



**SECTION 1201 RULEMAKING:**  
Eighth Triennial Proceeding to Determine  
Exemptions to the Prohibition on Circumvention

RECOMMENDATION OF THE REGISTER OF COPYRIGHTS

OCTOBER 2021





The Register of Copyrights of the United States of America

United States Copyright Office · 101 Independence Avenue SE · Washington, DC 20559-6000 · (202) 707-8350

October 19, 2021

Carla Hayden  
Librarian of Congress  
Library of Congress  
101 Independence Ave. SE  
Washington, DC 20540

Dear Dr. Hayden:

Pursuant to my statutory obligation under 17 U.S.C. § 1201(a)(1)(C), please find the attached recommendation relating to the rulemaking on exemptions from the prohibition on circumvention of technological protection measures that control access to copyrighted works.

Sincerely,

A handwritten signature in black ink that reads "Shira Perlmutter".

Shira Perlmutter  
Register of Copyrights and Director  
U.S. Copyright Office

cc: Elizabeth A. Pugh, General Counsel, Library of Congress

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Recommended Regulatory Language

## I. Introduction

Section 1201 of Title 17 generally makes it unlawful to “circumvent a technological measure that effectively controls access to” a copyrighted work.<sup>1</sup> The Librarian of Congress is authorized to adopt temporary exemptions to this prohibition upon the recommendation of the Register of Copyrights in a rulemaking proceeding conducted every three years.<sup>2</sup> The rulemaking occurs through a formal public process administered by the Register, who consults with the Assistant Secretary for Communications and Information of the Department of Commerce.<sup>3</sup> The first rulemaking was completed in 2000, and subsequent rulemakings have taken place on a triennial basis since then.

This Recommendation sets forth the Register’s analysis and conclusions regarding exemptions proposed for the upcoming three-year period. In the previous section 1201 proceeding, the Register recommended, and the Librarian adopted, seventeen groups of exemptions. As discussed below, the Register is recommending that each of those exemptions be readopted. In addition, the Register received petitions for multiple new or expanded exemptions; these have been organized into seventeen classes based on the category of work and the type of activity at issue. The Register is recommending that exemptions be adopted, either in whole or in part, in fourteen of these classes. Taking into account both renewals and new or expanded exemptions, the Register is recommending exemptions covering the following types of activities:

- Excerpts of motion pictures:
  - For criticism or comment,
    - For nonfiction multimedia e-books
    - For uses in documentary films and other films where the use is in parody or for a biographical or historically significant nature
    - For uses in noncommercial videos
  - For educational uses,
    - By college and university or K–12 faculty and students, or employees acting at the direction of faculty

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

<sup>2</sup> *Id.* § 1201(a)(1)(B)–(D).

<sup>3</sup> *Id.* § 1201(a)(1)(C).

- By faculty and employees of massive open online courses (“MOOCs”)
- By educators and participants in digital and literacy programs offered by libraries, museums and other nonprofits
- Motion pictures, for the provision of captioning and/or audio description by disability services offices or similar units at educational institutions for students, faculty, or staff with disabilities
- Motion pictures, for the purpose of lawful preservation or the creation of a replacement copy by an eligible library, archives, or museum
- Motion pictures, for the purpose of deploying text and data mining techniques on a corpus of motion pictures for scholarly research and teaching by researchers at institutions of higher education
- Literary works, for the purpose of deploying text and data mining techniques on a corpus of literary works for scholarly research and teaching by researchers at institutions of higher education
- Literary works distributed electronically (*i.e.*, e-books), for use with assistive technologies for persons who are blind, visually impaired or have print disabilities
- Literary works consisting of compilations of data generated by medical devices and corresponding personal monitoring systems
- Computer programs that enable wireless devices to connect to a wireless telecommunications network (“unlocking”)
- Computer programs that operate the following types of devices, to allow the device to interoperate with or to remove software applications (“jailbreaking”):
  - Smartphones
  - Tablets and other all-purpose mobile computing devices
  - Smart TVs, including video streaming devices
  - Voice assistant devices
  - Routers and dedicated network devices

- Computer programs that operate the following types of devices, to allow diagnosis, maintenance, and repair:
  - Motorized land vehicles or marine vessels
  - Devices primarily designed for use by consumers
  - Medical devices and systems
- Computer programs for purposes of good-faith security research
- Computer programs for purposes of investigating a potential infringement of free and open-source computer programs
- Computer programs other than video games, for the preservation of computer programs and computer program-dependent materials by libraries, archives, and museums
- Video games for which outside server support has been discontinued, to allow individual play by gamers and preservation of games by libraries, archives, and museums (as well as necessary jailbreaking of console computer code for preservation uses only), and preservation of discontinued video games that never required server support
- Computer programs that operate 3D printers, to allow use of alternative material
- Video games operated on a general-purpose computer, for the purpose of allowing an individual with a physical disability to use software or hardware input methods other than a standard keyboard or mouse

The Register is not recommending adoption of the following proposed exemptions:

- Audiovisual works, for purposes of creating clips to be used in text messages
- Audiovisual works, for purposes of livestream recording
- Audiovisual works, for purposes of space-shifting

As discussed further below, a recommended denial is not necessarily based on a determination that the proposal lacks merit. In some cases, the Register is unable to recommend an exemption due to deficiencies in the evidence provided in support, but is open to considering similar proposals in the future upon a more robust record.

## II. Legal Background

### A. Section 1201(a)(1)

In 1998, Congress enacted the Digital Millennium Copyright Act (“DMCA”) to implement provisions of the World Intellectual Property Organization (“WIPO”) Copyright Treaty and WIPO Performances and Phonograms Treaty. Title I of the DMCA added a new chapter 12 to title 17 of the United States Code, which prohibits circumvention of technological measures employed by or on behalf of copyright owners to control access to their works. In enacting section 1201, Congress recognized that the same features making digital technology a valuable delivery mechanism—the ability to quickly create and distribute near-perfect copies of works on a vast scale—also carry the potential to enable piracy to a degree unimaginable in the analog context. As a result, Congress sought to support copyright owners’ use of mechanisms known as “technological protection measures,” or “TPMs,” when offering works in digital form.

Specifically, section 1201(a)(1) states, in pertinent part, that “[n]o person shall circumvent a technological measure that effectively controls access to a work protected under [title 17].”<sup>4</sup> The phrase “circumvent a technological measure” means “to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner.”<sup>5</sup> A technological measure that “effectively controls access to a work” is one that “in the ordinary course of its operation, requires the application of information, or a process or a treatment, with the authority of the copyright owner, to gain access to the work.”<sup>6</sup>

In addition to the general prohibition on circumvention, Congress created permanent exemptions to preserve access to works for certain beneficial purposes (*e.g.*, library browsing, reverse engineering) and to allow users to legally circumvent TPMs in limited circumstances. As originally drafted, however, section 1201 did not provide a process outside of legislation to create additional exemptions. The House of Representatives’ Committee on Commerce was concerned that the lack of an ability to waive the circumvention prohibition might undermine the fair use of copyrighted works.<sup>7</sup> The Committee concluded that it would “be appropriate to modify the flat prohibition against the circumvention of effective technological measures that control access to copyrighted materials, in order to ensure that access for lawful purposes is not

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<sup>4</sup> 17 U.S.C. § 1201(a)(1).

<sup>5</sup> *Id.* § 1201(a)(3)(A).

<sup>6</sup> *Id.* § 1201(a)(3)(B).

<sup>7</sup> H.R. REP. NO. 105-551, pt. 2, at 35–36 (1998) (“Commerce Comm. Report”).

unjustifiably diminished.”<sup>8</sup> Congress thus created this rulemaking proceeding to address lawful uses of copyrighted works not covered by the permanent exemptions.

The Commerce Committee characterized the rulemaking proceeding as a “fail-safe” mechanism,” stating that “[t]his mechanism would monitor developments in the marketplace for copyrighted materials, and allow the enforceability of the prohibition against the act of circumvention to be selectively waived, for limited time periods, if necessary to prevent a diminution in the availability to individual users of a particular category of copyrighted materials.”<sup>9</sup>

As ultimately enacted, the “fail-safe” mechanism in section 1201(a)(1) requires the Librarian of Congress, following a rulemaking proceeding conducted by the Copyright Office, to publish any class of copyrighted works as to which the Librarian has determined that noninfringing uses by persons who are users of a copyrighted work are, or are likely to be, adversely affected by the prohibition against circumvention in the succeeding three-year period, thereby exempting that class from the prohibition for that period.<sup>10</sup> The three-year period was intended to allow exemption proposals to be “fully considered and fairly decided on the basis of real marketplace developments,”<sup>11</sup> and flexible enough to accommodate these market developments. The Librarian’s determination is to be based upon the Register of Copyrights’ recommendation.<sup>12</sup> In making her recommendation, the Register consults with the Assistant Secretary for Communications and Information of the Department of Commerce, who oversees the National Telecommunications and Information Administration (“NTIA”).<sup>13</sup>

As explained by the Commerce Committee, “[t]he goal of the proceeding is to assess whether the implementation of technological protection measures that effectively control access to copyrighted works is adversely affecting the ability of individual users to make lawful uses of copyrighted works.”<sup>14</sup> To do this, the Register develops a comprehensive administrative record using information submitted by interested parties, and makes a recommendation to the Librarian on the basis of that record.<sup>15</sup> Based on the

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<sup>8</sup> *Id.* at 36.

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

<sup>10</sup> See 17 U.S.C. § 1201(a)(1).

<sup>11</sup> Commerce Comm. Report at 36.

<sup>12</sup> 17 U.S.C. § 1201(a)(1)(C); H.R. REP. NO. 105-796, at 64 (1998) (“Conference Report”).

<sup>13</sup> 17 U.S.C. § 1201(a)(1)(C).

<sup>14</sup> Commerce Comm. Report at 37.

<sup>15</sup> See Conference Report at 64 (“[A]s is typical with other rulemaking under title 17, and in recognition of the expertise of the Copyright Office, the Register of Copyrights will conduct the rulemaking, including providing notice of the rulemaking, seeking comments from the public,



recommendation, the Librarian promulgates the final rule setting forth any exempted classes of works.

### *B. Relationship to Other Provisions of Section 1201 and Other Laws*

Temporary exemptions promulgated under section 1201(a)(1) apply only to circumventing technological measures that control access to copyrighted works. Section 1201 also contains provisions prohibiting trafficking in technologies, products, services, or devices that are primarily designed or produced for purposes of circumventing TPMs. Section 1201(a)(2) restricts trafficking in those that are used to circumvent technological measures that control access to copyrighted works (referred to as “access controls”).<sup>16</sup> Section 1201(b) restricts trafficking in those that are used to circumvent technological measures that protect the exclusive rights of copyright owners in their works, including the right to reproduce these works (referred to as “copy controls”).<sup>17</sup> The Register does not have authority to recommend—nor does the Librarian of Congress have authority to adopt—exemptions for these anti-trafficking prohibitions as part of the triennial rulemaking process.<sup>18</sup>

Section 1201’s permanent exemptions permit specific activities, some of which authorize both circumvention and trafficking, including:

- Section 1201(d), which exempts certain activities of nonprofit libraries, archives, and educational institutions from the circumvention bar in section 1201(a)(1), so that they can “make a good faith determination of whether to acquire a copy of [a] work for the sole purpose of engaging in conduct permitted under this title.”
- Section 1201(e), which exempts “any lawfully authorized investigative, protective, information security, or intelligence activity” of the federal or a state government from the anticircumvention and anti-trafficking provisions in section 1201(a)(1), (a)(2), and (b).

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consulting with the Assistant Secretary for Communications and Information of the Department of Commerce and any other agencies that are deemed appropriate, and recommending final regulations in the report to the Librarian.”).

<sup>16</sup> 17 U.S.C. § 1201(a)(2).

<sup>17</sup> *Id.* § 1201(b).

<sup>18</sup> *See id.* § 1201(a)(1)(E) (“Neither the exception under subparagraph (B) from the applicability of the prohibition contained in subparagraph (A), nor any determination made in a rulemaking conducted under subparagraph (C), may be used as a defense in any action to enforce any provision of this title other than this paragraph.”).

- Section 1201(f), which exempts certain “reverse engineering” activities from section 1201(a)(1), (a)(2), and (b), “for the sole purpose of identifying and analyzing those elements of [a computer] program that are necessary to achieve interoperability of an independently created computer program with other programs.”
- Section 1201(g), which exempts certain “encryption research” from section 1201(a)(1) and (2) (but not 1201(b)).
- Section 1201(h), which permits courts, in applying section 1201(a)(1) and (2) to a “component or part,” to consider whether the component or part is needed to “prevent the access of minors to material on the Internet.”
- Section 1201(i), which exempts from section 1201(a)(1) circumvention carried out “solely for the purpose of preventing the collection or dissemination of personally identifying information about a natural person who seeks to gain access to the work protected.”
- Section 1201(j), which exempts certain acts of “security testing” from section 1201(a)(1) and (2).

The Librarian cannot exempt any parties from their duty to comply with other laws, including non-copyright statutes or regulations.

### *C. Rulemaking Standards*

In adopting the DMCA, Congress imposed legal and evidentiary requirements for the section 1201 rulemaking proceeding, as discussed below. The Office analyzed the legal and evidentiary standards in its 2017 policy study on section 1201 (“Section 1201 Report”), and summarizes its conclusions here.<sup>19</sup>

#### **1. Burden of Proof**

The Office has noted that “[t]hose who seek an exemption from the prohibition on circumvention bear the burden of establishing that the requirements for granting an exemption have been satisfied.”<sup>20</sup> In its Section 1201 Report, the Office clarified that

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<sup>19</sup> See U.S. COPYRIGHT OFFICE, SECTION 1201 OF TITLE 17 at 105–27 (2017), <https://www.copyright.gov/policy/1201/section-1201-full-report.pdf> (“Section 1201 Report”).

<sup>20</sup> U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SIXTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION, RECOMMENDATION OF THE REGISTER OF COPYRIGHTS 13 (2015) (“2015 Recommendation”). References to the Register’s recommendations in prior rulemakings are cited by the year of publication followed by “Recommendation” (e.g., “2018 Recommendation”). Prior Recommendations are available on the Copyright Office website at <https://www.copyright.gov/1201/>.

there are “two distinct burdens: the ‘burden of persuasion,’ *i.e.*, which party loses if the evidence is closely balanced, and the ‘burden of production,’ *i.e.*, which party bears the obligation to come forward with evidence at different points in the proceeding.”<sup>21</sup> The Office noted that, practically speaking,

the burden of *production* will effectively be on exemption proponents, simply because they have greater knowledge of and access to evidence demonstrating adverse effects on noninfringing uses. Although the Office has discretion to engage in independent fact-finding and take administrative notice of evidence, the primary way that most evidence supporting an exemption will get into the record will continue to be through the submissions of proponents, who are usually in the best position to provide it.<sup>22</sup>

As for the burden of *persuasion*, the Register will recommend granting an exemption only “when the preponderance of the evidence in the record shows that the conditions for granting an exemption have been met.”<sup>23</sup>

Thus, “[i]n sum, it is the totality of the rulemaking record (*i.e.*, the evidence provided by commenters or administratively noticed by the Office) that must, on balance, reflect the need for an exemption by a preponderance of the evidence. Such evidence must, on the whole, show that it is more likely than not that users of a copyrighted work will, in the succeeding three-year period, be adversely affected by the prohibition on circumvention in their ability to make noninfringing uses of a particular class of copyrighted works.”<sup>24</sup>

## 2. Defining an Exemption Class

Section 1201(a)(1) specifies that an exemption adopted as part of this rulemaking must be based on “a particular class of works.”<sup>25</sup> The starting point for any definition of a “particular class” is the list of categories appearing in section 102 of title 17, such as literary works, musical works, and sound recordings.<sup>26</sup> But, as the legislative history makes clear, “the ‘particular class of copyrighted works’ [is intended to] be a *narrow and*

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<sup>21</sup> Section 1201 Report at 110 (quoting *Shaffer v. Weast*, 546 U.S. 49, 56 (2005) (quotation marks and alterations omitted)).

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at 111–12; see 2015 Recommendation at 13–14 (accord).

<sup>24</sup> Section 1201 Report at 112.

<sup>25</sup> 17 U.S.C. § 1201(a)(1)(B).

<sup>26</sup> STAFF OF H. COMM. ON THE JUDICIARY, 105TH CONG., SECTION-BY-SECTION ANALYSIS OF H.R. 2281 AS PASSED BY THE UNITED STATES HOUSE OF REPRESENTATIVES ON AUGUST 4, 1998, at 7 (Comm. Print 1998) (“House Manager’s Report”).

*focused subset* of the broad categories of works . . . identified in Section 102 of the Copyright Act.”<sup>27</sup> For example, while the category of “literary works” under section 102(a)(1) “embraces both prose creations such as journals, periodicals or books, and computer programs of all kinds,” Congress explained that “[i]t is exceedingly unlikely that the impact of the prohibition on circumvention of access control technologies will be the same for scientific journals as it is for computer operating systems.”<sup>28</sup> As such, “these two categories of works, while both ‘literary works,’ do not constitute a single ‘particular class’ for purposes of” section 1201(a)(1).<sup>29</sup>

At the same time, Congress emphasized that the Librarian “should not draw the boundaries of ‘particular classes’ too narrowly.”<sup>30</sup> Thus, while the category of “motion pictures and other audiovisual works” in section 102 “may appropriately be subdivided, for purposes of the rulemaking, into classes such as ‘motion pictures,’ [or] ‘television programs,’” it would be inappropriate “to subdivide overly narrowly into particular genres of motion pictures, such as Westerns, comedies, or live action dramas.”<sup>31</sup>

Determining the appropriate scope of a “class of works” for an exemption may also involve consideration of the adverse effects an exemption may have on the market for or value of copyrighted works. For example, the class might be defined in part by reference to the medium on which the works are distributed, or even to the access control measures applied to them. In particular, classes may be refined by reference to the particular type of use and/or user to which the exemption will apply.<sup>32</sup> In some cases, “the Office’s ability to narrowly define the class is what enable[s] it to recommend the exemption at all.”<sup>33</sup>

In sum, “[d]eciding the scope or boundaries of a ‘particular class’ of copyrighted works as to which the prohibition contained in section 1201(a)(1) has been shown to have had an adverse impact is an important issue” to be determined based upon the law and facts developed in the proceeding.<sup>34</sup> Accordingly, the Register will look to the specific record before her to assess the proper scope of the class for a proposed exemption.

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<sup>27</sup> Commerce Comm. Report at 38 (emphasis added).

<sup>28</sup> House Manager’s Report at 7.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> 2015 Recommendation at 17–18; Section 1201 Report at 26.

<sup>33</sup> Section 1201 Report at 109.

<sup>34</sup> House Manager’s Report at 7.

### 3. Evidentiary Standards

In considering whether to recommend an exemption, the Register inquires: “Are users of a copyrighted work adversely affected by the prohibition on circumvention in their ability to make noninfringing uses of a class of copyrighted works, or are users likely to be so adversely affected in the next three years?”<sup>35</sup> This test breaks down into several elements.

#### a. Copyrightable Works at Issue

The first requirement for an exemption is that the class include at least some works protected by copyright.<sup>36</sup> The statute refers to a “class of copyrighted works”<sup>37</sup> and provides that the circumvention ban applies only to a TPM that controls access to “a work protected under this title.”<sup>38</sup>

#### b. Noninfringing Use

The second requirement is that the proposed uses are noninfringing under title 17.<sup>39</sup> Noninfringing uses include those the Office has protected by copyright exceptions, such as fair use (section 107), the exceptions for libraries and archives (section 108), and exceptions for adaptations of computer programs (section 117). As the Office has explained:

The Register will look to the Copyright Act and relevant judicial precedents when analyzing whether a proposed use is likely to be noninfringing. The statutory language requires that the use *is or is likely* to be noninfringing, not merely that the use might plausibly be considered noninfringing. As the Register has indicated previously, there is no “rule of doubt” favoring an exemption when it is unclear that a particular use is a fair or otherwise noninfringing use. Thus, [the record] must show more than that a particular use *could* be noninfringing. Rather, the [record] must establish that the proposed use is likely to qualify as noninfringing under relevant law.<sup>40</sup>

While “this standard does not require ‘controlling precedent directly on point,’” “the rulemaking is not an appropriate venue for breaking new ground in fair use

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<sup>35</sup> Section 1201 Report at 114–15; *see* 17 U.S.C. § 1201(a)(1)(C).

