copyrighted works protected by technological protection measures.³⁶² NTIA believes that there is sufficiently detailed evidence in the record of the TPMs and methods of circumvention in this class.³⁶³ Proponents have argued convincingly that, inasmuch as the uses implicate copyrighted works, the uses are non-infringing under Section 117 or they are non-infringing fair uses.³⁶⁴ Indeed, NTIA believes that the uses described are similar or identical to those allowed by the current

exemption would allow for the same purpose and character of use as the current exemption. The second fair use factor, the nature of the work, weighs in favor of fair use. As the Register found in previous proceedings, a computer program operating a device is likely to be “largely functional in nature.”³⁶⁹ Under the third fair use factor, security researchers may need to copy a portion of the work or the full work.³⁷⁰ So long as the use is transformative, and the user only copies what is required for a valid use, the third factor weighs in favor of fair use. Under the fourth factor, a modified exemption would likely not harm the market for the copyrighted work. As is the case with previous proceedings, good-faith security research does not usurp the market for the original work.³⁷¹ Based on this analysis, NTIA believes the requested uses are likely fair uses, and thus non-infringing.³⁷²

Proponents asserted that the five limitations in the exemption adversely affect or are likely to adversely affect users of this class of work. Opponents argued that if the Librarian removed the limitations in the current exemption, the exemption would no longer be “narrow and focused,” as recommended by the Copyright Office.³⁷³ NTIA believes that proponents have made their case that, even in the absence of the five limitations, a modified exemption would be sufficiently “narrow and focused for the purposes of Section 1201.”³⁷⁴

Removal of the device limitation: Proponents have made the case that the current exemption’s language limiting circumvention to specific categories of devices adversely affects

³⁶⁹ See Felten & Halderman Class 10 Comments, at 9, 15 (citing 2015 Register’s Recommendation, at 301); Green Class 10 Comments, at 5.

³⁷⁰ See Felten & Halderman Class 10 Comments, at 9, 15; Green Class 10 Comments, at 5.

³⁷¹ Felten & Halderman Class 10 Comments, at 16-17; Green Class 10 Comments, at 5-6. Under *Campbell*, “there is no protectable derivative market for criticism.” *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 592 (1994). And as the Register previously found, speculative concerns regarding reputational harms are not the concern of copyright law. Felten & Halderman Class 10 Comments, at 9-10, 16 (citing 2015 Register’s Recommendation, at 302). *Contra* ESP Class 10 Opposition Comments, at 20. This finding still applies.

³⁷² Again, the proposed uses here are similar in relevant respects to those that the Register and Librarian found non-infringing in past proceedings. See, e.g., 2010 Final Rule, 75 Fed. Reg. at 43833; 2015 Final Rule, 80 Fed. Reg. at 65956.

³⁷³ Class 10 Opposition Comments of BSA | The Software Alliance (BSA Class 10 Opposition Comments) at 2-5, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class10/Class_10_Opp'n_BSA.pdf; ESP Class 10 Opposition Comments, at 17; Joint Creators II Class 10 Opposition Comments, at 5; Class 10 Opposition Comments of the Software and Information Industry Association (SIIA Class 10 Opposition Comments) at 3, https://www.copyright.gov/1201/2018/comments-021218/class10/Class_10_Opp'n_SIIA.pdf.

³⁷⁴ Generally, the App Association states that “[t]he practices of security research, encryption research, and reverse engineering must be balanced with the need to adequately maintain the integrity of software using TPMs like authentication and encryption.” Class 10 Opposition Comments of Act | The App Association (ACT Class 10 Opposition Comments) at 3, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class10/Class_10_Opp'n_App_Association.pdf. NTIA agrees with this statement. However, we do not believe that the record in this proceeding shows that a modified security research exemption would compromise the integrity of these software applications. Indeed, the record shows that a modified exemption that did not include the five limitations at issue would likely resolve the adverse effects proponents discuss.

or is likely to adversely affect users in this class.³⁷⁵ Proponents have demonstrated that the device limitation is unclear as currently written, and that this lack of clarity is deterring good-faith security research.³⁷⁶ Proponents have also shown that it is unclear whether the current exemption allows for research on “software and access controls increasingly embedded in a wide range of . . . critical systems,” such as ATMs and infrastructure-to-vehicle communication systems.³⁷⁷ Professors Felten and Halderman presented a list of “important examples of research projects [in various categories] that researchers avoid because the consumer device category is ambiguous.”³⁷⁸

Opponents argued that the removal of the device limitation would render the exemption impermissibly broad, as it would not be applicable to a sufficiently specific class of copyrighted works, and would further result in public safety and security concerns.³⁷⁹ Proponents replied that the Register adopted the device limitation in 2015 because the record failed to support other categories of devices and not because of concerns about infringing uses, exceeding 1201 statutory authority, or public safety.³⁸⁰ Proponents have included other types of devices in the record and argued that “there is no reason to enumerate specific categories at all, given that software technology and internet connectivity are increasingly ubiquitous.”³⁸¹ NTIA believes

³⁷⁵ See, e.g., Felten & Halderman Class 10 Comments, at 18-21.

³⁷⁶ For example, the requirement that research be performed in devices designed for “use by individual consumers” could be “interpreted narrowly to refer to any device that a consumer individually and directly purchases, owns, and uses . . . [or] broadly to incorporate any device that a consumer indirectly uses.” *Id.* at 19.

³⁷⁷ CDT Class 10 Comments, at 1-4.