<sup>36</sup> Section 1201 Report at 115; *see* 17 U.S.C. § 1201(a)(1)(A), (a)(1)(C).

<sup>37</sup> 17 U.S.C. § 1201(a)(1)(C).

<sup>38</sup> *Id.* § 1201(a)(1)(A).

<sup>39</sup> Section 1201 Report at 115–17; *see* 17 U.S.C. § 1201(a)(1)(C).

<sup>40</sup> 2015 Recommendation at 15 (footnotes omitted); *see also* Section 1201 Report at 115–16.

jurisprudence.”<sup>41</sup> Proponents must therefore provide sufficient detail so that the proposed uses are cognizable for the Register to evaluate them and determine whether they are likely to be noninfringing under relevant statutory and case law.

### c. Causation

The third requirement is that the statutory prohibition on circumventing access controls is the cause of the adverse effects.<sup>42</sup> “Adverse impacts that flow from other sources, or that are not clearly attributable to implementation of a technological protection measure, are outside the scope of the rulemaking.”<sup>43</sup> For example, adverse effects stemming from “market-place trends, other technological developments, or changes in the roles of libraries, distributors or other intermediaries” are not cognizable harms under the statute.<sup>44</sup>

### d. Adverse Effects and the Statutory Factors

The final requirement is that users are either adversely affected, or are likely to be adversely affected, in their ability to make noninfringing uses during the next three years.<sup>45</sup> Proponents must show a need for circumvention to avoid any alleged adverse effects. This element is analyzed in reference to section 1201(a)(1)(C)’s statutory factors:

- (i) the availability for use of copyrighted works;
- (ii) the availability for use of works for nonprofit archival, preservation, and educational purposes;
- (iii) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research;
- (iv) the effect of circumvention of technological measures on the market for or value of copyrighted works; and
- (v) such other factors as the Librarian considers appropriate.<sup>46</sup>

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<sup>41</sup> Section 1201 Report at 116–17 (quoting 2010 Recommendation at 12).

<sup>42</sup> *Id.* at 115, 117; *see* 17 U.S.C. § 1201(a)(1)(C).

<sup>43</sup> Commerce Comm. Report at 37; House Manager’s Report at 6 (similar).

<sup>44</sup> House Manager’s Report at 6.

<sup>45</sup> Section 1201 Report at 115; *see* 17 U.S.C. § 1201(a)(1)(C).

<sup>46</sup> 17 U.S.C. § 1201(a)(1)(C); *see* Section 1201 Report at 115, 118.

In applying these factors, the Register “balances ‘[t]he harm identified by a proponent of an exemption . . . with the harm that would result from an exemption.’”<sup>47</sup> Weighing these factors may also require consideration of the benefits that the technological measure brings with respect to the overall creation and dissemination of works in the marketplace, in addition to any negative impact. As the legislative history explains, “the rulemaking proceedings should consider the positive as well as the adverse effects of these technologies on the availability of copyrighted materials.”<sup>48</sup>

Congress stressed that the “main focus of the rulemaking proceeding” should be on “whether a substantial diminution” of the availability of works for noninfringing uses is “*actually occurring*” in the marketplace.<sup>49</sup> To prove the existence of adverse effects, it is necessary to demonstrate “distinct, verifiable and measurable impacts” occurring in the marketplace, as exemptions “should not be based upon *de minimis* impacts.”<sup>50</sup> Thus, “mere inconveniences” or “individual cases” do not satisfy the rulemaking standard.<sup>51</sup>

To the extent a proponent relies on claimed future impacts rather than existing impacts, such future adverse impacts must be “likely.”<sup>52</sup> An exemption may be based upon anticipated, rather than actual, adverse impacts “only in extraordinary circumstances in which the evidence of likelihood of future adverse impact during that time period is highly specific, strong and persuasive.”<sup>53</sup>

In sum, for a finding of adverse effects, the evidence in the record “cannot be hypothetical, theoretical, or speculative, but must be real, tangible, and concrete. Ultimately, the evidence must show that adverse effects are not merely possible, but probable (*i.e.*, more likely than not to be occurring or likely to occur in the next three years).”<sup>54</sup>

#### ***D. Streamlined Renewal Process***

Beginning with the seventh triennial rulemaking, and following a comprehensive policy study of section 1201, the Copyright Office introduced a streamlined process to renew

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<sup>47</sup> Section 1201 Report at 118 (alteration and omission in original) (quoting Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 76 Fed. Reg. 60,398, 60,403 (Sept. 29, 2011)).

<sup>48</sup> House Manager’s Report at 6.

<sup>49</sup> *Id.*

<sup>50</sup> Commerce Comm. Report at 37.

<sup>51</sup> House Manager’s Report at 6.

<sup>52</sup> 17 U.S.C. § 1201(a)(1)(B), (C).

<sup>53</sup> House Manager’s Report at 6.

<sup>54</sup> Section 1201 Report at 120–21.

section 1201 exemptions.<sup>55</sup> Previously, in recognition of legislative history stating that the basis of an exemption should be established *de novo* in each triennial proceeding,<sup>56</sup> the Office had always required the factual record to be developed anew.<sup>57</sup> In its Section 1201 Report, the Office evaluated the possibility of a renewal process, noting a “broad consensus in favor of streamlining the process for renewing exemptions to which there is no meaningful opposition.”<sup>58</sup> The Office ultimately concluded that “the statutory language appears to be broad enough to permit determinations to be based upon evidence drawn from prior proceedings, but only upon a conclusion that this evidence remains reliable to support granting an exemption in the current proceeding.”<sup>59</sup> The Office further concluded that renewal may be sought only for exemptions in their current form, without modification, and that the Register “must apply the same evidentiary standards in recommending the renewal of exemptions as for first-time exemption requests.”<sup>60</sup>

The Office employed the streamlined process again in this proceeding and detailed the renewal process in its public notices.<sup>61</sup> Streamlined renewal is based upon a determination that, due to a lack of legal, marketplace, or technological changes, the factors that led the Register to recommend adoption of the exemption in the prior rulemaking are expected to continue into the forthcoming triennial period.<sup>62</sup> That is, the same material facts and circumstances underlying the previously adopted regulatory exemption may be relied on to renew the exemption.<sup>63</sup> Because the statute itself requires that exemptions must be adopted upon a fresh determination concerning the next three-year period,<sup>64</sup> the fact that the Librarian previously adopted an exemption creates no presumption that readoption is appropriate. Instead, the Office solicited petitions summarizing the basis for claiming a continuing need and justification for the

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<sup>55</sup> *Id.* at 127–28; *see* 2018 Recommendation at 17–19.

<sup>56</sup> *See* Commerce Comm. Report at 37 (explaining that for every rulemaking, “the assessment of adverse impacts on particular categories of works is to be determined *de novo*”).

<sup>57</sup> Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, 82 Fed. Reg. 29,804, 29,805 (June 30, 2017).

<sup>58</sup> Section 1201 Report at vi.

<sup>59</sup> *Id.* at 143.

<sup>60</sup> *Id.* at 145, 146.

<sup>61</sup> Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, 85 Fed. Reg. 37,399, 37,400–02 (June 22, 2020) (“NOI”); Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, 85 Fed. Reg. 65,293, 65,294–95 (Oct. 15, 2020) (“NPRM”).

<sup>62</sup> NOI at 37,401–02; NPRM at 65,294.

<sup>63</sup> NOI at 37,401–02; NPRM at 65,294.

<sup>64</sup> 17 U.S.C. § 1201(a)(1)(C).



exemption, and “petitioners also signed a declaration stating that, to the best of their personal knowledge, there ha[d] not been any material change in the facts, law, or other circumstances set forth in the prior rulemaking record such that renewal of the exemption would not be justified.”<sup>65</sup>

Next, the Office solicited comments from participants opposing the readoption of the exemption. Opponents were required to provide evidence that would allow the Register to reasonably conclude that the prior rulemaking record and any further information provided in the petitions were insufficient for her to recommend renewal without the benefit of a further developed record.<sup>66</sup> For example, a change in case law might affect whether a particular use is noninfringing, new technological developments might affect the availability for use of copyrighted works, or new business models might affect the market for or value of copyrighted works. If the appropriateness of renewing an exemption was meaningfully contested, that exemption would be automatically treated as a petition for a new exemption instead. That is, it would be fully noticed for written comment and public hearing to generate an updated administrative record for the Register to evaluate whether to recommend readoption, modification, or elimination of that exemption to the Librarian.<sup>67</sup>

Separately, as in prior rulemakings, the Office solicited petitions proposing that the Register recommend new exemptions. Petitions seeking to expand upon a current exemption were considered as petitions for new exemptions, since a sufficient administrative record had not yet been created to consider such additional activities.<sup>68</sup> In considering requests to expand exemptions, however, the Register will evaluate the relevance, if any, of the prior administrative record where it has been established that there have been no material changes in the facts or law with respect to the existing contours of that exemption. For example, as detailed below, the current proposed class 10, which would expand the exemption to permit “unlocking” of additional devices to allow them to connect to alternate mobile carriers, was considered against the backdrop of the prior administrative record.

Based on this process, the Register was able to recommend renewal of all exemptions adopted in the 2018 rulemaking, and to subsequently consider whether some of them

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<sup>65</sup> NPRM at 65,294–95.

<sup>66</sup> NOI at 37,402.

<sup>67</sup> See *id.* at 37,403 (stating that if a renewal petition is meaningfully opposed, “[t]hose exemptions will instead be subject to the more comprehensive rulemaking procedure in order to build out the administrative record”).

<sup>68</sup> *Id.* at 37,401.

should be modified to accommodate additional new uses through the development of an expanded administrative record.

### III. History of Eighth Triennial Proceeding

The Office initiated the eighth triennial rulemaking proceeding by issuing a notice of inquiry (“NOI”) on June 22, 2020.<sup>69</sup> The NOI requested petitions for renewals, petitions in opposition to renewal, and any petitions for new exemptions, including proposals to expand a current exemption.<sup>70</sup> In response, the Office received thirty-two renewal petitions and fifteen comments in response to those petitions.<sup>71</sup> Seven comments supported renewal of a current exemption, and eight raised discrete concerns with specific petitions, but did not oppose re-adoption of the relevant exemption.<sup>72</sup> The Office also received twenty-six petitions for new exemptions,<sup>73</sup> including thirteen seeking to expand certain current exemptions.<sup>74</sup>

On October 15, 2020, the Office issued its notice of proposed rulemaking (“NPRM”) identifying the existing exemptions for which the Register intended to recommend renewal, and outlined the proposed classes for new exemptions, for which three rounds of public comments were initiated.<sup>75</sup> Those proposals were organized into seventeen classes of works. The Office received 161 total submissions in response to the NPRM.<sup>76</sup>

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<sup>69</sup> NOI at 37,399.

<sup>70</sup> *Id.* at 37,400.

<sup>71</sup> NPRM at 65,295–96.

<sup>72</sup> *Id.* at 65,296. The submissions received in response to the NOI are available on the Office’s website. See *Eighth Triennial Section 1201 Proceeding* (2021), U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/1201/2021/> (last visited Oct. 14, 2021). References to these submissions are by party and class name (abbreviated where appropriate) followed by “Renewal Pet.,” “Renewal Comment,” or party name and class number followed by “Pet.,” “Initial,” “Opp’n,” or “Reply” for comments submitted in the first, second, or third round, as applicable. The comments filed by Joint Creators opposing new proposed classes had a technical issue that prevented the display of hyperlinks. Joint Creators submitted corrected comments, and citations here refer to the corrected versions.

<sup>73</sup> NPRM at 65,301.

<sup>74</sup> In addition, the Organization for Transformative Works’ (“OTW”) renewal petition sought to amend the current regulatory language. See OTW Noncom. Videos Renewal Pet. at 4 (“[T]he exemption should be renewed using the relatively simple language” from the 2008 rulemaking, as “[r]eturning to the simple, functionally similar language of the initial remix exemption (with the addition of Blu-ray) would clarify the exemption for ordinary users . . .”). The Office treated that request as a petition for expansion.

<sup>75</sup> NPRM at 65,293.

<sup>76</sup> One reply comment, from Pex, did not opine on a particular class but offered “general commentary on the importance of unfettered access to the content on platforms to the success of

After analyzing the written comments, the Office held seven days of public hearings from April 5–8 and April 19–21, 2021, via Zoom. Video recordings for these hearings are available on the Office’s website and YouTube pages.<sup>77</sup> In total, the Office heard testimony from 67 individuals on various panels, with nine additional participants offering views during an audience participation segment. After the hearings, the Office issued written questions to hearing participants in eight proposed classes and received 22 responses.<sup>78</sup>

In the seventh triennial rulemaking, the Office determined that further informal communications with non-governmental participants might be beneficial in limited circumstances.<sup>79</sup> The Office thus established guidelines for *ex parte* meetings, noting that the Office would not consider or accept any new documentary materials at these meetings, and requiring participants to provide a letter summarizing the meeting for the Office to include in the rulemaking record.<sup>80</sup> In the current proceeding, the Office employed substantially the same process for *ex parte* communications. The Office held 13 *ex parte* meetings with participants concerning 10 proposed classes.<sup>81</sup>

As required by section 1201(a)(1), the Register consulted with NTIA during this rulemaking. NTIA provided input at various stages and participated in the virtual public hearings. NTIA formally communicated its views on each of the proposed exemptions to the Register on October 1, 2021. The Office addresses NTIA’s substantive views on the proposed classes below.

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efficient copyright protection.” Pex Reply at 1. The Office did not consider this comment in connection with the proposed classes of exemptions. To the extent Pex’s comment was advocating for an exemption to permit circumvention for the purpose of monitoring content in connection with the DMCA’s notice and takedown procedures, *see* Pex Reply at 2, it may consider submitting a petition for a new exemption in the next rulemaking cycle.

<sup>77</sup> *See Eighth Triennial Section 1201 Proceeding* (2021), U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/1201/2021/> (last visited Oct. 14, 2021); U.S. Copyright Office, YOUTUBE, <https://www.youtube.com/uscopyrightoffice/> (last visited Oct. 14, 2021).

<sup>78</sup> Participants’ post-hearing letter responses are available on the Office’s website. *See Post-Hearing Questions*, U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/1201/2021/post-hearing/> (last visited Oct. 18, 2021).

<sup>79</sup> NPRM at 65,310; *see* Section 1201 Report at 150–51 (documenting stakeholder desire for such a process).

<sup>80</sup> NPRM at 65,310; *Ex Parte Communications*, U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/1201/2021/ex-parte-communications.html> (last visited Oct. 18, 2021).

<sup>81</sup> *See Ex Parte Communications*, U.S. COPYRIGHT OFFICE, <https://www.copyright.gov/1201/2021/ex-parte-communications.html> (last visited Oct. 18, 2021).

## IV. Renewal Recommendations

As set forth in the NPRM, the Register received petitions to renew every one of the exemptions adopted in the seventh triennial rulemaking. To the extent any renewal petition proposed uses beyond the current exemption, the Office disregarded those portions for purposes of considering renewal, and instead focused on whether the petition provided sufficient information to warrant readoption of the exemption in its current form.<sup>82</sup> Eight comments in response to renewal petitions raised discrete concerns with specific petitions, but none opposed the verbatim readoption of an existing regulatory exemption or disputed the reliability of the previously analyzed administrative record.<sup>83</sup>

The Register now finalizes the NPRM's proposal to recommend renewal of these exemptions based on the information provided in the renewal petitions and the lack of meaningful opposition, which demonstrated that the conditions that led to adoption of the exemptions are likely to continue during the next triennial period. The existing exemptions, and the bases for the recommendation to readopt each exemption in accordance with the streamlined renewal process, are briefly summarized below. Where noted, these exemptions serve as a baseline in considering subsequent requests for expansion. The recommended regulatory language for all exemptions in this rulemaking (including "straight renewals," expanded exemptions, and wholly new exemptions), is set forth in the Appendix.

### *A. Audiovisual works – educational and derivative uses*

Multiple individuals and organizations petitioned to renew the exemption codified at 37 C.F.R. § 201.40(b)(1), which contains multiple subparts covering use of short portions of motion pictures for various educational and derivative uses.<sup>84</sup> The Office did not receive meaningful opposition to readoption of these exemptions.<sup>85</sup> Petitions to renew the various subparts of the exemption are discussed below. The existing exemption and its

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<sup>82</sup> NPRM at 65,294.

<sup>83</sup> *Id.* at 65,295; *see also* NOI at 37,402 (describing "meaningful opposition" standard).

<sup>84</sup> *See* 37 C.F.R. § 201.40(b)(1). In the 2018 rulemaking, this recommended regulatory language was the result of consideration of one proposed class of works that grouped together five petitions. *See* 2018 Recommendation at 31–34.

<sup>85</sup> While six comments were received in response to the renewal petitions regarding audiovisual works used for educational and derivative purposes, the Office noted that each petition did not object to the renewal of the related exemption or lacked meaningful opposition. *See* NPRM at 65,295–98.

various subparts collectively serve as the baseline in assessing whether to recommend any expansions in Class 1.

**1. Audiovisual works – criticism, comment, teaching, or scholarship  
– universities and K-12 educational institutions**

Multiple individuals and organizations petitioned to renew the exemption for motion pictures for educational purposes by college and university or K-12 faculty and students.<sup>86</sup> The Office did not receive meaningful opposition to readoption of this exemption.<sup>87</sup> The petitions demonstrated the continuing need and justification for the exemption, stating that educators and students continue to rely on excerpts from digital media for class presentations and coursework. Peter Decherney, Katherine Sender, John Jackson, Console-ing Passions, the American Association of University Professors (“AAUP”), International Communication Association (“ICA”), Library Copyright Alliance (“LCA”), and Society for Cinema and Media Studies (“SCMS”) (collectively, “Joint Educators I”) provided several examples of professors using DVD clips in the classroom. For example, “Cornell University Communication professor Lee Humphreys samples short segments of movies and television shows for her lectures in her ‘Media Communication’ class” and has “shifted from using clips from YouTube because she wants to show higher quality clips and to avoid showing the attached advertisements to her students.”<sup>88</sup> Brigham Young University (“BYU”) stated that “on countless occasions,” “numerous instructors” need to show clips from motion pictures in the course of their teaching activities.<sup>89</sup>

In addition, co-petitioner Peter Decherney declared that he “continues to teach a course on Multimedia Criticism,” where his students “produce short videos analyzing media.”<sup>90</sup> Joint Educators I more broadly asserted that the “entire field” of video essays or multimedia criticism “could not have existed in the United States without fair use and

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<sup>86</sup> Decherney, Sender, Jackson, Int’l Commc’n Ass’n (“ICA”), Soc’y for Cinema and Media Studies (“SCMS”), Console-ing Passions, LCA, and Am. Ass’n of Univ. Professors (“AAUP”) (collectively, “Joint Educators I”) AV Educ. Renewal Pet.; Brigham Young Univ. & Brigham Young Univ. – Idaho (collectively, “BYU”) AV Educ. Renewal Pet.

<sup>87</sup> While the DVD Copy Control Association (“DVD CCA”) and the Advanced Access Content System Licensing Administrator (“AACSLA”) filed comments in response to the renewal petition, the comments did not object to renewal of the existing exemption, but discussed several purported deficiencies in the renewal petitions. *See generally* DVD CCA & AACSLA AV Educ. Renewal Comment.

<sup>88</sup> Joint Educators I AV Educ. Renewal Pet. at 3.

<sup>89</sup> BYU AV Educ. Renewal Pet. at 3.

<sup>90</sup> Joint Educators I AV Educ. Renewal Pet. at 3.

the 1201 educational exemption.”<sup>91</sup> Through these submissions, petitioners demonstrated personal knowledge and experience with regard to this exemption based on their representation of thousands of digital and literacy educators and/or members supporting educators and students, combined with past participation in the section 1201 triennial rulemaking.