³⁷⁸ The list is as follows: building automation systems, commercial networking equipment, traffic control systems, avionics systems, drones, cryptographic hardware modules, Internet of Things devices, industrial control systems, and devices that interact with the public Internet, but are not individually known to researchers. Felten & Halderman Class 10 Comments, at 19-20 (citing Cyber Physical Systems Public Working Group, National Institute of Standards and Technology (NIST), *Framework for Cyber-Physical Systems Release 1.0* (May 2016), https://s3.amazonaws.com/nist-sgcps/cpspwg/files/pwgglobal/CPS_PWG_Framework_for_Cyber_Physical_Systems_Release_1_0Final.pdf; Keith Stouffer et. al., *Guide to Industrial Control Systems (ICS) Security*, NIST Special Publication 80-82 Revision 2, National Institute for Standards and Technology (May 2015), <http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-82r2.pdf>, 37-38 (Documentary Evidence)).

³⁷⁹ BSA Class 10 Opposition Comments, at 5-6, Joint Creators II Class 10 Opposition Comments, at 5-7; Auto Alliance Class 10 Opposition Comments, at 16. Specifically, Joint Creators II stated that removing this limitation would allow access to corporate databases, a category the Register expressly excluded in 2015. Joint Creators II Class 10 Opposition Comments, at 7 (citing 2015 Register’s Recommendation, at 252).

³⁸⁰ Class 10 Reply Comments of Ed Felten, J. Alex Halderman and the Center for Democracy & Technology (Felten Class 10 Reply Comments) at 4, https://www.copyright.gov/1201/2018/comments-031418/class10/Class_10_Reply_Felten_Halderman_CDT.pdf.

³⁸¹ See USACM Class 10 Comments, at 2.

that proponents have provided enough evidence regarding a range of devices to warrant removal of the device limitation.³⁸²

Further, as noted by CCIPS, the “individual consumers” designation “is amenable to different interpretations, and may not provide the degree of certainty necessary for prospective security researchers to be reasonably sure that their activities will be exempted.”³⁸³ CCIPS also notes that “[i]n some cases, vulnerabilities contained in industrial grade servers or networking equipment may present even greater risks to the public than security flaws in consumer goods, highlighting the importance of legitimate security research on such devices.”³⁸⁴ NTIA agrees with these views.

Removal of the controlled environment limitation: Proponents have made the case that the current exemption language that circumvention must be “carried out in a controlled environment designed to avoid any harm to individuals or the public” adversely affects or is likely to adversely affect users in this class.³⁸⁵ Proponents have demonstrated that this limitation is ambiguous and prevents researchers from engaging in good-faith security research in real-life environments.³⁸⁶ As CCIPS notes, “in some circumstances effective research may require experiments to be conducted in realistic conditions in the field” and “in some cases, minimizing the risk of harm may require ‘real world’ testing outside of a lab-like controlled environment.”³⁸⁷

Opponents have noted that the controlled environment limitation exists to “mitigate the risks to the public that can arise when security research is performed haphazardly.”³⁸⁸ However, the record indicates that the controlled environment limitation often inhibits research efforts that could increase public safety.³⁸⁹ Proponents have demonstrated that research performed pursuant to the controlled environment limitation largely lacks external validity, which is necessary to promote security research and public safety.³⁹⁰ Additionally, the controlled environment

³⁸² NTIA’s proposed exemption language includes a requirement that “circumvention is initiated by the owner of the copy of the computer program or with the permission of the owner of the copy of the computer program,” which would appropriately limit the exemption.

³⁸³ 2018 CCIPS Letter, at 4.

³⁸⁴ *Id.*

³⁸⁵ Felten & Halderman Class 10 Comments, at 2.

³⁸⁶ *Id.* at 2, 21; *see also* Felten Class 10 Reply Comments, at 15 (stating that the controlled environment limitation “limits important testing in real-life environments that is necessary to ensure the secure day-to-day operation of computer systems.”). Because the current exemption does not define “controlled environment,” “researchers are less likely to engage in such research because they may be exposed to liability.” Felten & Halderman Class 10 Comments, at 5 (internal citation omitted).

³⁸⁷ 2018 CCIPS Letter, at 4-5.

³⁸⁸ BSA Class 10 Opposition Comments, at 5. Opponents argued that elimination of a controlled environment requirement would likely result in public harm. *See* Auto Alliance Class 10 Opposition Comments, at 14; ESP Class 10 Opposition Comments, at 13; Joint Creators II Class 10 Opposition Comments, at 8.

³⁸⁹ *See* Felten & Halderman Class 10 Comments, at 21-22.

³⁹⁰ *See* Felten & Halderman Class 10 Comments, at 22 (contending that researchers are less able to “generalize from data and theories applied in the laboratory to the real world outside the lab”). External validity is essential to increase public safety as “research in uncontrolled environments allows researchers

limitation is unnecessary to the extent that good-faith security researchers adhere to norms and customs such as responsible vulnerability disclosure, properly obtaining consent, and avoiding public harm.³⁹¹ NTIA believes that proponents have provided sufficient evidence of adverse effects to allow for the elimination of the controlled environment limitation.³⁹²

Replacement of the other laws limitation: Proponents have made the case that the current exemption language that circumvention “not violate any applicable law” adversely affects or is likely to adversely affect users in this class.³⁹³ Conditioning the exemption on compliance with all other laws creates uncertainty and risk for researchers, as proponents noted that the limitation “potentially exports the DMCA’s harsh criminal and civil liability into other non-copyright legal regimes.”³⁹⁴ Under the other laws limitation, security researchers who violate other laws (such as the Computer Fraud and Abuse Act (CFAA)) are also potentially in violation of the DMCA, regardless of whether the researcher is otherwise acting within the bounds of the exemption.³⁹⁵ More importantly, security researchers whose activities likely do not violate other laws are nevertheless likely to be deterred by this provision, which has been interpreted by university counsel and other attorneys as exposing their clients and institutions to excessive risk.³⁹⁶

Opponents argued that to the extent ambiguity exists, the ambiguity is in relation to the other laws rather than the limitation.³⁹⁷ For example, opponents argued that Section 1201(j)

to measure variables from undetected sources, clarify causation from correlation, and improve reliability and verification.” *See id.* at 22.

³⁹¹ *See id.* at 31.

³⁹² NTIA believes removal of the ambiguous controlled environment limitation would increase public safety through broader good-faith security research capability. Furthermore, NTIA agrees with proponents that defining the contours of a controlled environment “lies nowhere near the ambit of copyright law or policy.” *id.* at 21. NTIA agrees with CCIPS’s assessment that “the DMCA’s anti-circumvention provisions are not the most effective or appropriate vehicle for addressing concerns about security research methods.” 2018 CCIPS Letter, at 4.

³⁹³ *See* Felten & Halderman Class 10 Comments, at 2.

³⁹⁴ *See id.* at 4-5; Class 10 Comments of Rapid7, *et al.* (Rapid7 Class 10 Comments) at 2, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class10/class-10-initialcomments-rapid7-et-al.pdf> (arguing that “violations of other laws carry their own penalties, remedies, and enforcement mechanisms separate from copyright”); *see also* April 10 Hearing Transcript (“The other laws limitation here allows companies to add liability under two statutes to their threat arsenal, essentially contract enforcement.”).

³⁹⁵ *See* Class 10 Reply Comments of Ed Felten, *et al.* (Felten Class 10 Reply Comments) at 24, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class10/Class_10_Reply_Felten_Halderman_CDT.pdf (“[A] circumvention amounting to a violation of the CFAA should be penalized under that statute, but it is unclear why researchers should also be penalized under Section 1201 for an activity otherwise permitted by an exemption from Section 1201.”).

³⁹⁶ *See, e.g.,* Testimony of Harry Geiger, Seventh Triennial 1201 Rulemaking (April 10, 2018) at 186-187 (arguing that the inclusion of all laws in the exemption, not only computer crime laws, creates “a tremendous amount of uncertainty” for good-faith security researchers).

³⁹⁷ Auto Alliance Class 10 Opposition Comments, at 12 (stating that “uncertainty would still exist even if the Illegality Limitation were eliminated because researchers must still comply with the law”).

indicates congressional intent to ensure that security research involving circumvention not violate other laws.³⁹⁸ Proponents responded that the Register and Librarian should not rely solely on the structure of 1201(j) as it “may not have helped Congress fully achieve its aim to enable good-faith security research.”³⁹⁹ Furthermore, proponents argued that eliminating the other laws limitation will eliminate ambiguity and will not result in unlawful circumventions as exemptions “do not preclude liability under any other laws, which are already sufficiently deterrent.”⁴⁰⁰

NTIA urges adoption of an alternative to the other laws limitation, which would be less of an obstacle to good-faith security researchers (while maintaining a reasonable note of caution). The regulatory text should instead include a statement that the exemption “does not obviate the need to comply with [all] other applicable laws and regulations.”⁴⁰¹ As discussed above, the existing other laws language has a chilling effect on legitimate security research that would otherwise comply with laws such as the CFAA. NTIA believes that proponents have made the necessary showing to allow for replacement of the other laws limitation with NTIA’s recommended statement.⁴⁰² NTIA emphasizes that nothing in this 1201 proceeding or in the exemptions the Librarian will promulgate affect a party’s responsibility to comply with other laws.⁴⁰³ NTIA proposes this exemption language to communicate the contours of this rulemaking clearly to the security research community and the public.

Restatement of the access limitation: Proponents adequately asserted that to modify the access limitation so that the exemption allows for “good-faith security research” without including a rigid definition of that term. They have also demonstrated that the current language defining good-faith security research as that undertaken “solely for the purposes of good-faith testing, investigation and/or correction of a security flaw or vulnerability” adversely affects or is likely to adversely affect users in this class.⁴⁰⁴ Proponents have argued that the access limitation is ambiguous, limits security research activities such as public discussion and publication of academic papers, and ultimately decreases the identification of vulnerabilities.⁴⁰⁵

³⁹⁸ BSA Class 10 Opposition Comments, at 6.

³⁹⁹ Felten Class 10 Reply Comments, at 22.

⁴⁰⁰ *See id.* at 20.

⁴⁰¹ Felten & Halderman Class 10 Comments, at 2. NTIA adds the word “all” before “other applicable laws and regulations” to emphasize the need for security researchers to be mindful of full compliance.

⁴⁰² We recognize that although CCIPS would not object to removing the reference to “any applicable law” were it standing alone, it does not support removing the reference to the CFAA. 2018 CCIPS Letter, at 5-6. We agree with CCIPS that regulatory language in the DMCA 1201 Rulemaking (or absence thereof) “does not change what is or is not permitted under other laws.” 2018 CCIPS Letter, at 5. As explained above, we believe that our proposed language accomplishes the goal of clarifying the exemption while avoiding a chilling effect on legitimate security research.

⁴⁰³ *See* 2015 NTIA Letter, at 72.

⁴⁰⁴ Felten & Halderman Class 10 Comments, at 2.

⁴⁰⁵ *See* CDT Class 10 Comments, at 4; *see also* April 10 Hearing Transcript, at 223-24 (“So first I want to be clear about some of the purposes that are potentially not encompassed under solely for good faith security research but are nonetheless often engaged in by academic researchers. And one of those is teaching, another is publication.”).

Opponents argued that loosening the access limitation will increase the potential for bad actors to take advantage of security flaws or vulnerabilities.⁴⁰⁶ Proponents responded that opponents have not presented tangible evidence that bad actors used this exemption in order to engage in unlawful activities.⁴⁰⁷ Opponents also argued that requiring users undertake circumvention “solely” for good-faith research does not “have any impact on post-circumvention activity” because “a beneficiary is free to use insights gleaned from research” for academic purposes.⁴⁰⁸ However, proponents have demonstrated that security research subject to the current access limitations hinders “scientific dialogue, academic peer review, and classroom teaching.”⁴⁰⁹ Additionally, modifying the access limitation will result in more collaboration between security researchers and industry.⁴¹⁰

NTIA believes that proponents have made the necessary showing to remove the prescriptive definition of “good-faith security research” from the exemption. NTIA further believes that modifying the access limitation will provide clarity to good-faith security researchers and result in increased good-faith security research efforts, further coordination within the security research community, and ultimately promote public safety and security.