## **2. Audiovisual works – criticism and comment – massive open online courses (“MOOCs”)**

Peter Decherney, Katherine Sender, John Jackson, Console-ing Passions, ICA, LCA, and SCMS (collectively, “Joint Educators II”) and BYU petitioned to renew the exemption for motion pictures for educational uses in MOOCs.<sup>92</sup> The Office did not receive meaningful opposition to readoption of this exemption.<sup>93</sup> The petitions demonstrated the continuing need and justification for the exemption, stating that instructors continue to rely on the exemption to develop, provide, and improve MOOCs, as well as increase the number of (and therefore access to) MOOCs in the field of film and media studies. Joint Educators II further noted that the “exemption has never been so relevant as it is now during the COVID–19 pandemic and the universal shift of our education systems to online learning.”<sup>94</sup> BYU noted that faculty and other educational professionals who create MOOCs “often need” to include clips from motion pictures as part of the curriculum.<sup>95</sup>

## **3. Audiovisual works – criticism and comment – digital and media literacy programs**

LCA and Professor Renee Hobbs petitioned to renew the exemption for motion pictures for educational uses in nonprofit digital and media literacy programs offered by libraries, museums, and other nonprofits.<sup>96</sup> No oppositions were filed against readoption of this exemption. The petition demonstrated the continuing need and justification for the exemption, and petitioners demonstrated personal knowledge and experience with regard to this exemption. For example, the petition stated that

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<sup>91</sup> *Id.*

<sup>92</sup> Joint Educators II AV Educ. MOOCs Renewal Pet.

<sup>93</sup> While DVD CCA & AACCS LA filed comments in response to the renewal petition, the comments did not object to renewal of the existing exemption. *See* DVD CCA & AACCS LA AV Educ. MOOCs Renewal Comment at 1.

<sup>94</sup> Joint Educators II AV Educ. MOOCs Renewal Pet. at 3.

<sup>95</sup> BYU AV Educ. MOOCs Renewal Pet. at 3.

<sup>96</sup> LCA & Hobbs AV Educ. Nonprofits Renewal Pet.

librarians across the country have relied on the current exemption and will continue to do so for their digital and media literacy programs.<sup>97</sup>

#### **4. Audiovisual works – criticism and comment – multimedia e-books**

Multiple petitioners jointly sought to renew the exemption for the use of motion picture excerpts in nonfiction multimedia e-books.<sup>98</sup> The Office did not receive meaningful opposition to readoption of this exemption.<sup>99</sup> The petition demonstrated the continuing need and justification for the exemption. In addition, the petitioners demonstrated personal knowledge through Professor Bobette Buster’s continued work on an e-book series based on her lecture series, “Deconstructing Master Filmmakers: The Uses of Cinematic Enchantment,” which, they said, “relies on the availability of high-resolution video not available without circumvention of technological protection measures.”<sup>100</sup>

#### **5. Audiovisual works – criticism and comment – filmmaking**

Multiple organizations petitioned to renew the exemption for motion pictures for uses in documentary films or other films where use is in a parody or for the work’s biographical or historically significant nature.<sup>101</sup> The Office did not receive meaningful opposition to readoption of this exemption.<sup>102</sup> The petitions summarized the continuing need and justification for the exemption, and the petitioners demonstrated personal knowledge and experience with regard to this exemption. For example, the International Documentary Association, Film Independent, and Kartemquin Educational Films (collectively, “Joint Filmmakers”)—which represent thousands of independent filmmakers across the nation—stated that TPMs such as encryption continue to prevent filmmakers from accessing needed material, and that this is “especially true for the kind of high fidelity motion picture material filmmakers need to satisfy both distributors and

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<sup>97</sup> *Id.* at 3.

<sup>98</sup> Buster, Authors All. & AAUP Nonfiction Multimedia E-Books Renewal Pet.

<sup>99</sup> While DVD CCA & AACCS LA filed a comment in response to the renewal petition that objected to the current regulatory language (*i.e.*, nonfiction multimedia e-books), the Office determined that the opposition did not qualify as “meaningful.” NPRM at 65,297.

<sup>100</sup> Buster, Authors All. & AAUP Nonfiction Multimedia E-Books Renewal Pet. at 3.

<sup>101</sup> Int’l Documentary Ass’n, Film Indep., and Kartemquin Educ. Films (collectively, “Joint Filmmakers”) Documentary Films Renewal Pet.; New Media Rights (“NMR”) Documentary Films Renewal Pet.

<sup>102</sup> While DVD CCA & AACCS LA filed a comment in response to the renewal petition that objected to the characterization of the exemption filed by petitioners, the Office found that it was not “necessary to opine on the characterization of the petitions” and determined that petitioners sufficiently supported their renewal petition. NPRM at 65,297.



viewers.”<sup>103</sup> Petitioners stated that they personally know many filmmakers who have found it necessary to rely on this exemption and will continue to do so.<sup>104</sup>

## 6. Audiovisual works – criticism and comment – noncommercial videos

Two organizations petitioned to renew the exemption for motion pictures for uses in noncommercial videos.<sup>105</sup> The Office did not receive meaningful opposition to readoption of this exemption.<sup>106</sup> The petitions demonstrated the continuing need and justification for the exemption, and the petitioners demonstrated personal knowledge and experience with regard to this exemption. For example, one of the petitioners, the Organization for Transformative Works (“OTW”), has advocated for the noncommercial video exemption in past triennial rulemakings and stated that it has heard from “a number of noncommercial remix artists” who have used the exemption and anticipate needing to use it in the future.<sup>107</sup> OTW included an account from an academic who stated that footage ripped from DVDs and Blu-ray is preferred for “vidders” (noncommercial remix artists) because “it is high quality enough to bear up under the transformations that vidders make to it.”<sup>108</sup> Similarly, New Media Rights (“NMR”) stated that its staff personally knows “many video creators that have found it necessary to rely on this exemption during the current triennial period” and “who intend to make these types of uses in the next triennial period.”<sup>109</sup>

### *B. Audiovisual works – accessibility*

Multiple organizations petitioned to renew the exemption for motion pictures for the provision of captioning and/or audio description by disability services offices or similar

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<sup>103</sup> Joint Filmmakers Documentary Films Renewal Pet. at 3.

<sup>104</sup> *Id.* at 3; NMR Documentary Films Renewal Pet. at 3.

<sup>105</sup> NMR Noncom. Videos Renewal Pet.; OTW Noncom. Videos Renewal Pet.

<sup>106</sup> Two comments, one from DVD CCA & AACS LA and one from the Entertainment Software Association (“ESA”), the Motion Picture Association (“MPA”), and the Recording Industry Association of America (“RIAA”), objected to the proposed change in language sought by OTW, arguing that the proposed change requires a modification of the exemption. DVD CCA & AACS LA Noncom. Videos Renewal Comment; ESA, MPA & RIAA Noncom. Videos Renewal Comment. The Office agreed that the proposed modifications “are appropriately addressed” within the full rulemaking proceeding and included OTW’s renewal petition as part of the proposed classes for expanded exemptions. NPRM at 65,298.

<sup>107</sup> OTW Noncom. Videos Renewal Pet. at 3.

<sup>108</sup> *Id.*

<sup>109</sup> NMR Noncom. Videos Renewal Pet. at 3.

units for students with disabilities at educational institutions.<sup>110</sup> No oppositions were filed against re-adoption of this exemption. The petitions demonstrated the continuing need and justification for the exemption, and the petitioners demonstrated personal knowledge and experience as to the exemption. For example, BYU asserted that its disability services offices “sometimes need to create accessible versions of motion pictures” to accommodate its students with disabilities.<sup>111</sup> Both petitions stated that there is a need for the exemption going forward; indeed, one group of petitioners stated that “the need is likely to increase significantly in light of the ongoing COVID–19 pandemic as many educational institutions shift to online learning and the use of digital multimedia by faculty increases.”<sup>112</sup>

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 3.

### *C. Literary works distributed electronically – accessibility*

Multiple organizations petitioned to renew the exemption for literary works distributed electronically (*i.e.*, e-books) for use with assistive technologies for persons who are blind, visually impaired, or have print disabilities.<sup>113</sup> No oppositions were filed against re-adoption of this exemption. The petitions demonstrated the continuing need and justification for the exemption, stating that individuals who are blind, visually impaired, or print disabled are significantly disadvantaged with respect to obtaining accessible e-book content because TPMs interfere with the use of assistive technologies.<sup>114</sup> Petitioners noted that the record underpinning this exemption “has stood and been re-established in the past six triennial reviews dating back to 2003,” and that the “accessibility of ebooks is frequently cited as a top priority” by their members.<sup>115</sup> In addition, petitioners noted the unique challenges COVID–19 poses to the blind, visually impaired, and print disabled due to limited physical access to libraries and the shift to virtual learning.<sup>116</sup> Finally, petitioners demonstrated personal knowledge and experience with regard to the assistive technology exemption; they are all organizations that advocate for the blind, visually impaired, and print disabled.

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<sup>110</sup> Ass’n of Transcribers and Speech-to-Text Providers (“ATSP”), Ass’n on Higher Educ. and Disability (“AHEAD”) & LCA Captioning Renewal Pet.; BYU Captioning Renewal Pet.

<sup>111</sup> BYU Captioning Renewal Pet. at 3.

<sup>112</sup> ATSP, AHEAD & LCA Captioning Renewal Pet. at 3.

<sup>113</sup> Am. Council of the Blind (“ACB”), Am. Found. for the Blind (“AFB”), Nat’l Fed’n of the Blind (“NFB”), LCA, Benetech/Bookshare, and HathiTrust Assistive Technologies Renewal Pet.

<sup>114</sup> *Id.* at 4.

<sup>115</sup> *Id.* at 3–4.

<sup>116</sup> *Id.* at 4.

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 8.

*D. Literary works – medical device data*

Hugo Campos petitioned to renew the exemption covering access to patient data on networked medical devices.<sup>117</sup> No oppositions were filed against readoption of this exemption, and Consumer Reports submitted a comment in support of the renewal petition.<sup>118</sup> Mr. Campos’s petition demonstrated the continuing need and justification for the exemption, stating that patients continue to need access to data output from their medical devices to manage their health.<sup>119</sup> Mr. Campos demonstrated personal knowledge and experience with regard to this exemption, as he is a patient needing access to the data output from his medical device and is a member of a coalition whose members research, comment on, and examine the effectiveness of networked medical devices.<sup>120</sup>

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 9.

*E. Computer programs – unlocking*

Multiple organizations petitioned to renew the exemption for computer programs that operate cellphones, tablets, mobile hotspots, or wearable devices (*e.g.*, smartwatches), to allow connection of a new or used device to an alternative wireless network (“unlocking”).<sup>121</sup> No oppositions were filed against readoption of this exemption, and Consumer Reports submitted a comment in support of the renewal petition.<sup>122</sup> The petitions demonstrated the continuing need and justification for the exemption, stating that consumers of the enumerated products continue to need to be able to unlock the devices so they can switch network providers. For example, the Institute of Scrap Recycling Industries, Inc. (“ISRI”) stated that its members continue to purchase or acquire donated cell phones, tablets, and other wireless devices and try to reuse them, but that wireless carriers still lock devices to prevent them from being used on other carriers.<sup>123</sup> In addition, petitioners demonstrated personal knowledge and experience

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<sup>117</sup> Campos Medical Devices Renewal Pet.

<sup>118</sup> Consumer Reports Medical Devices Renewal Comment.

<sup>119</sup> Campos Medical Devices Renewal Pet. at 3.

<sup>120</sup> *Id.* at 3.

<sup>121</sup> Competitive Carriers Ass’n (“CCA”) Unlocking Renewal Pet.; ISRI Unlocking Renewal Pet.

<sup>122</sup> Consumer Reports Unlocking Renewal Comment.

<sup>123</sup> ISRI Unlocking Renewal Pet. at 3.

with regard to this exemption.<sup>124</sup> Competitive Carriers Association (“CCA”) and ISRI represent companies that rely on the ability to unlock cellphones. Both petitioners also participated in past 1201 triennial rulemakings relating to unlocking lawfully-acquired wireless devices.

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 10.

#### *F. Computer programs – jailbreaking*

Multiple organizations petitioned to renew the exemptions for computer programs that operate smartphones, tablets and other portable all-purpose mobile computing devices, smart TVs, or voice assistant devices to allow the device to interoperate with or to remove software applications (“jailbreaking”).<sup>125</sup> No oppositions were filed against readoption of this exemption, and Consumer Reports submitted a comment in support of the renewal petition.<sup>126</sup> The petitions demonstrated the continuing need and justification for the exemption, and that petitioners have personal knowledge and experience with regard to this exemption.<sup>127</sup> For example, regarding smart TVs specifically, the Software Freedom Conservancy (“SFC”) asserted that it has “reviewed the policies and product offerings of major Smart TV manufacturers (Sony, LG, Samsung, etc.) and they are substantially the same as those examined during the earlier rulemaking process.”<sup>128</sup> The petitions stated that, absent an exemption, TPMs applied to the enumerated products would have an adverse effect on noninfringing uses, such as being able to install third-party applications on a smartphone or download third-party software on a smart TV to enable interoperability.<sup>129</sup> For example, Electronic Frontier Foundation’s (“EFF”) petition outlined its declarant’s experience with instances where it was necessary to replace the software on a smartphone, smart TV, and tablet.<sup>130</sup>

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 11.

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<sup>124</sup> CCA Unlocking Renewal Pet. at 3; ISRI Unlocking Renewal Pet. at 3.

<sup>125</sup> EFF Jailbreaking Renewal Pet.; NMR Jailbreaking Renewal Pet.; Software Freedom Conservancy (“SFC”) Jailbreaking Renewal Pet.

<sup>126</sup> Consumer Reports Jailbreaking Renewal Comment.

<sup>127</sup> EFF Jailbreaking Renewal Pet. at 3–4; NMR Jailbreaking Renewal Pet. at 3; SFC Jailbreaking Renewal Pet. at 3.

<sup>128</sup> SFC Jailbreaking Renewal Pet. at 3.

<sup>129</sup> EFF Jailbreaking Renewal Pet. at 3; SFC Jailbreaking Renewal Pet. at 3; *see* NMR Jailbreaking Renewal Pet. at 3.

<sup>130</sup> EFF Jailbreaking Renewal Pet. at 3–4.

*G. Computer programs – repair of motorized land vehicles*

Multiple organizations petitioned to renew the exemption for computer programs that control motorized land vehicles, including farm equipment, for purposes of diagnosis, repair, or modification of a vehicle function.<sup>131</sup> The Office did not receive meaningful opposition to readoption of this exemption,<sup>132</sup> and Consumer Reports submitted a comment in support of the renewal petition.<sup>133</sup> The petitions demonstrated the continuing need and justification for the exemption. For example, the Motor & Equipment Manufacturers Association (“MEMA”) stated that over the past three years, its membership “has seen firsthand that the exemption is helping protect consumer choice and a competitive market, while mitigating risks to intellectual property and vehicle safety.”<sup>134</sup> The Auto Care Association (“ACA”) stated that “[u]nless this exemption is renewed, the software measures manufacturers deploy for the purpose of controlling access to vehicle software will prevent Auto Care members from lawfully assisting consumers in the maintenance, repair, and upgrade of their vehicles.”<sup>135</sup> The Specialty Equipment Market Association (“SEMA”) stated that it “is unaware of any factor, incident or reason to change the exemption and the need for the exemption remains valid and imperative.”<sup>136</sup> The petitioners demonstrated personal knowledge and experience with regard to this exemption; each either represents or gathered information from individuals or businesses that perform vehicle service and repair.<sup>137</sup>

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<sup>131</sup> Auto Care Ass’n (“ACA”) Vehicle Repair Renewal Pet.; Am. Farm Bureau Fed’n (“AFBF”) Vehicle Repair Renewal Pet.; Consumer Tech. Ass’n (“CTA”) Vehicle Repair Renewal Pet.; Motor & Equip. Mfrs. Ass’n (“MEMA”) Vehicle Repair Renewal Pet.; Specialty Equip. Mkt. Ass’n (“SEMA”) Vehicle Repair Renewal Pet.

<sup>132</sup> While the Alliance for Automotive Innovation (“AAI”) did not oppose renewal of the current exemption, AAI raised concerns with both ACA’s and MEMA’s renewal petitions on the issue of third-party assistance. AAI Vehicle Repair Renewal Comment at 2. The Office addressed this issue in the NPRM, *see* NPRM at 65,300, and provides further analysis below in its discussion of proposed Class 12.

<sup>133</sup> Consumer Reports Vehicle Repair Renewal Comment.

<sup>134</sup> MEMA Vehicle Repair Renewal Pet. at 3.

<sup>135</sup> ACA Vehicle Repair Renewal Pet. at 3.

<sup>136</sup> SEMA Vehicle Repair Renewal Pet. at 3.

<sup>137</sup> ACA Vehicle Repair Renewal Pet. at 3; AFBF Vehicle Repair Renewal Pet. at 3; CTA Vehicle Repair Renewal Pet. at 3; MEMA Vehicle Repair Renewal Pet. at 3; SEMA Vehicle Repair Renewal Pet. at 3.

### *H. Computer programs – repair of smartphones, home appliances, and home systems*

Multiple organizations petitioned to renew the exemption for computer programs that control smartphones, home appliances, or home systems, for diagnosis, maintenance, or repair of the device or system.<sup>138</sup> The Office did not receive meaningful opposition to readoption of this exemption,<sup>139</sup> and Consumer Reports submitted a comment in support of the renewal petition.<sup>140</sup> The petitions demonstrated the continuing need and justification for the exemption. For example, EFF, the Repair Association, and iFixit asserted that “[m]anufacturers of these devices continue to implement technological protection measures that inhibit lawful repairs, maintenance, and diagnostics, and they show no sign of changing course.”<sup>141</sup>

This existing exemption, as well as the existing exemption pertaining to repair of motorized land vehicles, serve as the baseline in assessing whether to recommend any expansions in Class 12.

### *I. Computer programs – security research*

Multiple organizations and security researchers petitioned to renew the exemption permitting circumvention for purposes of good-faith security research.<sup>142</sup> No oppositions were filed against readoption of this exemption, and Consumer Reports submitted a comment in support of the renewal petition.<sup>143</sup> The petitioners demonstrated the continuing need and justification for the exemption, as well as personal knowledge and experience with regard to this exemption. For example,

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<sup>138</sup> EFF Device Repair Renewal Pet.; EFF, Repair Ass’n & iFixit Device Repair Renewal Pet.

<sup>139</sup> While DVD CCA & AACCS LA did not oppose renewal of the current exemption, they requested that the Office “expressly . . . reject the implied assertion that some of the activity used as examples in the renewal petition” are permitted by the current exemption. DVD CCA & AACCS LA Device Repair Renewal Comment at 1, 3–4. In the NPRM, the Office stated that it is “beyond the scope of the renewal phase” for the Office “to opine on examples of particular uses” and that the “sufficiency of the petitions do not depend on whether this specific example qualifies under the current exemption.” NPRM at 65,300.

<sup>140</sup> Consumer Reports Device Repair Comment.

<sup>141</sup> EFF Device Repair Renewal Pet. at 3; EFF, Repair Ass’n & iFixit Device Repair Renewal Pet. at 3.

<sup>142</sup> Blaze & Bellovin Security Research Renewal Pet.; Halderman, Ctr. for Democracy & Tech. (“CDT”), and U.S. Tech. Policy Comm. of the Ass’n for Computing Mach. (“ACM”) Security Research Renewal Pet.; MEMA Security Research Renewal Pet.

<sup>143</sup> Consumer Reports Security Research Comment; *see also* Campos Medical Devices Renewal Pet. at 4 (“[W]e also support the petition for an exemption for good-faith security research, which is critical to ensure our medical devices are secure from vulnerabilities.”).