Removal of the use limitation: Proponents persuasively argued that the current exemption language requiring “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” adversely affects or is likely to adversely affect users in this class.⁴¹¹ Proponents demonstrated that the use limitation makes it “unclear whether academic research and open public discussion of vulnerabilities fall within the exemption.”⁴¹²

⁴⁰⁶ Auto Alliance Class 10 Opposition Comments, at 11 (arguing that elimination “would create unnecessary risks that bad actors will gain access to security vulnerabilities”); Joint Creators II Class 10 Opposition Comments, at 11.

⁴⁰⁷ April 10 Hearing Transcript, at 200-01 (“[T]here’s never been any assertion in the record of any actual incident of anyone within the ambit of the exemption or anyone adjacent to the exemption actually invoking the exemption to get out of something.”).

⁴⁰⁸ BSA argues the Register contemplated such uses in 2015, when she wrote that the exemption would enable research “aimed in part at advancing the state of knowledge in the field.” BSA Class 10 Opposition Comments, at 3.

⁴⁰⁹ See Felten & Halderman Class 10 Comments, at 25; see also Felten Class 10 Reply Comments, at 24 (“[A] strict reading of the word ‘solely’ excludes beneficial activities associated with security research, such as teaching and scholarship.”). Further, the access limitation is unnecessary because good-faith security researchers already abide by security research industry norms that promote public safety. Felten & Halderman Class 10 Comments, at 26.

⁴¹⁰ See Felten Class 10 Reply Comments, at 25 (stating that removal will “encourage even more cooperation and coordination between researchers and software companies, resulting in more secure products”).

⁴¹¹ Felten & Halderman Class 10 Comments, at 2.

⁴¹² CDT Class 10 Comments, at 4. See also Felten Class 10 Reply Comments at 26-27 (describing how even the opponents offered varying, inconsistent definitions of the use limitation). Proponents also persuasively argued that the use limitation is ambiguous, limits research, and determines whether the exemption covers a researcher’s activity based on third-party behavior that he or she does not control.

Further, this language resides within the current exemption’s definition of “good-faith security research,” which NTIA recommends removing for the reasons discussed above.

Opponents argued that courts would clarify any potential ambiguity “on the specific facts of an appropriate case.”⁴¹³ One opponent asserted that the use limitation is necessary as it aligns with congressional intent, deters bad actors, and “avoids over-prescriptiveness.”⁴¹⁴ Proponents have shown that the use limitation creates ambiguity, deters research efforts and collaboration, and subjects good-faith security researchers to potential liability.⁴¹⁵ NTIA believes that proponents have made the necessary showing to remove the use limitation. NTIA believes that removal of the use limitation would provide clarity to good-faith security researchers and eliminate the potential liability of these researchers for the actions of third parties.

Alternatives to circumvention and statutory factors: No reasonable alternative to circumvention exists because security research cannot take place without circumventing software or device TPMs and developers and rights holders often lack incentives to participate in security research.⁴¹⁶

The Section 1201 statutory factors weigh in favor of proponents. Under the first factor, the existing exemption’s restrictive list of devices and ambiguous definition for “good-faith security research” impose “a significant barrier to research on software flaws and vulnerabilities.”⁴¹⁷ Removing the current limitations is likely to increase access to copyrighted

See Felten & Halderman Class 10 Comment, at 25-26 (claiming that the current exemption’s language “makes the circumventor liable if someone else uses the information they derived to commit copyright infringement”).

⁴¹³ Auto Alliance Class 10 Opposition Comments, at 14.

⁴¹⁴ BSA Class 10 Opposition Comments, at 4.

⁴¹⁵ *See Felten Class 10 Reply Comments, at 24-26; see also April 10 Hearing Transcript, at 218 (“I actually believe that this clause absolutely was put here in order to work on the third party infringement that occurs down the line. That is why it is about the information and the way that that information is maintained after the activity.”).*

⁴¹⁶ Felten & Halderman Class 10 Comments, at 34. As the Register concluded in 2015, “the permanent exemptions in sections 1201(f), 1201(g), and 1201(j) are inadequate to accommodate the proposed research activities.” 2015 Final Rule, 80 Fed. Reg. at 65956. The proposed research activities in this proceeding are substantially similar to those contemplated in 2015, so NTIA believes that this determination still applies.

⁴¹⁷ *See 17 U.S.C. § 1201(a)(1)(C)(i); see also CDT Class 10 Comments, at 2; Green Class 10 Comments, at 2 (“If he does not bypass access controls in a computer system, Dr. Green’s research is significantly limited.”); 37 C.F.R. § 201.40(b)(7)(ii) (noting that “‘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”) (emphasis added).* As illustrated above and by Professors Felten and Halderman, security researchers rarely have an alternative if they are unable to circumvent TPMs. *See Felten & Halderman Class 10 Comments, at 34.*

works for researchers.⁴¹⁸ Contrary to opponents' view, "there will be greater availability of copyrighted works in general" if the Librarian modifies the exemption.⁴¹⁹

The second statutory factor also favors the proponents.⁴²⁰ Although the current exemption helps enable security research, some of the limitations reduce the availability of works for preservation and educational purposes.⁴²¹ In 2015, the Register found that the prohibition at the time played "a negative role in universities' willingness to engage in and fund security research, and may limit student involvement in academic research projects."⁴²² Proponents have submitted sufficient evidence to show that the limitations in the current exemption are having a similar effect today.⁴²³

Next, proponents demonstrated that security researchers' ability to understand security risks, educate the public, and promote safer and better technology would increase significantly if the Librarian removed the limitations discussed above.⁴²⁴ Proponents have shown that freedom to engage in additional security research and in protected speech without unknown legal risk

⁴¹⁸ Given the difficulty of obtaining right holders' permission to conduct security research and the limited ability to circumvent TPMs, even when security researchers are able to study vulnerabilities, they will not be able to determine with confidence whether the system or device is secure. *See* April 10 Hearing Transcript, at 111-12 ("[W]hen Professor Green approaches [a potential vulnerability], he has to take a black boxing approach. So he's not able to circumvent in order to look at the code. He has to reverse engineer in a black box manner that doesn't give you confidence that in fact there are vulnerabilities."); *id.* at 122-123 (noting the difficulties security researchers experienced when attempting to obtain permission from software manufacturers).