Professor J. Alex Halderman, the Center for Democracy and Technology (“CDT”), and the U.S. Technology Policy Committee of the Association for Computing Machinery (“ACM”) highlighted the need to find and detect vulnerabilities in voting machines and other election systems, the increased proliferation of consumer Internet of Things devices, and the increasing reliance on digital systems combined with greater aggressiveness on the part of threat actors, including other nation states.<sup>144</sup> The petition from Professors Matt Blaze and Steven Bellovin asserted that in the past three years, “one of us has received threats of litigation from copyright holders in connection with his security research on software in voting systems.”<sup>145</sup> Finally, MEMA stated that its membership “experienced firsthand that the exemption is helping encourage innovation in the automotive industry while mitigating risks to intellectual property and vehicle safety,” and opined that the current exemption strikes an “appropriate balance.”<sup>146</sup>

This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 13.

#### *J. Computer programs – software preservation*

The Software Preservation Network (“SPN”) and LCA petitioned to renew the exemption for computer programs other than video games, for the preservation of computer programs and computer program-dependent materials by libraries, archives, and museums.<sup>147</sup> No oppositions were filed against readoption of this exemption. The petition stated that libraries, archives, and museums continue to need the exemption to preserve and curate software and materials dependent on software. For example, the petition asserted that “researchers at [the University of Virginia] designed a project in order to access the ‘Peter Sheeran papers’ – a collection of drawings and plans from a local Charlottesville architecture firm,” and that without the exemption, “the outdated Computer Aided Design (‘CAD’) software used to create many of the designs in the Sheeran papers may have remained inaccessible to researchers, rendering the designs themselves inaccessible, too.”<sup>148</sup> In addition, petitioners demonstrated personal knowledge and experience with regard to this exemption through their representation of major library associations with members who have relied on this exemption.<sup>149</sup>

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<sup>144</sup> Halderman, CTD & ACM Security Research Renewal Pet. at 4.

<sup>145</sup> Blazer & Bellovin Security Research Renewal Pet. at 3.

<sup>146</sup> MEMA Security Research Renewal Pet. at 3.

<sup>147</sup> SPN & LCA Software Preservation Renewal Pet.

<sup>148</sup> *Id.* at 3.

<sup>149</sup> *Id.*

*K. Computer programs – video game preservation*

SPN and LCA petitioned to renew the exemption for preservation of video games for which outside server support has been discontinued.<sup>150</sup> No oppositions were filed against re-adoption of this exemption, and Consumer Reports submitted a comment in support of the renewal petition.<sup>151</sup> The petition stated that libraries, archives, and museums continue to need the exemption to preserve and curate video games in playable form. For example, the petition highlighted the Georgia Tech University Library’s Computing Lab, retroTECH, which has a significant collection of recovered video game consoles, made accessible for research and teaching uses pursuant to the exemption.<sup>152</sup> In addition, the Museum of Digital Arts and Entertainment in Oakland, California relied on the exemption to restore a recent PC game, in collaboration with Microsoft and the original developers, despite potential digital rights management issues.<sup>153</sup> Petitioners demonstrated personal knowledge and experience with regard to this exemption through their representation of members who have relied on this exemption.

This existing exemption, as well as the above exemption pertaining to software preservation, serve as the baseline in assessing whether to recommend any expansions in Class 14.

*L. Computer programs – 3D printers*

Michael Weinberg petitioned to renew the exemption for computer programs that operate 3D printers to allow use of alternative feedstock.<sup>154</sup> No oppositions were filed against re-adoption of this exemption. The petition demonstrated the continuing need and justification for the exemption, and the petitioner demonstrated personal knowledge and experience regarding the exemption. Specifically, Mr. Weinberg declared that he is a member of the 3D printing community and has been involved with this exemption request “during each cycle it has been considered by the Copyright Office.”<sup>155</sup> In addition, the petition stated that manufacturers of 3D printers continue to limit the types of materials that may be used with the devices.<sup>156</sup>

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<sup>150</sup> SPN & LCA Abandoned Video Game Renewal Pet.

<sup>151</sup> Consumer Reports Abandoned Video Game Renewal Comment.

<sup>152</sup> SPN & LCA Abandoned Video Game Renewal Pet. at 3.

<sup>153</sup> *Id.*

<sup>154</sup> Weinberg 3D Printers Renewal Pet.

<sup>155</sup> *Id.* at 3.

<sup>156</sup> *Id.*



This existing exemption serves as the baseline in assessing whether to recommend any expansions in Class 15.

## V. Discussion of New Proposed Classes

### A. Proposed Class 1: Audiovisual Works—Criticism and Comment

#### 1. Background

##### a. Summary of Proposed Exemptions

Three petitions seek expansion of the existing exemption allowing circumvention of access controls protecting excerpts of motion pictures on DVDs, Blu-ray discs, and digitally transmitted video for purposes of criticism and comment, including for educational purposes by certain users.<sup>157</sup> The current exemption, codified at 37 C.F.R. § 201.40(b)(1), permits circumvention by various users, including creators of noncommercial videos, college and university faculty and students, kindergarten through twelfth grade educators and students, and faculty of massive open online courses (“MOOCs”) offered at accredited, nonprofit institutions. Because the new proposals raise some shared concerns, including the impact of TPMs on the alleged noninfringing uses of motion pictures and whether alternative methods of accessing the content could alleviate potential adverse impacts, the Office grouped these petitions into one class.

##### *i. Noncommercial Videos*

OTW proposes broadening the existing exemption for noncommercial videos by eliminating multiple limitations (discussed below). OTW’s initial comment included the following suggested 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 or comment in noncommercial videos, and where the person engaging in circumvention believes and has reasonable grounds for believing that circumvention is necessary to fulfill the purpose of the use. For purposes of this exemption, “noncommercial videos” includes videos created pursuant to a paid commission, provided that the commissioning entity’s use is noncommercial.<sup>158</sup>

Professor Francesca Coppa, Professor of English and Film Studies and Director of Women’s Studies at Muhlenberg College, filed reply comments in support of OTW’s

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<sup>157</sup> One petition, from OTW, was styled as a petition for renewal of the existing exemption. However, because it proposed significant revisions to the existing exemption, the Office has treated it as a petition for a new exemption. NPRM at 65,298.

<sup>158</sup> OTW Class 1 Initial at 2.

proposal.<sup>159</sup> The petition was opposed by Joint Creators, DVD Copy Control Association (“DVD CCA”), and the Advanced Access Content System Licensing Administrator (“AACCS LA”), with the latter two filing a joint opposition.<sup>160</sup>

*ii. Universities and K-12 Educational Institutions*

As noted above, the 2018 rulemaking resulted in an exemption to permit the use of excerpts of motion pictures on DVDs, Blu-ray discs, and digitally transmitted video by educators and students for purposes of comment and criticism under varying conditions.<sup>161</sup> Brigham Young University (“BYU”) and Brigham Young University-Idaho (“BYU-Idaho”)<sup>162</sup> filed a petition to expand the exemption to permit circumvention for “a noninfringing use under 17 U.S.C. §§ 107, 110(1), 110(2), or 112(f).”<sup>163</sup> It proposes the following language:

Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, 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 Content System, or via a digital transmission protected by a technological measure, where circumvention is undertaken by college and university employees or students or by kindergarten through twelfth-grade (K-12) educators or students (where the K-12 student is circumventing under the direct supervision of an educator), including of accredited general educational development (GED) programs, for a noninfringing use under 17 U.S.C. §§ 107, 110(1), 110(2), or 112(f).<sup>164</sup>

*iii. Massive Open Online Courses (“MOOCs”)*

Peter Decherney, Professor of Cinema and Media Studies and English at the University of Pennsylvania, on behalf of himself and a group of educators, the Library Copyright Alliance (LCA), and executives of several online platforms offering instructional

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<sup>159</sup> Francesca Coppa Class 1 Reply.

<sup>160</sup> Joint Creators Class 1 Opp’n; DVD CCA & AACCS LA Class 1 Opp’n.

<sup>161</sup> 37 C.F.R. § 201.40(b)(1) (2020).

<sup>162</sup> BYU and BYU-Idaho filed a joint petition and joint comments in Class 1. Therefore, they are collectively referred to here as “BYU.” However, both parties filed separate post-hearing responses. The responses will be separately identified by the filing party.

<sup>163</sup> BYU Class 1 Pet. at 2.

<sup>164</sup> *Id.*

materials (collectively “Joint Educators”<sup>165</sup>) seek to expand the current exemption to cover “educators and preparers of online learning materials” “for the purpose of criticism, comment, illustration and explanation in offerings for registered learners on online learning platforms when use of the film and media excerpts will contribute significantly to learning.”<sup>166</sup> They proposed the following language:

To allow educators and preparers of online learning materials to use short portions of motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, for the purpose of criticism, comment, illustration and explanation in offerings for registered learners on online learning platforms when use of the film and media excerpts will contribute significantly to learning.

The online provider will limit these online learning materials, to the extent technologically feasible, to registered learners of the online learning platform, institute copyright policies, and provide copyright information to educators and preparers of online learning materials, learners, and relevant staff members.

Further, the online provider, to the extent technologically feasible, will work to reasonably prevent unauthorized further dissemination of online learning materials in accessible form to others, including after the registration period ends.<sup>167</sup>

For the reasons discussed below, the Register recommends that the Librarian grant some, but not all, of the proposed expansions.

### **b. Overview of Issues**

The three petitions share the desire to circumvent TPMs employed on DVDs and Blu-ray discs, and by various online streaming services, to protect motion pictures.<sup>168</sup> The

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<sup>165</sup> Ruth Farmer was not listed as part of the Joint Educators group in the petition; however, she was part of the group when they submitted comments. This is the only difference between the two groups. Therefore, we refer to them, both for the petition and the comments, as the Joint Educators.

<sup>166</sup> Joint Educators Class 1 Pet. at 2.

<sup>167</sup> *Id.* at 2–3.

<sup>168</sup> Although OTW’s proposed exemption language eliminates references to mediums on which TPMs apply under the existing exemption (*i.e.*, DVDs, Blu-ray discs, and digital transmissions), the Office understands OTW’s request as permitting circumvention of such TPMs. See OTW Class 1 Initial at 2 (“The TPMs and methods of circumvention addressed are the same as those in the existing exemption.”); Tr. at 240:11–14 (Apr. 6, 2021) (Rosenblatt, OTW) (“[W]e’re not wedded to removing any reference to medium. Our concern is we want to make sure that DVD, Blu-ray, and streams are included.”).

current proposals, some of which echo proposals from previous rulemakings, describe several uses of motion pictures that proponents contend are noninfringing and that they believe are likely to be adversely affected by section 1201's prohibition on circumvention of access controls. While the proposed uses are more specifically discussed below, the record reveals certain commonalities.

Two of the three proposals (the exception being BYU's proposal which seeks use of full-length works), are limited to uses of short portions of motion pictures, including television shows and videos. Under section 101 of the Copyright Act, "motion pictures" are defined as a broad subset of "audiovisual works" that includes television shows, online videos, news, commercials, and other works "consisting of a series of related images which, when shown in succession, impart an impression of motion, together with accompanying sounds, if any."<sup>169</sup> Petitioners did not request an exemption to circumvent TPMs on audiovisual works that are not motion pictures.

In addition, the proposed expansions implicate the same types of TPMs regardless of the proposed noninfringing use, namely the Content Scramble System ("CSS") on DVDs, the Advanced Access Content System ("AACSS") on Blu-ray discs, and various TPMs applicable to online distribution services.<sup>170</sup>

#### *i. Screen-Capture Technology*

In the 2015 rulemaking, the Register concluded that certain uses of motion picture clips for criticism and comment do not require access to higher quality content, and that screen capture technology may be an alternative to circumvention.<sup>171</sup> The Register noted, however, that it can be unclear to users as to whether screen-capture technology may in fact involve circumvention.<sup>172</sup> The Acting Register reached similar conclusions in the 2018 rulemaking.<sup>173</sup> Accordingly, the existing exemption includes a screen-capture provision to address the possibility of circumvention when using this technology.<sup>174</sup> In addition, to accommodate instances where screen capture is not an adequate alternative, the exemption allows circumvention for certain uses if "the person engaging in circumvention . . . reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content."<sup>175</sup>

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<sup>169</sup> 17 U.S.C. § 101 (definition of "motion pictures").

<sup>170</sup> See 2018 Recommendation at 34 & n.163.

<sup>171</sup> 2015 Recommendation at 99.

<sup>172</sup> *Id.*

<sup>173</sup> 2018 Recommendation at 84–85.

<sup>174</sup> 37 C.F.R. § 201.40(b)(1).

<sup>175</sup> *Id.*

BYU and Joint Educators now seek to remove references to screen-capture technology, arguing that it frequently is not a viable alternative because it results in degraded-quality (and thus unusable) content,<sup>176</sup> and that such references are confusing.<sup>177</sup> Although OTW's written comments express concern regarding screen-capture technology generally,<sup>178</sup> its representative made clear during the hearing that OTW is not "requesting the removal of screen capture from the exemption," but rather "removing the requirement of evaluating screen capture" before engaging in circumvention.<sup>179</sup> OTW's exemption language proposes a similar evaluation by changing the phrase "the person engaging in circumvention . . . reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content" to "where the person engaging in circumvention believes and has reasonable grounds for believing that circumvention is necessary to fulfill the purpose of the use."<sup>180</sup> OTW seeks to clarify that, when considering the need for circumvention, a user is not required to *use* screen-capture technology to determine that it is unable to produce the required level of high-quality content.<sup>181</sup>

Opponents assert that screen-capture technology has improved and remains an adequate alternative to circumvention for many of the proposed uses.<sup>182</sup> DVD CCA and AACLS LA maintain that OTW's proposal would "no longer require the beneficiary to consider whether the planned use could be achieved without circumvention (e.g., by making use of screen capture technology)."<sup>183</sup> They note that "[t]he 2012 Recommendation establishing screen capture as an alternative to circumvention resulted

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<sup>176</sup> BYU Class 1 Initial at 23; Joint Educators Class 1 Initial at 7; *see* 2018 Recommendation at 35.

<sup>177</sup> BYU Class 1 Initial at 23.

<sup>178</sup> *See* OTW Class 1 Initial at 3–4; OTW Class 1 Reply at 2–3.

<sup>179</sup> Tr. at 160:02–13 (Apr. 6, 2021) (Rosenblatt, OTW).

<sup>180</sup> OTW Class 1 Initial at 2.

<sup>181</sup> Tr. at 256:10–13 (Apr. 6, 2021) (Turk, OTW) ("The existing language can be read to suggest that people have to screen capture before they can rip, and that seems silly and unnecessarily ambiguous."); Tr. at 258:09–12 (Apr. 6, 2021) (Rosenblatt, OTW) (seeking clarification in the regulatory language that it is not necessary to attempt screen capture before circumventing).

<sup>182</sup> *See* Joint Creators Class 1 Opp'n at 11 ("[S]ome of the expressed concerns with the quality of screen capture clips are overrated, as the quality of screen capture services continues to improve") (citing Daryl Baxter, *The Best Free Screen Recorders for Home for WFH in 2021*, TECHRADAR, <https://www.techradar.com/news/the-best-free-screen-recorder#1-obs-studio> (last updated Sept. 24, 2021); Paul Bender, *13 Best Screen Recording Software for Windows PCs – Free and Paid*, ISPRING: INSTRUCTIONAL DESIGN (Oct. 11, 2021), <https://www.ispringsolutions.com/blog/10-best-screen-recording-software-for-windows-free-and-paid>); DVD CCA & AACLS LA Class 1 Opp'n at 4–6, 39.

<sup>183</sup> DVD CCA & AACLS LA Class 1 Opp'n at 3.

from a more developed record . . . , which demonstrated how screen capture technology could serve for some of the proposed uses,”<sup>184</sup> and that “[i]n the 2015 Recommendation, the Register again found that screen capture technology was satisfactory for uses that did not require high-quality images.”<sup>185</sup> They also state that in the 2018 Recommendation, “[t]he Acting Register assumed the suitability of screen capture for some uses by noting that the record shows screen capture is insufficient for certain other uses.”<sup>186</sup> In addition, they state that “any effort to make the exemption simple and concise should not be done at the expense of ignoring the law in favor of artistic preferences.”<sup>187</sup>

Similarly, Joint Creators cite the Register’s 2018 Recommendation, stating that “a requirement that users consider whether it is really necessary to engage in circumvention before doing so is consistent with the aims of the rulemaking.”<sup>188</sup> They maintain further that Congress intended that “exemptions should be narrowly tailored to avoid swallowing the general rule against circumvention,”<sup>189</sup> and that “screen-capture is the most narrowly tailored and appropriate method of obtaining access.”<sup>190</sup> Finally, Joint Creators note that “the existing exemption does not *require* the use of screen capture and expressly allows for circumvention where a user ‘reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content.’”<sup>191</sup>

### *ii. Universities and K-12 Educational Institutions*

In the 2018 rulemaking, the Acting Register recommended expansion of the exemption to recognize the need for K-12 and university faculty and students to engage with motion picture excerpts of high quality. Specifically, the exemption eliminated distinctions between K-12 institutions and universities and colleges, as well as between faculty and students (K-12 students, however, are required to act under the direct supervision of K-12 educators). The exemption also was expanded to allow uses for

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<sup>184</sup> *Id.* at 5.

<sup>185</sup> *Id.* at 6.

<sup>186</sup> *Id.*

<sup>187</sup> *Id.* at 13.

<sup>188</sup> Joint Creators Class 1 Opp’n at 10 (quoting 2018 Recommendation at 84–85).

<sup>189</sup> *Id.*

<sup>190</sup> *Id.* at 10–11.

<sup>191</sup> *Id.* at 11 (quoting 37 C.F.R. § 201.40(b)(1). *See* Tr. at 166:15–19 (Apr. 6, 2021) (Williams, Joint Creators) (stating that “it’s good to keep the language [regarding screen capture] in for the reason that just using the word ‘necessary’ doesn’t inform the reader that this is another option that’s out there that should be considered”).

commentary and criticism beyond film studies or other courses requiring close analysis of excerpts, as well as for teaching or scholarship more generally.<sup>192</sup> The Acting Register stated that the language of the exemption “appears broad enough to encompass exempted uses under sections 110(1) and 110(2) (*i.e.*, face-to-face and distance teaching),” and while “specific references to section 110(1) and 110(2) [were] not necessary,” users “should have comfort that the proposed language encompasses uses permitted under sections 110(1) and 110(2), subject to the short portions limitation.”<sup>193</sup> The Acting Register recommended against expansion to cover full-length motion pictures,<sup>194</sup> however, finding that such proposed use could not be found noninfringing under sections 110(1), 110(2), or 112(f), or on fair use grounds.<sup>195</sup>

BYU now proposes several expansions. It maintains that the existing exemption should be adjusted to use the phrase “reasonable and limited portions” instead of “short portions” to track the language of section 110(2).<sup>196</sup> It also seeks to eliminate the “educational purpose” requirement, as well as the phrase “the person engaging in circumvention . . . reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content.”<sup>197</sup> BYU further requests to expand the class of eligible users to include “college and university employees” (*i.e.*, not just college and university faculty), maintaining that faculty do not generally possess the technical knowledge required for circumvention.<sup>198</sup> Most significantly, BYU seeks to expand the permitted uses to “a noninfringing use under 17 U.S.C. §§ 107, 110(1), 110(2), or 112(f),”<sup>199</sup> as opposed to “criticism, comment, teaching, or scholarship.”<sup>200</sup> While BYU’s proposed exemption language is very broad—including “a noninfringing use under [section] 107,”—its written comments and examples of proposed activities are more limited, echoing its 2018 proposal to permit circumvention for the purpose of

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<sup>192</sup> 2018 Recommendation at 86.

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*; see 37 C.F.R. § 201.40(b)(1) (2020).

<sup>195</sup> 2018 Recommendation at 46–53.

<sup>196</sup> BYU Class 1 Initial at 10; see BYU Class 1 Initial at 9–13 (discussing the “short portions” language). Compare 37 C.F.R. § 201.40(b)(1) (containing “short portions” language), with BYU Class 1 Pet. at 2 (omitting that language).

<sup>197</sup> BYU Class 1 Pet. at 2.

<sup>198</sup> *Id.*; Tr. at 221:11–13 (Apr. 6, 2021) (Midgley, BYU).

<sup>199</sup> BYU Class 1 Pet. at 2.