⁴¹⁹ 2015 Register's Recommendation, at 310; *see* ESP Class 10 Opposition Comments, at 21.

⁴²⁰ *See* 17 U.S.C. § 1201(a)(1)(C)(ii) ("the availability for use of works for nonprofit archival, preservation, and educational purposes").

⁴²¹ NTIA notes the availability for preservation and education was part of the basis for the exemption in 2015. *See* 2015 Register's Recommendation, at 310. Proponents have demonstrated that the existing exemption chills research and scholarship because its ambiguity regarding permissible activities "introduces a risk of liability for students and teachers." Felten & Halderman Class 10 Comments, at 27; *see also* CDT Class 10 Comments, at 1 (noting that the current exemption, with its limitations on research methods and eligible devices, "limits and chills critical research into vulnerabilities with the threat of litigation"); *id.* at 4 (noting that because "circumvention must be solely for the purpose of good-faith security research and that such search involves accessing a computer program solely for purposes of good-faith testing, investigation, or correction of a security flaw should be removed . . . it is unclear whether academic research and open public discussion of vulnerabilities fall within the exemption, placing legal constraints on the study and prevention of critical flaws.").

⁴²² 2015 Register's Recommendation, at 310.

⁴²³ Because the "majority of research and scholarship is conducted by academic researchers in educational settings," the current exemption should, at minimum, be clarified to help security researchers manage legal risks more confidently. Felten & Halderman Class 10 Comments, at 27. Researchers having confidence to manage risks and expectations is especially important to increase engagement with security research for unprofitable goals that are socially beneficial, such as nonprofit archival, preservation, and educational purposes, all of which are recognized under 17 U.S.C. § 1201(a)(1)(C)(ii).

⁴²⁴ *See* 17 U.S.C. § 1201(a)(1)(C)(iii) (stating that the Librarian shall examine "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").

would serve the public interest.⁴²⁵ Public discourse is critical because manufacturers or distributors may have an incentive to delay or suppress the disclosure of security vulnerabilities in devices or systems.⁴²⁶ Proponents have demonstrated that lifting the limitation on post-circumvention use would likely facilitate criticism, comment, news reporting, teaching, scholarship, and research.⁴²⁷

Opponents claimed that a broader exemption would lower the market value of their copyrighted works.⁴²⁸ However, any negative effect on the market for copyrighted works in this class “will result only from the exposure of inherent shortcomings in the works themselves,” which the Register did not credit as a market harm in 2015.⁴²⁹ NTIA agrees with the proponents that, on balance, circumvention of TPMs in this class will lead to a positive “net effect” on both the quality and the value of copyrighted works in this class.⁴³⁰

NTIA Recommendation for Class 10 (Security Research): NTIA supports modifying the current exemption and believes that adopting our proposed exemption language from the 2015 proceeding would serve proponents’ purposes.⁴³¹ Accordingly, NTIA recommends the following exemption language:

⁴²⁵ For example, security research exposing weaknesses in consumer products (e.g., vehicles, medical devices, consumer products) by lawfully circumventing the TPMs has promoted news reporting, fostered additional scholarship and research, provided timely warnings for the general public that uses these products, and spurred manufacturers to build and deploy products with more competitive security measures. *See also* Felten & Halderman Class 10 Comments, at 28 (demonstrating that the current limitations bar socially beneficial good-faith security research).

⁴²⁶ Kim Zetter, *Top Voting Machine Vendor Admits It Installed Remote-Access Software on Systems Sold to States*, (July 17, 2018), Motherboard (July 17, 2018, 8:00 AM), https://motherboard.vice.com/en_us/article/mb4ezy/top-voting-machine-vendor-admits-it-installed-remote-access-software-on-systems-sold-to-states (“In 2006 [. . .] hackers stole the source code for the pcAnywhere software, though the public didn’t learn of this until years later in 2012 when a hacker posted some of the source code online, forcing Symantec, the distributor of pcAnywhere, to admit that it had been stolen years earlier.”).

⁴²⁷ *See* CDT Class 10 Comments, at 4-5.

⁴²⁸ Auto Alliance Class 10 Opposition, at 5 (raising concerns with broadening the current exemption by way of hypothetical in which “a company’s proprietary copyrighted software could be accessed (through circumvention) by an academic researcher who receives funding from a competitor, and who could misuse the software to benefit that competitor and harm the market for the original product).

⁴²⁹ 2015 Register’s Recommendation, at 311. In 2015, the Register concluded the effect of circumvention of TPMs on the market for or value of copyrighted works, “would generally not be adverse.” *Id.* Proponents argued that the proposed modifications do not change the analysis. Felten & Halderman Class 10 Comments, at 29; *see also* 2015 Register’s Recommendation, at 311.

⁴³⁰ Felten & Halderman Class 10 Comments, at 29.

⁴³¹ *See* 2015 NTIA Letter, at 89. As mentioned above, NTIA’s single modification to its proposed 2015 language is the inclusion of the word “all” before “other applicable laws and regulations.”