<sup>200</sup> Compare 37 C.F.R. § 201.40(b)(1)(ii)(A), with BYU Class 1 Pet. at 2.



performing full-length motion pictures under section 110(1) and “reasonable and limited portions” thereof under section 110(2).<sup>201</sup>

In addition, BYU seeks clarification about the permitted copying under the existing exemption, stating that “[w]hile the performance [under the TEACH Act] can be of no more than reasonable and limited portions of the work, due to the nature of the technology, the copy must necessarily be of the entire work.”<sup>202</sup>

### *iii. MOOCs*

The 2015 Recommendation described MOOCs as “typically consist[ing] of pre-recorded lectures that may be illustrated, as appropriate, with short clips and still images from audiovisual works.”<sup>203</sup> In this rulemaking, similar to their request in the 2018 proceeding, the Joint Educators request expansion to allow “educators and preparers of online learning materials” to use short portions of motion pictures “for the purpose of criticism, comment, illustration and explanation . . . when use of the film and media excerpts will contribute significantly to learning,” in “offerings for registered learners on online learning platforms,” including those offered by for-profit and unaccredited educational institutions.<sup>204</sup> Joint Educators maintain that in light of the coronavirus pandemic, “it is essential that online learners can access the same quality of education as

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<sup>201</sup> See, e.g., BYU Class 1 Initial at 27 (providing example of twelve full-length films on DVDs or Blu-ray discs not being able to be shown through distance learning, due to classes not being in person and the films not being available for institutional licensing through academic streaming providers); BYU Class 1 Reply at 20–21 (providing examples of a theatre art course, a humanities course, and a film studies course needing to be changed after *Hunt for the Wilderpeople*, *Bread and Tulip*, and *Bicycle Thief*, respectively, were removed from the streaming provider Swank); BYU Class 1 Initial at 4 (The “proposed exemption seeks nothing more than a restoration of educators’ ability to actually use the motion pictures their institutions have acquired.”); see also Tr. at 171:12–20 (Apr. 6, 2021) (Midgley, BYU) (“[The] proposed language removes an express reference to educational purposes because . . . those purposes are inherent given the category of users to which the proposed exemption applies,” and “[i]t’s limited to circumvention undertaken by college and university employees and students by limiting the exemption to that category of users” and “further limited by the specific statutory provisions that are relevant to educational users.”).

<sup>202</sup> BYU Class 1 Initial at 13–14; see BYU Class 1 Initial at 14 (“If the current exemption inadvertently excluded copying full motion pictures under Section 112(f) due to an oversight, it should be corrected in the current rulemaking. On the other hand, if such noninfringing copies were purposely excluded from the exemption, then [BYU] respectfully request[s] that the Register clarify the reason that these noninfringing uses should continue to be excluded.”).

<sup>203</sup> 2015 Recommendation at 31 (quoting 2015 Joint Educators Class 1 Pet. at 4).

<sup>204</sup> Joint Educators Class 1 Pet. at 2; see 2018 Recommendation at 37 (discussing Joint Educators’ desired expansion to “all online courses,” so that “all online learners and teachers have the same access to effective educational methods”).

they would in person—especially during a time where students cannot access traditional in-person instruction.”<sup>205</sup> Their proposed exemption language states that online providers, “to the extent technologically feasible, will work to reasonably prevent unauthorized further dissemination of online learning materials in accessible form to others, including after the registration period ends.”<sup>206</sup> Although Joint Educators’ written comments suggest eliminating the express reference to section 110(2), their representative made clear during the hearing that “all of the existing 110(2) restrictions . . . should still apply,”<sup>207</sup> and that they primarily are seeking expansion to online courses offered by unaccredited and for-profit educational institutions.<sup>208</sup>

## 2. Discussion

### a. AACCS2 and Ultra HD Content

Before considering the specific proposals in this class, the Register first addresses whether the exemption should be expanded to include AACCS2 technology, which is employed to protect ultra-high-definition content distributed on Ultra HD Blu-ray discs.<sup>209</sup> BYU states that its proposed exemption “includes motion pictures . . . on Blu-ray discs protected by the Advanced Access Content System (AACCS), including Ultra HD Blu-ray discs protected by AACCS2 technology.”<sup>210</sup> It argues that AACCS2 technology is “very similar to AACCS LA and that the exemption should include media available in that format as well.”<sup>211</sup> In response, DVD CCA and AACCS LA maintain that the record does not support extending the ability to circumvent access controls to AACCS2,<sup>212</sup> as “AACCS2 is a distinct technology that protects audiovisual content distributed on Ultra HD (UHD) Blu-ray discs, a distinct optical disc format which will not play on legacy

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<sup>205</sup> Joint Educators Class 1 Initial at 3.

<sup>206</sup> Joint Educators Class 1 Pet. at 3; Joint Educators Class 1 Initial at 12.

<sup>207</sup> Tr. at 175:25–176:01 (Apr. 6, 2021) (Decherney, Joint Educators).

<sup>208</sup> See Joint Educators Class 1 Pet. at 2; Joint Educators Class 1 Initial at 3, 19; Tr. at 229:11–18 (Apr. 6, 2021) (Decherney, Joint Educators) (stating that proposed exemption covers “educator[s] and preparers of educational material, . . . being used for educational purposes, short portions, comment and criticism, and then all of the various limitations that 110(2) already puts on other kinds of organizations,” with “[t]he only difference . . . [of] extend[ing] beyond the already granted exemption for accredited and nonprofits”).

<sup>209</sup> DVD CCA & AACCS LA Class 1 Opp’n at ii, 1 (discussing AACCS2 technology).

<sup>210</sup> BYU Class 1 Initial at 4.

<sup>211</sup> Tr. at 157:25–158:02 (Apr. 6, 2021) (Midgley, BYU).

<sup>212</sup> DVD CCA & AACCS LA Class 1 Opp’n at 1–2.

(HD) Blu-ray players.”<sup>213</sup> BYU did not provide evidence to the contrary.<sup>214</sup> Although OTW mentions Ultra HD in passing in its reply comments, it does not directly advocate for its inclusion in the exemption.<sup>215</sup>

As in 2018, the Register finds the record insufficient to support extending the proposed class to AACS2.<sup>216</sup> In past rulemakings, “exemptions to permit circumvention of new technology have been adopted only upon showings of a need to access works protected by that specific technology.”<sup>217</sup> Here, the record does not support a finding that AACS2 technology is adversely affecting noninfringing uses or that it is sufficiently similar to AACS1 to be covered by the current exemption.<sup>218</sup> Proposed Class 1 thus addresses only TPMs employed on DVDs and Blu-ray discs, and by various online streaming services, to protect motion pictures.

### **b. Proposed Expansion for Noncommercial Videos**

OTW proposes adjusting the current exemption for noncommercial videos “based on the 2010 Recommendation, as amended by later clarification in the 2012 Recommendation about the meaning of ‘noncommercial’ and the 2015 Recommendation’s reformulation of the exemption to encompass non-DVD sources in recognition of the rise of Blu-ray and streaming as increasingly the only feasible means of access to many works.”<sup>219</sup> OTW maintains that the language of the current exemption is “overly complex” and serves as a “trap[] for the unwary.”<sup>220</sup> In particular, OTW wishes to change what it views as a “division of exemptions into screencapture/not screencapture.”<sup>221</sup>

The Register concludes that the existing exemption already covers OTW’s proposed use, so no changes are warranted at this time. Specifically, OTW’s representative confirmed during the hearing that the “existing exemption is enough in the sense that it provides

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<sup>213</sup> *Id.* at ii; *see also* Tr. at 158:18–22 (Apr. 6, 2021) (Ayers, DVD CCA & AACS LA).

<sup>214</sup> *See* Tr. at 158:10–14 (Apr. 6, 2021) (Midgley, BYU).

<sup>215</sup> *See* OTW Class 1 Reply at 2.

<sup>216</sup> *See* 2018 Recommendation at 41.

<sup>217</sup> *Id.* at 40; *see also* 2012 Recommendation at 135 (finding “the record [did] not reflect a substantial adverse impact due to the inability to use motion picture materials contained on Blu-ray discs”).

<sup>218</sup> Similarly, the Register declines to adjust the language of the exemption to “shift along” as “technology shifts.” *See* Tr. at 245:19–21 (Apr. 6, 2021) (Rosenblatt, OTW) (“[As] technology shifts, we would want this exemption to shift along with it to the extent that any shift is necessary.”).

<sup>219</sup> OTW Class 1 Initial at 2.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.* at 3.

an exemption for what vidders do.”<sup>222</sup> She expressed concern, however, that the existing exemption “requires vidders to make an evaluation of the fitness of one potential circumvention technique before engaging in the circumvention technique that makes more sense.”<sup>223</sup> As discussed, OTW objects to the phrase “the person engaging in circumvention . . . reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content.”<sup>224</sup> In its view, that phrase could be read to suggest that a user must actually use screen-capture technology as part of its assessment of the suitability of non-circumventing alternatives.<sup>225</sup>

The Register emphasizes that the existing exemption does not require creators of noncommercial videos to attempt to *use* screen capture technology before engaging in circumvention.<sup>226</sup> Rather, it requires only that users *evaluate* whether screen capture technology would produce video clips of sufficient quality; if the user reasonably believes it would not, circumventing is permissible.<sup>227</sup> It appears from the record that many vidders in fact already make such an evaluation. According to proponents, some vidders use screen capture when appropriate,<sup>228</sup> while others may reasonably believe that such technology is inadequate.<sup>229</sup> Such evaluations are consistent with the intent

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<sup>222</sup> Tr. at 252:18–20 (Apr. 6, 2021) (Rosenblatt, OTW). “Vidders” have been described as “a sub-community of remixers who create fan videos that remix footage from television shows or films into montages set to new soundtracks, at times altering the footage to create various effects.” 2015 Recommendation at 42 (citing 2015 EFF & OTW Class 7 Initial at 3–4).

<sup>223</sup> Tr. at 252:18–24 (Apr. 6, 2021) (Rosenblatt, OTW).

<sup>224</sup> 37 C.F.R. § 201.40(b)(1).

<sup>225</sup> Tr. at 256:10–13 (Apr. 6, 2021) (Turk, OTW); *see also* Tr. at 258:09–12 (Apr. 6, 2021) (Rosenblatt, OTW) (asking for clarification that attempting screen capture is not necessary before circumventing).

<sup>226</sup> *See* Joint Creators Class 1 Opp’n at 11 (“[T]he existing exemption does not *require* the use of screen capture.”).

<sup>227</sup> *See* 2018 Recommendation at 84–85 (“[A] requirement that users consider whether it is really necessary to engage in circumvention before doing so is consistent with the aims of the rulemaking.”); 2012 Recommendation at 140 (“Creators and educators should consider whether there is an adequate alternative before engaging in circumvention under a recommended exemption.”).

<sup>228</sup> Tr. at 161:19–20 (Apr. 6, 2021) (Rosenblatt, OTW); *see also* Francesca Coppa Class 1 Reply at 2 (“Screen capture has also improved significantly and may be used when DVDs do not (or do not yet) exist.”).

<sup>229</sup> OTW Class 1 Reply at 2–3; *see* Francesca Coppa Class 1 Reply at 2; Tr. at 247:19–248:13 (Apr. 6, 2021) (Coppa, OTW) (explaining why vidders would prefer to circumvent DVD TPMs rather than use screen-capture technology); Tr. at 168:19–169:25 (Apr. 6, 2021) (Coppa, OTW).

and language of the current exemption. The Office is hopeful that this clarification provides users with useful guidance going forward.

The Register also concludes that OTW's proposal to remove the screen-capture provision to address the possibility that use of this technology could be deemed circumventing is unnecessary.<sup>230</sup> Indeed, OTW's representative expressed uncertainty during the hearing whether screen-capture technologies circumvent or not.<sup>231</sup> The Register thus recommends retaining a screen-capture provision to address the possibility that use of this technology could be deemed to involve circumvention. Inclusion of this provision "can give a user comfort that if he or she uses technology that was marketed as a non-circumventing screen-capture tool, then the user can use the technology without fear of violating section 1201 regardless of its actual technological operation."<sup>232</sup>

Finally, the Register concludes that OTW's other proposed changes are not necessary to address its concerns. For example, although OTW's proposed exemption language eliminates references to media on which TPMs apply under the existing exemption (*i.e.*, DVDs, Blu-ray discs, and digital transmissions), OTW's representative confirmed during the hearing that OTW is "not wedded to removing any reference to medium" in the exemption.<sup>233</sup> Similarly, although OTW's proposed language removes the "lawfully made and acquired" limitation,<sup>234</sup> OTW's representative clarified during the hearing that "[t]he current language speaks about lawfully obtained and makes no reference to ownership, so we actually don't think that any change is necessary there."<sup>235</sup>

### c. Works Protected by Copyright

With respect to the requirement that the relevant TPMs control access to copyrightable works, this class again involves the use of motion pictures for purposes of criticism, comment, or educational uses. Therefore, like the 2018 rulemaking, the Register finds that at least some works included in the proposed expanded class are protected by copyright.

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<sup>230</sup> See OTW Class 1 Initial at 2 (eliminating relevant screen-capture provision in proposed language).

<sup>231</sup> Tr. at 165:05–19 (Apr. 6, 2021) (Rosenblatt, OTW) ("I think it comes down principally to the fact that no one can say whether screen capture is or is not circumvention, and so there's, as it stands, an ambiguity in that."); see 2018 Recommendation at 83–85 (reaching similar conclusion).

<sup>232</sup> 2018 Recommendation at 85.

<sup>233</sup> Tr. at 240:11–14 (Apr. 6, 2021) (Rosenblatt, OTW).

<sup>234</sup> OTW Class 1 Initial at 2.

<sup>235</sup> Tr. at 245:21–24 (Apr. 6, 2021) (Rosenblatt, OTW); see Tr. at 241:18–21 (Apr. 6, 2021) (Rosenblatt, OTW) ("Lawfully acquired is . . . a reasonable limitation as long as it encompasses all different sorts of acquisition, including borrowing and ownership.").

#### d. Asserted Noninfringing Uses

Proponents contend that the proposed uses fall within the favored purposes of criticism and comment referenced in the preamble of section 107 and are therefore likely to be fair.<sup>236</sup> While otherwise analyzing each set of proposed uses separately below, the Register notes that the second and third factors governing the fair use analysis under section 107 remain relatively constant across the proposed uses. Under factor two—the nature of the copyrighted work—it is well established that motion pictures are creative and thus at the core of copyright’s protective purposes.<sup>237</sup> But in the case of uses involving a favored purpose under the law, the second factor may be of relatively limited importance to the overall analysis.<sup>238</sup> As in 2012, 2015, and 2018, the Register concludes that the second fair use factor slightly disfavors the proposed expansion, but is not especially relevant to most of the proposed uses.<sup>239</sup>

Under the third factor—the amount and substantiality of the portion used in relation to the copyrighted work as a whole—the Register concludes that with the exception of BYU’s proposal, the limitation to circumvention for uses of “short portions” of motion pictures is integral to the various proposals.<sup>240</sup> While recognizing that the extent of permissible copying may vary, for purposes of this class, the “short portions” limitation provides useful guidance as to what is generally likely to be a fair use without imposing a wholly inflexible rule as to length.<sup>241</sup>

##### i. Universities and K-12 Educational Institutions

BYU contends that because its proposed exemption “applies only when circumvention is undertaken ‘for a *noninfringing use* under 17 U.S.C. §§ 107, 110(1), 110(2), or 112(f),” “the proposed uses must, by definition, be noninfringing” and that “[i]f circumvention is undertaken for any use deemed to be infringing, the proposed exemption will not apply, and the user will be liable for possibly violating Section 1201, in addition to any copyright infringement liability.”<sup>242</sup> As in the 2018 rulemaking, BYU maintains that its

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<sup>236</sup> See 17 U.S.C. § 107.

<sup>237</sup> See 2018 Recommendation at 45; 2015 Recommendation at 70; 2012 Recommendation at 128.

<sup>238</sup> See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 586 (1994).

<sup>239</sup> See 2018 Recommendation at 45; 2015 Recommendation at 70; 2012 Recommendation at 128.

<sup>240</sup> See 2018 Recommendation at 46; 2015 Recommendation at 70; 2012 Recommendation at 128.

<sup>241</sup> See 2018 Recommendation at 46.

<sup>242</sup> BYU Class 1 Initial at 7. A mere requirement that a use be “noninfringing” or “fair” does not satisfy Congress’s mandate to craft “narrow and focused” exemptions. 2015 Recommendation at 100; see Commerce Comm. Report at 38. For this reason, the Register has previously rejected broad proposed categories, such as “fair use works” or “educational fair use works,” as beyond

proposed activities—performances of full-length motion pictures under section 110(1) and “reasonable and limited portions” thereof under section 110(2) for nonprofit educational purposes—are noninfringing because sections 110(1) and 110(2) allow for such public performances by nonprofit educational institutions.<sup>243</sup> In the 2018 rulemaking, BYU acknowledged, however, that digital copies would need to be made and stored to facilitate the proposed uses.<sup>244</sup> BYU echoes its 2018 arguments that any server copies or other reproductions made would be covered either under section 112(f)’s exception for nonprofit educational institutions to make copies when making transmissions authorized under section 110(2), or under section 107 as fair use.<sup>245</sup>

1) *Sections 110(1), 110(2), and 112(f)*

Section 110(1) allows for the public performance and display of copyrighted works for educational purposes, subject to certain conditions: the performance must be made “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,” and not knowingly using unlawfully made copies.<sup>246</sup> Because section 110(1) does not restrict the amount of the motion picture that can be used, either short clips or an entire motion picture may be shown within a classroom, subject to the other conditions.<sup>247</sup>

Section 110(2), also referred to as the TEACH Act, provides an exception for certain uses of copyrighted works by nonprofit educators in distance education.<sup>248</sup> Section 110(2) has a number of requirements. First, the transmitter must be “a governmental body or an accredited nonprofit educational institution.”<sup>249</sup> Second, the use must be made at the direction of an instructor teaching a class session as “a regular part of the systematic

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the scope of the statute. 2006 Recommendation at 17–19. An exemption should provide reasonable guidance to the public in terms of what uses are permitted, while at the same time mitigating undue consequences for copyright owners. 2006 Recommendation at 19 (noting that “if a class is too broad” it could “lead to undue harm to copyright owners,” and therefore it would be “difficult to justify the exemption at all”).

<sup>243</sup> BYU Class 1 Initial at 10, 18.

<sup>244</sup> 2018 Recommendation at 46 n.251.

<sup>245</sup> See BYU Class 1 Initial at 13–16.

<sup>246</sup> 17 U.S.C. § 110(1) (“The performance or display of certain works in certain educational settings does not constitute infringement “unless, in the case of a motion picture . . . , the performance . . . is given by means of a copy that was not lawfully made under this title, and that the person responsible for the performance knew or had reason to believe was not lawfully made.”).

<sup>247</sup> See *id.*

<sup>248</sup> *Id.* § 110(2); see also U.S. COPYRIGHT OFFICE, REPORT ON COPYRIGHT AND DIGITAL DISTANCE EDUCATION (1999), [https://www.copyright.gov/reports/de\\_rprt.pdf](https://www.copyright.gov/reports/de_rprt.pdf).

<sup>249</sup> 17 U.S.C. § 110(2).

mediated instructional activities” —and for motion pictures, only in “reasonable and limited portions.”<sup>250</sup> Third, as with 110(1), any copies involved in transmitting the performance must be lawfully made and acquired.<sup>251</sup> Fourth, the reception of the transmission must be limited, to the extent technologically feasible, to students officially enrolled in the course.<sup>252</sup> Fifth, the transmitting educational institution must institute policies and provide notice regarding copyright protection to students, faculty, and relevant staff members.<sup>253</sup> Finally, the transmitting body must apply technological measures that limit the retention and unauthorized further dissemination of the work in accessible form.<sup>254</sup>

Section 112(f), which authorizes copies created in making transmissions under section 110(2), states:

[I]t is not an infringement of copyright for a governmental body or other nonprofit educational institution entitled under section 110(2) to transmit a performance . . . to make copies . . . of a work that is in digital form . . . to be used for making transmissions authorized under section 110(2), if—

(A) such copies . . . are retained and used solely by the body or institution that made them, and no further copies . . . are reproduced from them, except as authorized under section 110(2); and

(B) such copies . . . are used solely for transmissions authorized under section 110(2).<sup>255</sup>

On its face, section 112(f) permits copying only for transmissions authorized under section 110(2); it does not permit nonprofit educational institutions to make copies to facilitate performances under section 110(1) (*e.g.*, performances of full-length motion pictures).<sup>256</sup>

In the 2018 rulemaking, the Acting Register found that copying for purposes of showing a full-length motion picture in face-to-face teaching was unlikely to be noninfringing

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<sup>250</sup> *Id.*

<sup>251</sup> *Id.*

<sup>252</sup> *Id.* § 110(2)(C)(i).