Class 11 – Computer Programs – Avionics

No current exemption allows for circumvention of TPMs on computer programs for avionics data. Air Informatics proposed the following new exemption:

For aviation, aircraft, aviation engineering and security professionals and third parties, where circumvention of computer programs allows for access to aircraft flight, operations, maintenance, and security data, is undertaken to gather, store, and analyze the data, including for flight safety and cyber security compliance.⁴³²

Analysis: Proponents failed to demonstrate that the proposed class includes copyrighted works protected by TPMs. At no point in its petition, comment, or at the hearing did Air Informatics argue that avionics data are copyrighted works.⁴³⁵ One proponent—Public Knowledge—acknowledged that avionics data are not copyrighted works.⁴³⁶ Because proponents failed to demonstrate that avionics data are copyrighted works, NTIA does not support the proposed exemption.⁴³⁷

Proponents did not clearly identify when circumvention might occur under this proposal. Air Informatics proposed to circumvent the encryption at two junctures: (1) when the aircraft owner or operator transmitted the data from the airplane to a hangar; and (2) after the aircraft owner or operator provided the encrypted data to Air Informatics.⁴³⁸ While NTIA is satisfied that some levels of encryption protect the avionics data, the mere existence of encryption cannot trigger a Section 1201 exemption; a copyrighted work must exist to trigger a Section 1201 exemption.⁴³⁹

Even if the Register were to assume that avionics data were copyrighted works, Air Informatics failed to identify clearly the proposed users of the exemption, beyond Air

⁴³⁵ While NTIA focuses on whether the avionics data are copyrightable works, the record also includes no discussion of whether the software that generates the avionics data is the copyrightable work at issue. At the hearing, Air Informatics suggested that the data are standards dictated by Federal Aviation Administration (“FAA”) regulation, including the following: “It’s a combination of codes and text characters with certain meanings. The meaning of this data, and it could be altitude, pressure, temperature, speed, how the airplane is flown, control service inputs, things like this, that the industry has defined definitions of this and formats of it saying this is the order of the data and you take it from this x-y-z to an intelligent stream of speed, altitude, and pressure.”

April 25 Hearing Transcript, at 145-147; *see also* Class 11 Comments of Air Informatics, LLC (Air Informatics Class 11 Comments) at 4-5, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class11/class-11-initialcomments-ai.pdf>. Later on at the hearing, Air Informatics stated that the “data is to see that the airplane is being flown properly, maintained properly.” April 25 Hearing Transcript, at 155.

⁴³⁶ PK Class 11 Comments, at 2-3.

⁴³⁷ Even if the Copyright Office decided avionics data are copyrighted works, proponents have failed to identify the copyright holder. At the hearing, Air Informatics suggested that the aircraft owner or operator owned and controlled access to the avionics data, but also suggested that the aircraft original equipment manufacturer owned and controlled access to the avionics data. *See* April 25 Hearing Transcript, at 129-44, 160; *see also* Air Informatics Class 11 Comments, at 2. Even if the Copyright Office were to conclude the avionics data were copyrighted works, it is not clear what entity would hold rights to the avionics data. Moreover, Public Knowledge urges the Copyright Office to analyze fair use “assuming *arguendo*” that avionics data are copyrighted works. *See* PK Class 11 Comments, at 3-5 (emphasis in original). NTIA believes it is unnecessary to engage in a fair use analysis because proponents have not met the threshold requirement to demonstrate whether a TPM protects a copyrighted work.

⁴³⁸ *See* Air Informatics Class 11 Comments, at 4; April 25 Hearing Transcript, at 152-53.

⁴³⁹ Proponents have demonstrated that aircraft owners or operators protect avionics data through some means of encryption. For example, at the hearing, Air Informatics described situations wherein “a manufacturer has chosen to encrypt data and not provide access to it” as a reason for its proposing this exemption. April 25 Hearing Transcript, at 129.

Informatics itself.⁴⁴⁰ The Librarian should deny the petition because the prohibition on circumvention does not adversely affect and is not likely to adversely affect users. Air Informatics suggested the prohibition hampers innovation in aircraft security, limits research initiatives, and reduces the development of tools to address cybersecurity threats.⁴⁴¹ However, Air Informatics provided little support for these claims.

Reasonable alternatives to circumvention seem to exist. Air Informatics suggested that, at all times, it would circumvent the TPM to access avionics data only upon request of the aircraft owner or operator that controls the data.⁴⁴² In fact, Air Informatics confirmed at the hearing that an airline would give avionics data to Air Informatics without the need for Air Informatics to circumvent the encryption.⁴⁴³ NTIA is unsure why circumvention is necessary if the two relevant parties can come to an agreement for access to and use of the data.⁴⁴⁴

NTIA Recommendation for Class 11 (Avionics): At this time, NTIA does not recommend adopting the proposed exemption, as the proponent did not meet its burden of proof.

Class 12 – Computer Programs – 3D Printing

The current exemption for 3D printing allows for circumvention of:

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

⁴⁴⁰ Air Informatics argued for broad categories of potential users, but failed to provide sufficient evidence of use cases of the data. Air Informatics suggested users of the proposed exemption would be aviation, aircraft, aviation engineering and security professionals, and third parties, as well as researchers and educational institutions. *See* Air Informatics Class 11 Petition, at 2; Air Informatics Class 11 Comments, at 3. Air Informatics also stated that the proposed users would be limited to entities authorized by the aircraft owner or operator. Air Informatics Class 11 Petition, at 2; Air Informatics Class 11 Comments, at 3; April 25 Hearing, at 134-36. Further, while Public Knowledge supported the proposed exemption, it seemed to suggest that aircraft operators would be the proposed users. NTIA has no clear understanding of who would be the proposed users. *See* PK Class 11 Comments, at 2.

⁴⁴¹ *See* Air Informatics Class 11 Comments, at 5.

⁴⁴² *See id.* at 3; April 25 Hearing Transcript, at 134-136. If an aircraft owner or operator possesses and controls access to avionics data that it authorizes a user to access, the owner or operator should provide a copy of the data or give an encryption key to access the data, thus obviating the need to circumvent.