<sup>253</sup> *Id.* § 110(2)(D)(i).

<sup>254</sup> *Id.* § 110(2)(D)(ii)(I).

<sup>255</sup> *Id.* § 112(f)(1)(A)–(B).

<sup>256</sup> *Id.* § 112(f)(1)(B); *see* 2018 Recommendation at 49; *see also* H.R. REP. NO. 107-687, at 3 (2002) (“The [TEACH Act] also amends section 112 . . . to permit storage of copyrighted material on servers in order to permit the performances and displays authorized by section 110(2) to be made asynchronously in distance education courses.”).



under sections 110 and 112(f).<sup>257</sup> Specifically, she concluded that BYU’s “proposed exemption implicate[d] the rights of reproduction and distribution rather than public performance or display,” as “circumvention is required to make copies, not to show a film in a classroom from a lawfully acquired disc.”<sup>258</sup> The Acting Register determined that “[s]ection 110 cannot, by itself, establish” that circumventing TPMs preventing the copying and storing of films on a server, so users can show the films in multiple classrooms without purchasing additional copies or equipment, “is likely to be noninfringing, since any performances of motion pictures under sections 110(1) and 110(2) must originate from lawfully acquired copies.”<sup>259</sup> Because “section 112(f) does not permit nonprofit educational institutions to make copies to facilitate performances under section 110(1),” the Acting Register found BYU’s reliance on section 112(f) “unhelpful to support its request to make copies to facilitate performances” of full-length motion pictures in face-to-face teaching under section 110(1).<sup>260</sup> While the Acting Register found that “[s]ection 112(f) does support a conclusion that making and temporarily storing digital copies of motion pictures to perform ‘reasonable and limited portions’ in distance teaching would be noninfringing, assuming the other requirements of section 110(2) are met,” the then-existing exemption for educational uses already appeared to cover this proposed use.<sup>261</sup>

In the current rulemaking, BYU has not presented any evidence of a change in law to support a different conclusion.<sup>262</sup> Therefore, the Register adheres to the Office’s prior conclusion that section 112(f) does not support allowing copies to be made for the purpose of performing full-length motion pictures. Nor has BYU provided any examples of proposed uses of motion picture clips that would not be covered by the phrase “short portions” in the existing exemption so as to warrant changing that language to “reasonable and limited portions.”<sup>263</sup>

## 2) *Fair Use*

BYU contends that “space-shifting” — copying works from one medium to another to facilitate use—for educational purposes is likely a fair use.<sup>264</sup> BYU cites to *Authors Guild*,

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<sup>257</sup> 2018 Recommendation at 48–50; *see also* NPRM at 65,303.

<sup>258</sup> 2018 Recommendation at 48.

<sup>259</sup> *Id.* at 49 (citing 17 U.S.C. § 110(1)–(2)).

<sup>260</sup> *Id.* at 49–50.

<sup>261</sup> *Id.* at 50.

<sup>262</sup> *See* Tr. at 194:07–12 (Apr. 6, 2021) (Wise, BYU) (“It’s not so much in the law . . . as it is in the environment we’re in.”).

<sup>263</sup> *See* BYU Class 1 Initial at 10.

<sup>264</sup> *Id.* at 14–21.

*Inc. v. HathiTrust*,<sup>265</sup> *Authors Guild v. Google, Inc.*,<sup>266</sup> *Fox News Network, LLC v. TVEyes, Inc.*,<sup>267</sup> and *Fox Broadcasting Co. v. Dish Network, LLC*,<sup>268</sup> cases that the Office has already considered and concluded do not support a finding of fair use for BYU's proposed space-shifting for educational purposes.

In the 2018 rulemaking, the Acting Register concluded that space-shifting for purposes of performing full-length motion pictures in face-to-face teaching was not likely to be deemed fair use.<sup>269</sup> While the Acting Register found that the then-existing record demonstrated that many of the educational uses of short motion picture clips proposed by BYU were likely to be fair,<sup>270</sup> "[t]he same logic [did] not extend . . . to the copying of full motion pictures for [full-length] performances in face-to-face teaching."<sup>271</sup> The Acting Register considered *Authors Guild, Inc. v. HathiTrust* and *Authors Guild v. Google, Inc.* in reaching that conclusion.<sup>272</sup> Specifically, the Acting Register found that those "opinions . . . distinguished the proposed uses . . . from performing the works themselves, and carefully considered the risk that those circumscribed uses might act as market substitutes."<sup>273</sup> By contrast, BYU's proposed creation of "full length copies of motion pictures to facilitate performances under section 110(1) [were] supposed to substitute for the original works in disc form."<sup>274</sup> In a separate class specifically seeking

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<sup>265</sup> 755 F.3d 87 (2d Cir. 2014).

<sup>266</sup> 804 F.3d 202 (2d Cir. 2015) ("*Google Books*").

<sup>267</sup> 883 F.3d 169 (2d Cir. 2018).

<sup>268</sup> 160 F. Supp. 3d 1139 (C.D. Cal. 2015).

<sup>269</sup> 2018 Recommendation at 52–53. Although BYU did not label its proposed use as "space-shifting" in 2018, its proposed use required the making and storing of digital copies to facilitate performances of full-length motion pictures under section 110(1) and short portions thereof under section 110(2) for nonprofit educational purposes. See *id.* at 46; BYU Class 1 Initial at 14 (discussing the Acting Register's conclusions regarding space-shifting in the 2018 Recommendation).

<sup>270</sup> 2018 Recommendation at 51.

<sup>271</sup> *Id.* at 52.

<sup>272</sup> *Id.*

<sup>273</sup> *Id.* (citing *Google Books*, 804 F.3d at 224–25 (finding that even though the search function allowed the user to view "snippets" of the book in which the search term appears in the book, it did not effectively substitute for the original works because viewers were seeing such a small percentage of the book); *HathiTrust*, 755 F.3d at 101 (finding that a full-text search function did not serve as a substitute for the original books because the search results did not display any text from the underlying works)).

<sup>274</sup> *Id.*; see also *Google Books*, 804 F.3d at 224–25 (finding that even though the search function allowed the user to view "snippets" of the book in which the search term appears in the book, it

circumvention for purposes of space-shifting, the Acting Register found “no basis to depart from the fair use analysis and ultimate conclusion reached in the 2015 proceeding, where ‘the Register [was] unable to determine’” that circumvention of access controls on lawfully made and acquired literary works distributed electronically for the purpose of noncommercial space-shifting or format-shifting was noninfringing.<sup>275</sup>

In the 2015 rulemaking, discussing the district court decision in *TVEyes*, the Register found that the case “confirms that courts do not accept the proposition that space-shifting as a general matter constitutes a fair use.”<sup>276</sup> The Register stated that “the *TVEyes* court rejected defendant TVEyes’ argument that offering a downloading service was ‘absolutely critical’ to allow subscribers to view the monitored clips offline,” and that “the court cited a long line of precedent, including cases holding that the photocopying of physical journals and a digital service designed to allow subscribers to access music purchased on CDs via the internet, were not fair uses.”<sup>277</sup> Regarding *Dish*, the Register determined that the “court engaged in only minimal analysis of the fair use issue, reaching its conclusion in a single paragraph without discussing the statutory fair use factors.”<sup>278</sup> Moreover, the use in *Dish*—a “Hopper” service that allowed users to record a television program for viewing at a more convenient time—was analogous to *time*-shifting as a fair use, not space-shifting as proposed by BYU.<sup>279</sup>

The Register also declines BYU’s suggestion that a different conclusion should result in light of the COVID-19 pandemic’s effect on education.<sup>280</sup> While there is undoubtedly a strong public interest in ensuring continued access to educational materials during the pandemic, “[i]f exigent circumstances are factored into a fair use analysis, it does not necessarily follow that they would provide an unconditional expansion of the scope of

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did not effectively substitute for the original works because viewers were seeing such a small percentage of the book); *HathiTrust*, 755 F.3d at 101 (finding that a full-text search function did not serve as a substitute for the original books because the search results did not display any text from the underlying works).

<sup>275</sup> 2018 Recommendation at 121–22 (alteration in original) (citing 2015 Recommendation at 122–124; 2012 Recommendation at 162–65).

<sup>276</sup> 2015 Recommendation at 122; see *Fox News Network, LLC v. TVEyes, Inc.*, 124 F. Supp. 3d 325, 336–37 (S.D.N.Y. 2015) (holding that allowing viewers to download clips for offline viewing was not fair use), *aff’d in part, rev’d in part*, 883 F.3d 169 (2d Cir. 2018).

<sup>277</sup> 2015 Recommendation at 122. In 2018, the Second Circuit held that TVEyes’ service was not fair use. *TVEyes*, 883 F.3d at 180–81. The court of appeals’ decision “subsume[d] and obviate[d] consideration of” the specific functions enjoined by the district court.” *Id.* at 176.

<sup>278</sup> 2015 Recommendation at 122 (citing *Dish*, 160 F. Supp. 3d at 1178–79).

<sup>279</sup> See *Dish*, 160 F. Supp. 3d at 1153–56, 1161–62 (describing the DISH Hopper and Sling services and finding that they do not lead to an actual public performance of the works).

<sup>280</sup> See *BYU Class 1 Initial* at 25–27 (discussing adverse impact).

fair use.”<sup>281</sup> The copyright owners’ interests must also be considered in the balance. In this case, the Register is not convinced that the benefits of full-length space-shifting outweigh the considerations of potential market harm.

The Register does find, however, that expansion of the existing exemption from “college and university faculty” to “college and university employees” is warranted, provided circumvention is at the direction of the faculty member for the purpose of teaching a course.<sup>282</sup> Indeed, DVD CCA and AACSLA acknowledge that “it’s long been our position that members of the community[,] . . . be they staff or faculty[,] could engage in acts of circumvention, and there was never an expectation that the professors themselves had to do it.”<sup>283</sup>

*ii. MOOCs*

Joint Educators seek an expansion to allow “educators and preparers of online learning materials” to use short portions of motion pictures “for the purpose of criticism, comment, illustration and explanation . . . when use of the film and media excerpts will contribute significantly to learning,” in “offerings for registered learners on online learning platforms,” including those offered by for-profit and unaccredited educational institutions.<sup>284</sup> Joint Educators also propose expansion from use in “film studies or other courses requiring close analysis of film and media excerpts” to online offerings more generally.<sup>285</sup>

The 2018 rulemaking identified fair use as the noninfringing basis for the current exempted use for MOOCs, and the proposed expansion to “online learning platforms” is evaluated on the same grounds.<sup>286</sup> First, however, the Register must address how the terms “online learning platforms” and “online learning materials” are to be defined. Joint Educators’ representative stated that “online learning platforms” “are created by

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<sup>281</sup> Letter from Maria Strong, Acting Register of Copyrights and Dir., U.S. Copyright Office, to Senator Tom Udall, at 21 (May 15, 2020), available at <https://www.copyright.gov/laws/hearings/Sen-Udall-Response-National-Emergency-Library.pdf>. See Joint Creators Class 1 Post-Hearing Resp. at 3 (May 14, 2021) (asserting that any special dispensation for the pandemic “would be ill advised”).

<sup>282</sup> See 2018 Recommendation at 50–51 (noting possible uses by teachers and students as evidence “a significant number of the proposed uses are likely to be fair”). When employees circumvent at the direction of a faculty member for the purpose of teaching a course, the same conclusion applies.

<sup>283</sup> Tr. at 221:21–25 (Apr. 6, 2021) (Taylor, DVD CCA & AACSLA).

<sup>284</sup> Joint Educators Class 1 Pet. at 2.

<sup>285</sup> *Id.*

<sup>286</sup> See 2018 Recommendation at 53. See generally Joint Educators Class 1 Initial at 13–14.

educators . . . on registered platforms” and “would be for educational purposes,”<sup>287</sup> but acknowledged that the line between academic institutions and businesses wanting to offer online educational courses “can be blurry.”<sup>288</sup> According to Joint Educators, “online learning materials” would include “video material that includes short portions for comment and criticism that’s being used by educators, prepared by educators and support staff.”<sup>289</sup>

In first recommending the existing exemption in 2015, the Register acknowledged the growth and importance of online education.<sup>290</sup> Nevertheless, she credited opponents’ concern that an “‘unbounded exemption’ where ‘[a]nybody can declare that they’re teaching a MOOC’ and ‘anyone can be a student’” would be “anathema to the exemption process as envisioned by Congress.”<sup>291</sup> As in 2015 and 2018, Joint Educators’ current “broadly framed proposal would seemingly encompass any online video that could be characterized as an educational experience.”<sup>292</sup> Accordingly, the record does not justify expansion to “online learning materials” offered by “online learning platforms.”

With respect to whether the exemption should be expanded to include MOOCs offered by for-profit and unaccredited educational institutions, Joint Educators contend that their proposed uses are fair.<sup>293</sup> They provide several examples: clips from the movie *Hidden Figures* and television show *The Big Bang Theory* to inspire girls to seek careers in science, technology, engineering, and math (STEM) subjects;<sup>294</sup> clips from television shows such as *Doc McStuffins*, *Girl Meets World*, *The Fosters*, and *Blackish* to show aspirational role models for underrepresented students;<sup>295</sup> clips from the television show *Mr. Robot* to illustrate unethical uses of programming;<sup>296</sup> clips from the series *Game of Thrones* to demonstrate “the isolation and pain sometimes experienced by those with

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<sup>287</sup> Tr. at 228:14–16 (Apr. 6, 2021) (Decherney, Joint Educators).

<sup>288</sup> Tr. at 234:07–09 (Apr. 6, 2021) (Decherney, Joint Educators).

<sup>289</sup> Tr. at 232:18–21 (Apr. 6, 2021) (Decherney, Joint Educators).

<sup>290</sup> 2015 Recommendation at 72.

<sup>291</sup> 2015 Recommendation at 72 (alteration in original) (quoting Tr. at 119:18–121:16 (May 27, 2015) (Turnbull, DVD CCA & AACCS LA)) (citing Tr. at 129:03–130:24 (May 27, 2015) (Williams, Joint Creators)); see 2018 Recommendation at 54.

<sup>292</sup> 2018 Recommendation at 54 (quoting 2015 Recommendation at 102).

<sup>293</sup> Joint Educators Class 1 Initial at 15–17; Joint Educators Class 1 Reply at 10–12.

<sup>294</sup> Joint Educators Class 1 Initial at 6–7; Joint Educators Class 1 Reply at 6.

<sup>295</sup> Joint Educators Class 1 Initial at 17.

<sup>296</sup> *Id.* at 10.

dwarfism;<sup>297</sup> clips from the movie *The King's Speech* showing a character overcoming a speech impediment to encourage confidence in public speaking;<sup>298</sup> and clips from the series *Stranger Things* to illustrate aspects of the medical condition cleidocranial dysplasia.<sup>299</sup> In addition, Joint Educators propose using clips of well-known musicians in music instructional videos by companies such as Musora Media,<sup>300</sup> as “[l]earners need short clips of musical performances from movies and TV shows incorporated in their online music learning to maximize their understanding of often nuanced techniques through an ability to scrutinize and watch clips of the musical heroes that inspire learners to want to play.”<sup>301</sup> Most of Joint Educators’ examples appear to relate to unaccredited for-profit companies Osmosis.org, LinkedIn Learning, and Musora Media.<sup>302</sup> Joint Educators also point to proposed uses by CSforALL, an unaccredited nonprofit organization that “serves as a central resource for over 1100 member organizations” and works with, among others, accredited public or private schools and districts and nonprofit organizations.<sup>303</sup>

Regarding the first fair use factor, Joint Educators maintain that it favors fair use because the proposed use is for educational purposes and is “highly transformative.”<sup>304</sup> They argue that “[r]epurposing short specific scenes from movies and TV shows into an educational tool that helps learners understand complex concepts is highly transformative and does not supplant the use of the original work.”<sup>305</sup> Opponents respond that several of the proffered examples are not particularly transformative, as the works are being used for precisely the purpose for which they were made. Specifically, regarding the *Hidden Figures* and *Mr. Robot* examples, DVD CCA and AACCS LA state that these are uses that “simply supplant the use of the original work.”<sup>306</sup> Opponents

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<sup>297</sup> *Id.* at 7.

<sup>298</sup> Joint Educators Class 1 Reply at 6–7.

<sup>299</sup> Joint Educators Class 1 Initial at 8.

<sup>300</sup> *Id.* at 9; Joint Educators Class 1 Reply at 7.

<sup>301</sup> Joint Educators Class 1 Reply at 7.

<sup>302</sup> Joint Educators Class 1 Post-Hearing Resp. at 2 (May 14, 2021).

<sup>303</sup> *Id.*

<sup>304</sup> Joint Educators Class 1 Initial at 15–16.

<sup>305</sup> Joint Educators Class 1 Reply at 11 (citing *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 580 (1994) (stating that the central purpose of the first factor in a fair use enquiry is to see whether the new work merely “supersede[s] the objects” of the original creation, or instead adds something new, with a further purpose of different character); *Google Books*, 804 F.3d at 214 (“[A] transformative use is one that communicates something new and different from the original or expands its utility, thus serving copyright’s overall objective of contributing to public knowledge.”)).

<sup>306</sup> DVD CCA & AACCS LA Class 1 Opp’n at 37.

also stress that most of the entities seeking to use the proposed exemption are for-profit businesses that intend to “use the works for commercial purposes.”<sup>307</sup> In response, Joint Educators assert that a commercial purpose does not disqualify a use from being considered fair.<sup>308</sup>

On the record presented, it is unclear to what extent the commercial aspects of the proposed uses predominate over their educational purpose. Most of Joint Educators’ examples appear to relate to for-profit companies,<sup>309</sup> and Joint Educators acknowledge that the line between academic institutions and businesses wanting to offer online educational courses “can be blurry.”<sup>310</sup> Accordingly, although a commercial purpose is not disqualifying, the for-profit nature of most of the examples indicates that the first fair use factor weighs at least slightly against a finding of fair use.

Regarding the fourth fair use factor, Joint Educators contend that “[t]he proposed use under this exemption is identical to the uses found in the K-12, university, and MOOC educational exemptions,” and that because the proposed use “would limit use to *short* portions of audiovisual works for educational purposes and the use is highly transformative, it is very unlikely that employing a short clip in an online course would be a sufficient substitute to watching a full-length movie for entertainment.”<sup>311</sup> By contrast, opponents Joint Creators contend that the proposed uses “would pose a significant threat to the value of copyrighted works”<sup>312</sup> and point to the availability of licensed clips as a market threatened by the proposed use.<sup>313</sup>

On balance, the Register concludes that the commercial nature of the companies desiring to make proposed uses of motion picture excerpts tips the fourth factor against fair use. Overall, given the substantial prevalence of commercial uses in the proposal, and the difficulty of separating truly educational uses from ordinary commercial uses, the Register is unable to conclude that the proposed uses are likely to be noninfringing, at least to the extent they pertain to for-profit entities.

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<sup>307</sup> *Id.*

<sup>308</sup> Joint Educators Class 1 Initial at 16.

<sup>309</sup> See Tr. at 233:07–19 (Apr. 6, 2021) (Decherney, Joint Educators) (“[I]t could be a corporate—a business, a for-profit business that creates MOOCs.”).

<sup>310</sup> Tr. at 234:07–09 (Apr. 6, 2021) (Decherney, Joint Educators); see Tr. at 234:15–16 (Apr. 6, 2021) (Decherney, Joint Educators) (stating that “Google teaches MOOCs . . . on Coursera”).

<sup>311</sup> Joint Educators Class 1 Initial at 17.

<sup>312</sup> Joint Creators Class 1 Opp’n at 9.

<sup>313</sup> *Id.*; see DVD CCA & AACLS LA Class 1 Opp’n at 37 (“This use threatens the existing clip licensing business.”).

As to non-accredited, nonprofit institutions, proponents provided only the example of CSforALL, and the nature of its activities—“serv[ing] as a central resource for over 1100 member organizations” for students “both in and out of school,” “connect[ing] providers, schools and districts, funders, and researchers”<sup>314</sup>—is not entirely clear. Moreover, although the fair use inquiry is not limited by the scope of specific statutory exceptions, the Register continues to believe that section 110(2) “provides useful and important guidance as to Congress’ intentions regarding the need for and nature of excepted uses to permit certain performances and displays of copyrighted works for distance learning.”<sup>315</sup> That provision is expressly limited to *accredited* nonprofit educational institutions.<sup>316</sup> Thus, while not foreclosing the possibility that a different conclusion might be warranted upon a fuller record, the Register cannot conclude that the current evidence regarding non-accredited institutions establishes that their uses are likely noninfringing.

Finally, considering whether the exemption should be expanded to *employees* of the eligible educational institutions offering MOOCs under the exemption (*i.e.*, not just faculty), Joint Educators contend that “there hasn’t been opposition to having assistants helping the educators make the clip,” and that is “the same kind of distinction [they are] trying to make.”<sup>317</sup> The Register agrees. For the same reasons discussed above regarding college and university employees, the Register is persuaded that employees of eligible educational institutions offering MOOCs, in addition to their faculty, should be covered by the exemption when circumventing under the direction of faculty members for the purpose of offering a course.

#### **e. Causation**

The Register finds that BYU and Joint Educators have met their burden of showing that the statutory prohibition on circumvention of access controls limits their ability to engage in the proposed uses. But for the prohibition, users likely could gain lawful access to the copyrighted motion pictures for those purposes.

#### **f. Asserted Adverse Effects**

##### *i. Universities and K-12 Educational Institutions*

BYU argues that the statutory factors set forth in section 1201(a)(1) favor expanding the exemption to permit copying of motion pictures to a server for performances under sections 110(1) and 110(2). As with its fair use arguments, BYU focuses mostly on

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<sup>314</sup> Joint Educators Class 1 Post-Hearing Resp. at 2 (May 14, 2021).

<sup>315</sup> 2015 Recommendation at 74.

<sup>316</sup> 17 U.S.C. 110(2).

<sup>317</sup> Tr. at 231:19-23 (Apr. 6, 2021) (Decherney, Joint Educators).



proposed uses that would allow for the full-length performances of motion pictures for educational purposes.

With respect to first statutory factor, the availability for use of copyrighted works, BYU states that “although motion pictures are widely available, access to the motion pictures is almost always controlled by restrictive TPMs put in place by rightsholders,” and that “[t]he proliferation of TPMs on motion pictures has caused the exact kind of adverse effects that Congress contemplated when initiating this rulemaking process.”<sup>318</sup>

As in 2018, the Register finds that the first factor does not support extending the exemption to the performance of full-length motion pictures.<sup>319</sup> Such use “could ultimately decrease the availability of motion pictures by undermining the value of the market for works in those formats,” and “the 1201 exemption process is meant to ensure that users have access to copyrighted works; it is not meant to guarantee consumers the ability to access content through their preferred method or format.”<sup>320</sup>

Regarding the second and third statutory factors—the availability for use of works for educational purposes, and the impact on teaching, scholarship, or research—BYU states that “the current exemption for educational purposes is too restrictive and narrow, effectively making motion pictures unavailable for many noninfringing educational uses.”<sup>321</sup> As discussed above, however, the Register does not believe that the proposed uses are likely to be noninfringing. Thus, although the proposed uses may assist educational institutions in their teaching, consistent with the second and third factors, the section 1201 factors presume noninfringing uses. Regarding the fourth statutory factor—the effect of circumvention on the market for or value of copyrighted works—as previously noted, brief, educational uses are unlikely to undermine the value of copyright-protected motion pictures, but the use of full-length motion pictures would likely affect their digital market.<sup>322</sup> Therefore, the Register cannot conclude that the factors favor BYU’s proposed expansion.

*ii. MOOCs*

Joint Educators argue that the exemption’s limitation to nonprofit accredited MOOCs is causing an adverse effect on noninfringing uses. Regarding the first section 1201 statutory factor, they maintain that “our nation’s learners, young and old, virtually all online now, will be adversely affected . . . if educators and preparers of educational

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<sup>318</sup> BYU Class 1 Initial at 22.

<sup>319</sup> 2018 Recommendation at 70.

<sup>320</sup> *Id.* (quoting 2015 Recommendation at 124).

<sup>321</sup> BYU Class 1 Initial at 23.

<sup>322</sup> 2018 Recommendation at 71.

materials for online learning platforms . . . are not allowed to make noninfringing uses of copyrighted works as discussed here.”<sup>323</sup> They assert that the prohibition against circumvention “prevents many online learning platforms from accessing [materials on DVDs, Blu-ray discs, and streaming services] to incorporate short clips into their courses,”<sup>324</sup> and that many worthwhile materials will not be made available to potential users. Joint Educators contend that expansion to unaccredited and for-profit platforms is necessary to facilitate the distribution of educational materials to a wider audience.<sup>325</sup>

As to the second statutory factor, Joint Educators state that they “are not aware of any market offerings that provide educators and preparers of [online] educational materials for online learning platforms with the clips they need.”<sup>326</sup> Regarding the third statutory factor, they maintain that “[i]ncluding short clips of movies and television shows in online courses has the ability to capture students’ attention and get them to engage more actively with the material,” and that short clips can “provid[e] visual examples of a concept being taught, encourag[e] commentary and critique of the work, inspire[e] students to think bigger, and allow[] them to engage with the shared experiences of the characters depicted onscreen.”<sup>327</sup> Further, Joint Educations contend that maintaining the current exemption “will only serve to heighten the unequal access issues that already pervade the educational system.”<sup>328</sup> As to the fourth statutory factor, Joint Educators contend that the proposed use “would be strictly limited to minimize the potential effect on the market or value of copyrighted works,” and that “[t]he clips being excerpted are meant for the limited purpose of educating students . . . , so it is unlikely that those accessing the clips would reuse them.”<sup>329</sup> Moreover, they assert that the clips may encourage students “to seek out the full version of the work,” thus expanding the potential market for the full-length work.<sup>330</sup>

Opponents contend that the section 1201 statutory factors do not favor the proposed exemption. They argue that the proposal “will not result in the availability of more works,” as “[n]othing suggests that online learning platforms are presently unable to make or prepare educational materials.”<sup>331</sup> They acknowledge that works created under the proposed exemption would be for educational purposes, consistent with the second

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<sup>323</sup> Joint Educators Class 1 Initial at 18.

<sup>324</sup> *Id.* at 19.

<sup>325</sup> *Id.* at 3.

<sup>326</sup> *Id.* at 19.

<sup>327</sup> *Id.* at 20.

<sup>328</sup> *Id.*

<sup>329</sup> *Id.*

<sup>330</sup> *Id.*

<sup>331</sup> DVD CCA & AACCS LA Class 1 Opp’n at 41.

factor.<sup>332</sup> As to the third factor, opponents essentially maintain that adequate alternatives to circumvention exist.<sup>333</sup> Regarding the fourth factor, opponents stress the commercial nature of most of the proposed uses, and state that licensed clips are available for those uses.<sup>334</sup>

The Register concludes that proponents have established a likely adverse effect to the extent the current exemption does not cover employees of qualifying MOOCs acting under the direction of faculty members for the purpose of offering a course. Regarding the first statutory factor, the record shows that a limited expansion to allow circumvention by employees likely would increase the availability of copyrighted works for certain uses of motion picture clips. The second and third statutory factors favor the uses in question for the same reasons as are applicable to the current exemption: circumvention by employees will increase the availability of work for educational purposes and for teaching, scholarship, and research. Finally, under the fourth statutory factor, there is no evidence that expansion of the exemption to MOOC employees acting at the direction of a faculty member will adversely affect the market for or value of copyrighted works.

With respect to the proposed expansion to for-profit entities, in light of the Register's finding that proponents have failed to establish a noninfringing use, it is unnecessary to address whether they have demonstrated an adverse impact on such use. Regarding the offering of MOOCs by unaccredited nonprofit educational institutions, the Register finds that the current record is insufficient to support a finding of adverse effects. As noted, proponents provided only one example of a non-accredited entity seeking to engage in the proposed uses, and the nature of its activities is unclear based on the evidence submitted. The Register therefore cannot assess whether, or to what extent, an expansion to such entities might affect the availability of copyrighted works for educational purposes or any impacts their activities may have on the relevant markets. The Register is open to revisiting this issue in the future should a more robust record be provided.

### 3. NTIA Comments

NTIA generally supports the proposed expansions in this class, with certain modifications. First, it recommends elimination of the requirement that users evaluate whether screen-capture technology provides sufficient detail for the intended use, believing that language "is the cause of much confusion and actually adds ambiguity to

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<sup>332</sup> *Id.* at 42.

<sup>333</sup> *Id.* at 43.

<sup>334</sup> *Id.* at 44.

the exemption.”<sup>335</sup> In its view, such a requirement is unnecessary because other language in the exemption “requires that the user determine whether there are non-circumventing alternatives available for their purposes.”<sup>336</sup> As discussed, however, the Register continues to believe that the screen-capture language has the benefit of assuring users that use of such technology pursuant to the exemption will not subject them to circumvention liability. Moreover, the Register notes that users merely are required to evaluate the possibility of using screen capture; they are not required to use it if it will not produce images of sufficient quality for their intended use.<sup>337</sup>

Regarding BYU’s proposals, NTIA agrees with the Register that the exemption should be extended to university employees acting at the direction of faculty members for the purpose of teaching a course. In addition, it generally supports BYU’s request to permit space-shifting of full-length motion pictures to facilitate use in both classroom and virtual classroom settings, subject to a lack of market availability.<sup>338</sup> However, it does not support BYU’s request to eliminate “educational uses” from the language of the exemption.<sup>339</sup> NTIA argues that the pandemic has heightened the need for space-shifting to foster online teaching,<sup>340</sup> and that the unavailability of various titles for licensed streaming, as noted by BYU and other proponents of this change, constitutes a “market failure.”<sup>341</sup> Further, NTIA supports, with some modifications, BYU’s proposal to allow such uses as long as the institution has policies to insure that “all uses are noninfringing as guided by . . . §§ 107, 110(1), and 110(2).”<sup>342</sup>

For the reasons discussed above, the Register declines to recommend these changes. With regard to the “educational uses” language, the Register continues to believe that this provision provides an important boundary to ensure that the covered activities are likely to constitute fair use. As to space-shifting of full-length motion pictures, the Register disagrees that the uses proposed by BYU are likely to be noninfringing. As discussed above, the statutory limits and the case law make it doubtful that such activity would be found noninfringing, and NTIA does not cite any new authority to the

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<sup>335</sup> Letter from Evelyn L. Remaley, Acting Assistant Sec’y for Commc’ns & Info. & Adm’r, Nat’l Telecomms. & Info. Admin., U.S. Dep’t of Commerce, to Shira Perlmutter, Register of Copyrights and Dir., U.S. Copyright Office, at 16 (Oct. 1, 2021) (“NTIA Letter”).

<sup>336</sup> *Id.* at 17.

<sup>337</sup> *Contra id.* at 15 (quoting BYU Class 1 Initial Comments at 23) (referring to the “obligation to use screen capture technologies”).

<sup>338</sup> *Id.* at 21–23.

<sup>339</sup> *Id.* at 18–19.

<sup>340</sup> *Id.* at 21.

<sup>341</sup> *Id.* at 21–22.

<sup>342</sup> *Id.* at 25 (emphasis omitted).

contrary. Further, while the Register acknowledges that the market for full-length motion pictures for educational use is imperfect, the record indicates that it is improving and that the proposed exemption could inhibit its further development.

Finally, with regard to Joint Educators' proposals, NTIA supports the proposed expansion to include for-profit educational platforms.<sup>343</sup> In its view, "this exemption should be limited to educational entities that employ educators or demonstrate that they themselves are educators that provide or develop content whether or not they are accredited or are for-profit or not-for-profit."<sup>344</sup> It states further that "[t]he definition of educators and educational entities in this context should be construed as broadly as possible,"<sup>345</sup> and that the exemption "favors small businesses formed to be educational entities and can allow for those that are experts in their field to develop educational materials and specialized online courses utilizing that expertise."<sup>346</sup> NTIA stresses the desirability of facilitating online education during the pandemic and beyond.<sup>347</sup> The Register believes, however, that the predominantly commercial nature of most of the proposed beneficiaries is significant. Indeed, NTIA acknowledges that "it would be difficult to draw the line between certain entities."<sup>348</sup> The Register also disagrees with NTIA's view that requiring MOOCs to follow the restrictions in the current exemption relating to student registration and unauthorized content dissemination would be a sufficient safeguard against misuse of the exemption.<sup>349</sup>

#### 4. Conclusion and Recommendation

As detailed above, the proponents seeking expansions for certain educational uses have demonstrated that various technological measures interfere with their ability to make additional desired uses of motion pictures and that a number of those uses are likely noninfringing. The Register thus recommends that the current exemption be expanded in certain ways to reflect this additional record. But because proponents have not provided a record showing the need to circumvent audiovisual works protected by AACSS2, the Register does not recommend inclusion of those works in the exemption.

For all categories of uses, the regulatory text expressly permits the use of screen-capture technology. As noted above, the Register recommends retaining a screen-capture

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<sup>343</sup> *Id.* at 8–12.

<sup>344</sup> *Id.* at 11.

<sup>345</sup> *Id.* (citing Joint Educators Class 1 Post-Hearing Resp. at 6 (May 14, 2021)).

<sup>346</sup> *Id.* (citing Joint Educators Class 1 Post-Hearing Resp. at 6 (May 14, 2021)).

<sup>347</sup> *Id.* at 10.

<sup>348</sup> *Id.* at 11.

<sup>349</sup> *See id.* at 12.

provision to address the possibility that use of this technology could be deemed to involve circumvention.

The Register again recommends against expansion to allow circumvention to copy and perform full-length motion pictures for educational purposes. Proponents have not demonstrated any changes in the law to justify a finding of noninfringing use. Similarly, proponents have not provided evidence that the existing exemption does not cover certain proposed uses of motion picture clips so as to warrant adjusting the phrase “short portions” to “reasonable and limited portions.” The Register does, however, recommend expanding the exemption to permit employees of colleges and universities, in addition to their faculty, to perform the circumvention at the direction of a faculty member of the institution for the purpose of teaching a course.

In evaluating the proposed expansions for MOOCs, the Register finds that the record lacks support to expand the existing exemption to for-profit and/or unaccredited educational companies and organizations. Moreover, the Register does not recommend adoption of proponents’ broadly framed proposal to encompass “online learning materials” of “online learning platforms,” as it would seemingly encompass any online video that could be characterized as an educational experience. Similar to the provision regarding colleges and universities, the Register does recommend expanding the exemption to permit circumvention by both faculty and employees acting at the direction of faculty of accredited nonprofit educational institutions for purposes of offering MOOCs already eligible under the existing exemption.

Accordingly, the Register recommends that the Librarian designate the following class:

**Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, 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 Content System, or via a digital transmission protected by a technological measure, and the person engaging in circumvention under paragraphs (b)(1)(i) and (b)(1)(ii)(A) and (B) of this section reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content, or 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, where circumvention is undertaken solely in order to make use of short portions of the motion pictures in the following instances:**

**(i) For the purpose of criticism or comment:**

(A) For use in documentary filmmaking, or other films where the motion picture clip is used in parody or for its biographical or historically significant nature;

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

(C) For use in nonfiction multimedia e-books.

(ii) For educational purposes:

(A) By college and university faculty and students or kindergarten through twelfth-grade (K-12) educators and students (where the K-12 student is circumventing under the direct supervision of an educator), or employees acting at the direction of faculty of such educational institutions for the purpose of teaching a course, including of accredited general educational development (GED) programs, for the purpose of criticism, comment, teaching, or scholarship;

(B) By faculty of accredited nonprofit educational institutions and employees acting at the direction of faculty members of those institutions, for purposes of offering massive open online courses (MOOCs) to officially enrolled students through online platforms (which platforms themselves may be operated for profit), in film studies or other courses requiring close analysis of film and media excerpts, for the purpose of criticism or comment, 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); or

(C) 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 the purpose of criticism or comment, except that such users may only circumvent 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.

## *B. Proposed Class 2: Audiovisual Works—Texting*

### **1. Background**

#### **a. Summary of Proposed Exemption**

Petitioner SolaByte Corp. (“SolaByte”) requests an exemption to access “licensed audio/video works stored on optical disc media for the purpose of creating short (10 seconds or less) A/V clips that enhance communication effectiveness and understanding when using TEXTing messages.”<sup>350</sup> The proposed class “[i]ncludes movies, TV shows, music video, other copyrighted works” that are stored on “[p]ackaged and replicated DVD or Blu-ray discs playable on computer or CE player hardware.”<sup>351</sup> Eligible users would include persons “who want to create expressive clips that convey their thoughts when texting.”<sup>352</sup> Following the initial petition, SolaByte did not submit legal arguments or evidence or participate in the public hearings in support of their petition. Free Software Foundation (“FSF”) filed comments generally supporting this exemption, but did not provide any evidence or substantive argument regarding the merits of the specific proposal.<sup>353</sup> Joint Creators and DVD CSS & AACCS LA both filed comments opposing the proposed exemption.

#### **b. Overview of Issues**

Sending text messages has become a daily form of communication for many, and FSF suggests that “short clips and images are increasingly how people communicate.”<sup>354</sup> SolaByte argues that the proposed class would “enhance communication and understanding in an abbreviated or compressed TEXTing environment” by allowing users to circumvent TPMs on DVDs and Blu-rays to “extract[], edit[] and creat[e] usable clips” that communicate for the user.<sup>355</sup>

The covered works of the proposed class were not clear. In opposing the class, Joint Creators argue that because the petition sought an exemption for “A/V content stored on DVD and Blu-rays,” it should be read to include motion pictures only, and not other audiovisual works, such as video games.<sup>356</sup>

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<sup>350</sup> SolaByte Class 2 Pet. at 2.

<sup>351</sup> *Id.*

<sup>352</sup> *Id.*

<sup>353</sup> FSF Class 2 Initial at 2.

<sup>354</sup> *Id.*

<sup>355</sup> SolaByte Class 2 Pet. at 2.

<sup>356</sup> Joint Creators Class 2 Opp’n at 2.



It is not apparent whether SolaByte seeks an exemption for non-infringing uses, nor, assuming the uses are non-infringing, whether an exemption is needed to access the covered works (read broadly or narrowly). SolaByte offers no legal argument for why the intended uses would be non-infringing. FSF claims that texting video clips for expressive purposes is non-infringing because it is protected by the fair use doctrine, but their cursory comment offers no legal basis for deeming all such uses fair uses. Joint Creators argue that at least some of the targeted uses “are likely infringing in many instances,” noting an existing “market for licensing motion picture clips.”<sup>357</sup>

Assuming the uses are non-infringing, the proponents do not explain why an exemption is needed. SolaByte notes that “A/V content stored on DVD and Blu-ray disc is encrypted[,] thereby preventing users from extracting, editing and creating usable clips,”<sup>358</sup> but does not address whether some of these uses would already be covered by an existing exemption or can be accomplished without circumvention. Indeed, both opponents, Joint Creators and DVD CCA & AACCS LA, argue that because proponents have not substantiated the need for this exemption, it should be rejected.<sup>359</sup>

## 2. Discussion

SolaByte appears to have proposed a broad exemption for any user who wants to use audiovisual clips to express themselves when texting (similar to individuals sending GIFs in texts, but with audio). It is not clear from the petition if that activity would be limited to films, TV, music videos, and similar types of copyrighted works or would include video games, multimedia works, and other types of copyrighted works. While FSF urges a broad class that would include “all audiovisual works and all users,” it did not explain why the exemption should be so drawn, other than to claim that “all users have a legitimate right to circumvent controls on audiovisual works, regardless of the medium or the particular use involved.”<sup>360</sup>

In any event, the Office need not determine the appropriate scope of covered works because the rest of the record is insufficiently developed as well. The NPRM explicitly called for additional details about numerous aspects of the proposed exemption, including whether it would be available to commercial services.<sup>361</sup> Proponents did not provide a response. As the Register has stated in past triennial reviews, proponents

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<sup>357</sup> *Id.* at 3.