⁴⁴³ *See* April 25 Hearing Transcript, at 157.

⁴⁴⁴ The Copyright Office probed at the hearing about whether Air Informatics had ever requested from the aircraft owner or operator a copyright license for the avionics data. Air Informatics did not answer whether it had approached the copyright holder or if the copyright holder refused license the avionics data. *See* April 25 Hearing Transcript, at 141-143. On a similar note, the Copyright Office asked whether the FAA is acting to resolve the issue of mandating de-encryption of avionics data for security purposes. Again, Air Informatics' response was unclear. *See id.* at 150-151. NTIA would need more information about whether Air Informatics has attempted or even analyzed alternatives to circumvention before it could recommend the proposed exemption.

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.⁴⁴⁵

At a minimum, NTIA supports renewing the current exemption. Michael Weinberg and the Owners' Rights Initiative (ORI) submitted a petition to renew the current 3D printing exemption.⁴⁴⁶ The petitioners argued that the justifications for this class have not changed materially since the 2015 rulemaking process and that the need for the exemption remains.⁴⁴⁷ No parties opposed renewing the existing exemption. At a minimum, NTIA supports renewing the current exemption.

Michael Weinberg also submitted a proposal to expand the current 3D printing exemption. Weinberg requested removal of the limitation in the exemption that excludes using non-manufacturer approved feedstock on 3D printers that produce goods or materials for use in commerce, the physical production of which is subject to legal or regulatory oversight.⁴⁴⁸ Weinberg argued that the qualifying language rendered the current exemption ineffective because users employ 3D printers for a mix of commercial and non-commercial purposes.⁴⁴⁹

NTIA position: NTIA supports the proposed exemption.⁴⁵⁰ The exclusionary language in the existing exemption is overbroad, as most items in commerce are subject to some form of legal or regulatory oversight.⁴⁵¹

⁴⁴⁵ 37 C.F.R. § 201.40(b)(9).

⁴⁴⁶ See Class 12 Renewal Petition of Michael Weinberg & Owners' Rights Initiative (Weinberg Class 12 Renewal Petition) at 3, Docket No. 2017-10, <https://www.regulations.gov/contentStreamer?documentId=COLC-2017-0007-0027&attachmentNumber=1&contentType=pdf>.

⁴⁴⁷ See Weinberg Class 12 Renewal Petition, at 3 (noting that “the original reasons proposed to justify the exemption request continue to justify its renewal during this triennial period [and] printers continue to exist that integrate technology designed to restrict the use of third party feedstock”).

⁴⁴⁸ See Class 12 Petition of Michael Weinberg (Weinberg Class 12 Petition) at 2, <https://www.copyright.gov/1201/2018/petitions-091317/class12/class-12-newpetition-weinberg.pdf>. Users cannot use the current exemption for “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.” 37 C.F.R. § 201.40(b)(9). Weinberg suggested eliminating this qualification.

⁴⁴⁹ Weinberg Class 12 Petition, at 2.

⁴⁵⁰ In 2015, NTIA recommended the following exemption text: Computer programs embedded in 3D printers or similar additive manufacturing devices, as well as in feedstock cartridges used with those devices, where circumvention is undertaken for the purpose of enabling interoperability of feedstock or filament with the device.

⁴⁵¹ Transcript, Hearing on Exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Section 1201 – Digital Millennium Copyright Act, at 49-50 (Apr. 13, 2018) (April 13 Hearing Transcript), <https://www.copyright.gov/1201/2018/hearing-transcripts/1201-Rulemaking-Public-Roundtable-04-13-2018.pdf>. NTIA shares the sentiment with numerous proponents in this class that the limitation in the current exemption is superfluous since there is already appropriate government oversight for the commercial uses that the current exemption excludes. See, e.g., Class 12 Reply Comments of George Ellenburg (Ellenburg Class 12 Reply Comments) at 2,

Analysis: Weinberg has described sufficiently that 3D printer manufacturers embed TPMs to limit the feedstock that owners of 3D printers can use. Weinberg suggested the expansion is necessary because the current exemption is unworkable, inhibits non-infringing uses of 3D printers, and is limited based on considerations unrelated to copyright law.

Proponent’s proposed use likely constitutes fair use. The limited scope of the current exemption suppresses many noncommercial uses of 3D printing, such as scientific research.⁴⁵² The computer programs involved in Class 12 are functional rather than expressive, and the proposed use is likely to enhance functionality.⁴⁵³ The proposed expansion does not extend to software beyond what the current exemption covers.⁴⁵⁴ Lastly, the fourth fair use factor is ambiguous.⁴⁵⁵ At least two of the four fair use factors weigh in favor of granting the proposed exemption.

The Copyright Office included the qualifying language during the last triennial proceeding to address various concerns about public safety in regulated industries (*e.g.*, aerospace).⁴⁵⁶ Proponents argued that the limitation in the current exemption adversely affects owners of 3D printers because the language is unduly complicated and prevents owners of 3D printers from using any feedstock to produce commercial items that might be subject to

Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class12/Class_12_Reply_Ellenburg.pdf; Class 12 Reply Comments of David Hatch (Hatch Class 12 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class12/Class_12_Reply_Hatch.pdf; Class 12 Reply Comments of Abraham Mara (Mara Class 12 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class12/Class_12_Reply_Mara.pdf

⁴⁵² Class 12 Reply Comments of Tim Postma (Postma Class 12 Reply Comments) at 2, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-031418/class12/Class_12_Reply_Postma.pdf (causing “closing off a whole industry of material science in 3dprinting [sic]”); *see also* 17 U.S.C. § 107(1) (“[T]he purpose and character of the use”).

⁴⁵³ Weinberg Class 12 Petition, at 2 (TPMs “are computer programs that operate 3D printers . . . when circumvention is accomplished solely for the purpose of using alternative feedstocks and not for the purpose of accessing design software, design files or proprietary data.”). Permitting 3D printer’s owner to circumvent the TPMs that control the feedstock loosens manufactures’ control over a key functionality of the printer.

⁴⁵⁴ The proposed exemption does not alter the analysis of the third factor regarding the “amount and substantiality of the portion used in relation to the copyrighted work as a whole.” 17 U.S.C. § 107(3). In 2015, the Register concluded that this factor thus favored neither side. 2015 Register’s Recommendation, at 369 (“[T]here was very little record of how much the printer operating system software would need to be changed to use third-party feedstock. . . . This factor thus favors neither party.”).

⁴⁵⁵ 17 U.S.C. § 107(4) (“[T]he effect of the use upon the potential market for or value of the copyrighted work”). Theoretically, the proposed exemption would give consumers additional flexibility to choose feedstock for their own 3D printers regardless of the intended uses. This might dilute the business interest for certain 3D printer manufacturers for whom profitability relies on the sale of proprietary feedstock. However, only one manufacturer opposed to the proposed exemption in the Seventh Triennial Section 1201 Rulemaking, and there is no concrete evidence in the record regarding the market breakdowns for proprietary feedstock and non-proprietary feedstock.

⁴⁵⁶ *See* 2015 Final Rule, 80 Fed. Reg. at 65958.

regulation.⁴⁵⁷ The sole opponent is a manufacturer of 3D printers. It stated that eliminating the qualifying language would result in an overbroad exemption causing public safety concerns.⁴⁵⁸ Proponents argued that, if such risks exist, other agencies could appropriately address them.⁴⁵⁹ NTIA recommends that the Librarian leave the resolution of any public safety related concerns to the agencies with the requisite expertise and jurisdiction to address them.⁴⁶⁰

The opponent also argued that the uses of the proposed expansion would infringe copyright and lack defenses under fair use or Section 117.⁴⁶¹ At the hearing, the opponent was unaware of any differences in licensing practices between 3D printers generally intended for industrial use and those destined for consumer use.⁴⁶² It follows that the limiting language is less about whether the uses are infringing and more about non-copyright concerns.⁴⁶³ NTIA believes that the 3D printing exemption should allow commercial and non-commercial uses.

NTIA believes that the Section 1201 statutory factors weigh in favor of modifying the current exemption. The availability of the copyrighted works produced by 3D printers would likely increase in the absence of a limiting factor in the exemption.⁴⁶⁴ The ambiguity in the current exemption text chills some noncommercial uses of 3D printers that are socially

⁴⁵⁷ See Class 12 Comments of Michael Weinberg (Weinberg Class 12 Comments) at 6-7, Docket No. 2017-10, <https://www.copyright.gov/1201/2018/comments-121817/class12/class-12-initialcomments-weinberg.pdf>. The proponents' argument is mainly economic and advocates more autonomy for consumers over the decision of what feedstock to use in their own 3D printers regardless of the purpose of use. The major proponents and a few individuals submitted comments emphasizing the social benefit to consumers and market competition if the Librarian were to adopt the proposed exemption.

⁴⁵⁸ Specifically, the opponent maintained that the qualifying language in the current exemption helps to prevent inferior aircraft components and medical devices from being manufactured.

⁴⁵⁹ Specifically, Weinberg argued there is no evidence that FAA's and FDA's respective jurisdiction over the relevant industries was inadequate or would be enhanced by the Copyright Office's enacting Section 1201 prohibition against circumventing 3D printers to use alternative feedstocks. See *id.* at 7.

⁴⁶⁰ The petitioner argued that the Copyright Office has neither the requisite expertise nor the authority to provide additional oversight in non-copyright areas that are already regulated by other federal agencies under appropriate bodies of laws. See *id.* at 8. Although NTIA recognizes the seriousness of the opponent's concerns, NTIA finds the proponents' arguments more persuasive and insists that the DMCA should not be used to address non-copyright issues.

⁴⁶¹ Class 12 Opposition Comments of Stratasys, Inc. (Stratasys Class 12 Opposition Comments) at 3-5, Docket No. 2017-10, https://www.copyright.gov/1201/2018/comments-021218/class12/Class_12_Opp'n_Stratasys.pdf. The opponent insisted "its software is licensed," in order to deny the owners of Stratasys 3D printers any privilege Section 117 confers on owners of a copy of a computer program. *Id.* at 5.

⁴⁶² April 13 Hearing Transcript, at 47-48. This would seem to suggest that the analysis under Section 117 is the same for devices targeted as industrial applications, further highlighting that the current limitations are unrelated to copyright concerns.

⁴⁶³ As discussed above in relation to the proposed exemption for Class 7 (repair), NTIA believes that the device ownership should render the owner of a 3D printer with ownership of the included copy of software, in

beneficial, such as research and educational use.⁴⁶⁵ Lastly, the effect of an expanded exemption would improve the market for and value of copyrighted works produced by 3D printers by expanding the amount of items that 3D printer owners can produce.⁴⁶⁶

NTIA Recommendation for Class 12 (3D Printing): NTIA recommends expanding this exemption to include both non-commercial and commercial uses. NTIA recommends that the Copyright Office adopt the following exemption language:

Computer programs embedded in 3D printers or similar additive manufacturing devices, as well as in feedstock cartridges used with those devices, where circumvention is undertaken for the purpose of enabling interoperability of feedstock or filament with the device.

⁴⁶⁵ *Id.* at § 1201(a)(1)(C)(ii) (“the availability for use of works for nonprofit archival, preservation, and educational purposes”). Removing the qualifying language from the current exemption would improve the readability of the exemption as well as the predictability of its enforcement, cultivating consumer confidence to engage in productive uses similar to the ones promoted by the third statutory factor. *Id.* at § 1201(a)(1)(C)(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”).

⁴⁶⁶ *See id.* at § 1201(a)(1)(C) (“(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”).