<sup>358</sup> SolaByte Class 2 Pet. at 2.

<sup>359</sup> Joint Creators Class 2 Opp’n at 2; DVD CCA & AACCS LA Class 2 Opp’n at 3–4.

<sup>360</sup> FSF Class 2 Initial at 2.

<sup>361</sup> NPRM at 65,303.

must provide more than a “*de minimis* showing made in support of the proposed exemption.”<sup>362</sup>

### 3. NTIA Comments

NTIA agrees with the Register that an exemption for this class is not warranted. NTIA recognizes that “[p]roponents did not provide sufficient evidence on the record to define the exact scope and underlying circumstances to support this petition.”<sup>363</sup> Moreover, it notes that “proponents failed to file any further comments or otherwise present evidence at the hearings.”<sup>364</sup> Although “NTIA believes this proposed use may not be clearly covered by current exemptions and therefore warrants future discussion regarding this issue,” it agrees with the Register that “proponents did not meet their burden in this round.”<sup>365</sup>

### 4. Conclusion and Recommendation

While the Office recognizes that texting is an important medium of communication and that users may wish to send audiovisual clips as part of their text messages, many questions remain regarding whether an exemption under section 1201 is warranted. These include the types of works eligible, the extent to which uses would be non-infringing, and whether and which TPMs prevent users from making non-infringing uses of audiovisual clips for texting. The current record does not address these questions, and therefore the Register does not recommend adoption of proposed Class 2.

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<sup>362</sup> 2006 Recommendation at 76.

<sup>363</sup> NTIA Letter at 27.

<sup>364</sup> *Id.* at 27–28.

<sup>365</sup> *Id.* at 28.

### *C. Proposed Class 3: Audiovisual Works—Accessibility*

#### **1. Background**

##### **a. Summary of Proposed Exemption**

Petitioners Association of Transcribers and Speech-to-Text Providers, Association on Higher Education and Disability, and Library Copyright Alliance (collectively, “Accessibility Petitioners”)<sup>366</sup> seek to expand a current exemption that permits the circumvention of TPMs protecting motion pictures so that disability services professionals at educational institutions can add captioning and/or audio description to create accessible versions. Specifically, proponents request the following modifications: (1) including faculty and staff as beneficiaries in addition to students;<sup>367</sup> (2) allowing reuse of previously remediated materials created under the exemption;<sup>368</sup> (3) permitting circumvention to create accessible versions that are likely to be the subject of accommodations requests (*i.e.*, proactive remediation);<sup>369</sup> (4) allowing circumvention where a motion picture is represented as “accessible” but errors in captions or audio description make the work not of “sufficient quality” for individuals with disabilities;<sup>370</sup> and (5) clarification of the requirement to make “reasonable efforts” to obtain an accessible version of an audiovisual work at a “fair price.”<sup>371</sup>

Proponents’ requested language is as follows, with proposed deletions indicated with strikethroughs and proposed additions indicated in italics:

(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or via a digital transmission protected by a technological measure, where:

(A) Circumvention is undertaken by a disability services office or other unit of a kindergarten through twelfth-grade educational institution, college, or university engaged in and/or responsible for the provision of

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<sup>366</sup> Some of these organizations also filed comments in support of Classes 8 and 17. For simplicity, in this section, “Accessibility Petitioners” refers to the coalition of accessibility groups who filed comments in support of Class 3.

<sup>367</sup> Accessibility Petitioners Class 3 Initial at 10–11.

<sup>368</sup> *Id.* at 14–15.

<sup>369</sup> *Id.* at 11–12.

<sup>370</sup> *Id.* at 12–13.

<sup>371</sup> *Id.* at 13–14.

accessibility services ~~to students~~, for the purpose of adding captions and/or audio description to a motion picture to create an accessible version ~~as a necessary accommodation for a student or students with disabilities under an applicable disability law, such as the Americans With Disabilities Act, the Individuals with Disabilities Education Act, or Section 504 of the Rehabilitation Act~~; for students, faculty, or staff with disabilities;

(B) The educational institution unit in paragraph (b)(2)(i)(A) of this section has, after a reasonable effort, determined that an accessible version *of sufficient quality* cannot be obtained at a fair *market* price or in a timely manner, *including where a copyright holder has not included an accessible version of a motion picture included with a digital textbook*; and

(C) The accessible versions are provided to students or educators and stored by the educational institution in a manner intended to reasonably prevent unauthorized further dissemination of a work, *except for storage that allows for future reuse of the material by students, faculty, or staff with disabilities pursuant to subparagraphs (A) and (B)*.

(ii) For purposes of this paragraph (b)(2), “audio description” means an oral narration that provides an accurate rendering of the motion picture.<sup>372</sup>

FSF filed a comment expressing general supporting this exemption but did not provide evidence or substantive argument regarding the specific proposal.<sup>373</sup> Joint Creators, as well as DVD CCA and AACCS LA, filed opposition comments largely agreeing with proponents’ requested changes, while seeking additional clarification on a few modifications.<sup>374</sup>

Because the hearings revealed substantial agreement among the parties, the Office issued a post-hearing letter requesting the parties to confer and, if they were able to reach consensus, to jointly propose regulatory language.<sup>375</sup> The parties reported that they were unable to agree on regulatory language, but

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<sup>372</sup> Accessibility Petitioners Class 3 Initial at 5–6.

<sup>373</sup> FSF Class 3 Initial at 2.

<sup>374</sup> Joint Creators Class 3 Opp’n at 4–5 (questioning when captions would be considered “not of sufficient quality” and opposing permitting proactive remediation in advance of an accessibility request); DVD CCA & AACCS LA Class 3 Opp’n at 3–4 (suggesting the Register limit when proactive remediation would be permitted and require objective indicia for determining when captions were not of “sufficient quality”).

<sup>375</sup> Copyright Office Class 3 Post-Hearing Letter (Apr. 16, 2021).

proponents and opponents separately offered language with considerable similarities.<sup>376</sup> Proponents suggested the following changes to their initial proposal: (1) removing the word “digital” from the phrase “motion picture included with a digital textbook”; (2) modifying subparagraph (i)(C) “to clarify that reuse of already-remediated works is permitted”; (3) adding language that would permit proactive remediation where an educational unit has a reasonable belief that a particular work will be used for a specific future activity; and (4) clarifying the situations under which an accessible version is of sufficient quality for purposes of the market check requirement.<sup>377</sup> In their submission, Joint Creators, DVD CCA, and AACCS LA proposed adjustments to “the language describing the requisite security measures to be used by exemption beneficiaries and the language used to describe the market check requirement.”<sup>378</sup>

### b. Overview of Issues

In 2018, the Acting Register recommended adoption of the current exemption, finding that proponents made a “compelling case” that “converting motion pictures into accessible formats for students with disabilities by adding captions and/or audio description is a noninfringing fair use”<sup>379</sup> and that the prohibition on circumvention adversely affected individuals seeking to engage in that activity.<sup>380</sup> The recommendation noted that “public policy favors removing impediments to access for individuals with disabilities,”<sup>381</sup> and that “[a]n exception to promote accessibility ‘is not merely a matter of convenience, but is instead intended to enable individuals [with disabilities] to have meaningful access to the same content that individuals without such impairments are able to perceive.’”<sup>382</sup> The Acting Register was mindful, however, that the exemption “must also take into account that for a significant number of feature films and other audiovisual works, the market already provides accessible versions, which may alleviate the need to circumvent certain works,”<sup>383</sup> and thus recommended that the

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<sup>376</sup> See Accessibility Petitioners Class 3 Post-Hearing Resp. (May 14, 2021); Joint Creators et al. Class 3 Post-Hearing Resp. Attachment (May 14, 2021).

<sup>377</sup> Accessibility Petitioners Class 3 Post-Hearing Resp. at 2–3 (May 14, 2021).

<sup>378</sup> See Joint Creators et al. Class 3 Post-Hearing Resp. at 1 (May 14, 2021).

<sup>379</sup> 2018 Recommendation at 101 (finding noninfringement conclusion supported by “the legislative history of the 1976 Copyright Act, the Chafee Amendment, the *HathiTrust* decision, and other existing disability laws”).

<sup>380</sup> *Id.* at 101–06.

<sup>381</sup> *Id.* at 104 (quoting 2012 Recommendation at 21).

<sup>382</sup> *Id.* (quoting 2015 Recommendation at 136, 2012 Recommendation at 22).

<sup>383</sup> *Id.* at 105.

exemption “take into account and further incentivize the marketplace offerings, including by requiring a reasonable market check for usable copies.”<sup>384</sup>

Proponents explain that the existing exemption “has been widely used and appreciated by disability services professionals that must circumvent technological measures protecting audiovisual works to provide remediated versions for students at educational institutions,”<sup>385</sup> and that it “was a good first step towards helping students with disabilities have access to necessary resources for their classes.”<sup>386</sup> The proposed expansions seek to “ensure that disability services professionals can do their jobs to improve accessibility for students, faculty, and staff with disabilities” and “empower them to make works accessible for people with disabilities in educational contexts.”<sup>387</sup> For the reasons discussed below, the Register agrees that the expansions should be adopted, with certain modifications.

Before turning to the specific proposals for clarification or expansion of this exemption, the Register first addresses an argument by DVD CCA and AACCS LA that the exemption should not be expanded to include AACCS2 technology, which is employed to protect ultra-high-definition or “4K” content distributed on Ultra HD Blu-ray discs.<sup>388</sup> As noted above for Class 1, the Office has previously rejected requests to cover AACCS2 technology where proponents had provided “very little in the record” showing the need to circumvent AACCS2 to access motion pictures.<sup>389</sup> In such cases, “the Register has declined to include new technology where the record did not demonstrate a need, and exemptions to permit circumvention of new technology have been adopted only upon showings of a need to access works protected by that specific technology.”<sup>390</sup> Here, proponents do not reference AACCS2 in their petition or initial comments.<sup>391</sup> After DVD CCA and AACCS LA opposed expansion to AACCS2 and argued that it is “a distinct

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<sup>384</sup> *Id.* at 106.

<sup>385</sup> Accessibility Petitioners Class 3 Initial at 4.

<sup>386</sup> *Id.* at 31.

<sup>387</sup> *Id.* at 4.

<sup>388</sup> See DVD CCA & AACCS LA Class 3 Opp’ n at –2 (arguing that AACCS2 is a “distinct technology” from AACCS and that “[t]o the extent a proposal mentions CSS and/or AACCS, but does not explicitly include AACCS2, such mention should not be inferred to include AACCS2”).

<sup>389</sup> 2018 Recommendation at 40–41. The proponents of the current accessibility exemption did not raise AACCS2 in the 2018 record for that class.

<sup>390</sup> 2018 Recommendation at 40.

<sup>391</sup> See Accessibility Petitioners Class Pet. at 2 (describing Class 3 as “expanding the current exemption in 37 C.F.R. § 201.40(b)(2),” which refers only to AACCS); Accessibility Petitioners Class 3 Initial at 7 (stating TPMs at issue in Class 3 are “substantially the same as the TPMs that were in use and considered during the last triennial review”).

technology” from AACS,<sup>392</sup> proponents asserted that the Office should “interpret the scope of the existing exemption’s coverage of AACS broadly to cover AACS2,” but did not offer evidence of the need to circumvent AACS2, including addressing whether access to materials in formats protected by other TPMs (*e.g.*, non-ultra HD Blu-ray or DVDs) would be sufficient for the desired uses.<sup>393</sup> Because of the lack of evidence showing a need to circumvent AACS2, and for the same reasons discussed in the Register’s recommendation for Class 1, the Register finds the record insufficient to support extending the proposed class to AACS2.

## 2. Discussion

In 2018, the Acting Register concluded that proponents had offered “credible support for their claim that converting motion pictures into accessible formats for students with disabilities by adding captions and/or audio description is a noninfringing fair use.”<sup>394</sup> The Register must now determine whether the additional activities permitted by the requested modifications are likewise noninfringing.<sup>395</sup>

First, the Office considers the request to expand the exemption to permit circumvention to create accessible materials for faculty and staff, in addition to students. Proponents note that educational institutions are required under disability law to create accessible version of audiovisual works for faculty and staff, just as they are required to remediate for students.<sup>396</sup> Proponents further assert that this change falls within the scope of the Office’s 2018 fair use analysis of the current exemption.<sup>397</sup> There was no opposition to this requested change.<sup>398</sup> The Register agrees that this adjustment would not change the Office’s prior fair use analysis. As the Acting Register noted in 2018, “adding captions or audio description to a motion picture for purposes of creating accessible versions for

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<sup>392</sup> DVD CCA & AACS LA Class 3 Opp’ n at 2.

<sup>393</sup> See Accessibility Petitioners Class 3 Reply at 6–7; Tr. at 12:10–14 (Apr. 5, 2021) (Goodstein, Association of Transcribers and Speech-to-Text Providers (“ATSP”)) (“We weren’t explicit in our comment regarding AACS2 because we feel that there is no real distinction in principle between captioning a video that is in AACS format and captioning a video that’s in AACS2 format”); Tr. at 12:24–13:02 (Apr. 5, 2021) (Reid, ATSP) (“in consulting with our clients and disability services professionals, it doesn’t sound like there is a strong need to circumvent AACS2 videos”).

<sup>394</sup> 2018 Recommendation at 101.

<sup>395</sup> See Accessibility Petitioners Class 3 Pet. at 2 (describing class as “expanding the current exemption in 37 C.F.R. § 201.40(b)(2)”). The scope of copyrighted works affected is the same as in 2018.

<sup>396</sup> Accessibility Petitioners Class 3 Initial at 10–11 (citing 42 U.S.C. § 12112(b)(5)(A) (requiring employers to make reasonable accommodations to employees with disabilities)).

<sup>397</sup> *Id.* at 16, 22.

<sup>398</sup> See Joint Creators Class 3 Opp’ n at 3; DVD CCA & AACS LA Class 3 Opp’ n at 3.

students with disabilities, in compliance with disability laws, is a ‘valid purpose,’ weighing in favor of fair use.”<sup>399</sup> Because educational institutions similarly have legal obligations with respect to faculty and staff with disabilities, and because the expansion is directed at the same uses the Office has previously concluded are likely to be fair, the Register finds that proponents have met their burden of showing that the proposed expansion to faculty and staff is likely to be fair use.

Second, the Office considers proponents’ request for language specifically permitting reuse of motion pictures previously remediated under the exemption. Proponents explain that because the current exemption does not expressly refer to reusing remediated material, the regulation could be interpreted as requiring repeated remediation of a motion picture (and thus repeated circumvention of TPMs) when used by different students across different semesters.<sup>400</sup> DVD CCA and AACCS LA do not object to this proposal,<sup>401</sup> and Joint Creators agree that “[d]isability services departments should not have to repeat the effort of remediating the same work within the same institution multiple times,” provided the works are stored securely to prevent unauthorized further dissemination.<sup>402</sup> The Register agrees that permitting remediated material to be used for other exemption beneficiaries does not materially change the fair use analysis, particularly given the requirement that accessible works created under the exemption be “stored by the educational institution in a manner intended to reasonably prevent unauthorized further dissemination of a work.”<sup>403</sup> Nor does the record suggest that this change is likely to negatively affect the market for these copyrighted works. Moreover, an educational institution’s inability to use a previously remediated copy for these purposes would result in the same adverse impacts that justified the current exemption.<sup>404</sup>

Third, proponents also seek to permit educational institutions to proactively create accessible versions of materials in advance of a specific accommodations request. Proponents contend that this expansion will allow disability services professionals “to retain the ability to make professional judgments about compliance with [disability]

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<sup>399</sup> 2018 Recommendation at 97 (citing *Authors Guild v. HathiTrust*, 755 F.3d 87, 102 (2d. Cir. 2014)).

<sup>400</sup> Accessibility Petitioners Class 3 Initial at 14–15; Tr. at 17:08–18:16 (Apr. 5, 2021) (Kapcala, West Virginia University) (noting that where a “curriculum stays the same or stays fairly consistent from year to year,” having to caption the same work multiple times “would represent a significant amount of time” and divert resources from in-class transcription).

<sup>401</sup> DVD CCA & AACCS LA Class 3 Opp’n at 3.

<sup>402</sup> Joint Creators Class 3 Opp’n at 3–4.

<sup>403</sup> 37 C.F.R. § 201.40(b)(2)(i)(C).

<sup>404</sup> See 2018 Recommendation at 104 (exemption was justified because it would “allow[] the wide range of motion pictures that are available to the general population to be accessed and enjoyed by students with disabilities”).



laws,”<sup>405</sup> as well as to address instances where students do not submit an accommodation request because they do not self-identify as having a disability.<sup>406</sup> Proponents also note that allowing proactive remediation would afford disability services professionals the flexibility to space out remediation work to avoid backlogs or to accommodate specific campus policies.<sup>407</sup>

In response, DVD CCA and AACLS LA agree that it is important to avoid delay in providing remediated copies to students requiring accommodation, but propose limiting proactive remediation to “no earlier than at the point the instructor knows or reasonably believes his or her course will make use of a particular work,” or when a school has not identified an instructor but knows a course will likely use a work.<sup>408</sup> Joint Creators do not object to proactive remediation so long as an institution knows a work will be used in the classroom, such as when it is added to a course syllabus.<sup>409</sup>

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<sup>405</sup> Accessibility Petitioners Class 3 Reply at 11 (because disability laws do not provide specific criteria for sufficiency of accommodations, “it is critical for EIU professionals to retain the ability to make professional judgments about compliance with these laws”).

<sup>406</sup> Accessibility Petitioners Class 3 Initial at 28 (Statement of Jason Kapcala, West Virginia University) (“We also project that only about 1/3 of students with disabilities on our campus request accommodations. That does not obviate our responsibility to provide equal access for the other 2/3 who choose not to self-identify.”).

<sup>407</sup> See Accessibility Petitioners Class 3 Initial at 11–12 (noting that remediating material is time consuming and making some works accessible in advance of a request can avoid delays and adverse impacts on students); Accessibility Petitioners Class 3 Initial at 29 (statement of Jason Kapcala, West Virginia University) (estimating it takes seven hours to caption a one-hour video and the ability to proactively remediate would benefit students early in a semester choosing what classes to add or drop); Accessibility Petitioners Class 3 Initial at 31 (statement of Anonymous Disability Service Professional) (“There is a blanket mandate under our university’s policy that all videos need to be captioned. It would not be possible to caption at the volume that we do if we had to wait for a student accommodation request before remediating classroom materials.”); Tr. at 32:08–33:10 (Apr. 5, 2021) (Reid, ATSP) (noting that some educational institutions require formal accommodations requests, some require all material to be accessible, potentially because a large portion of the student population has disabilities, and many institutions fall between those positions).

<sup>408</sup> DVD CCA & AACLS LA Class 3 Opp’n at 4.

<sup>409</sup> Tr. at 9:17–10:07 (Apr. 5, 2021) (Williams, Joint Creators) (Joint Creators do not object to proactive remediation where a work was already “on a course syllabus” or when the school otherwise knew the work would be used in a class, so long as the exemption does not “allow[] for the entire library catalogue to be circumvented in advance so that when something is added to a class, it can be rendered accessible”); see also Tr. at 43:03–18 (Apr. 5, 2021) (Williams, Joint Creators) (similar).

After considering the record in this proceeding, the 2018 fair use analysis, and proposed language from the parties,<sup>410</sup> the Register concludes that proactive remediation of motion pictures that an instructor or educational institution knows or reasonably believes will be used for a future activity of the institution is likely to be a fair use.<sup>411</sup> The Office has previously determined that the creation of accessible versions for students, faculty, and staff with disabilities is a “valid purpose” weighing in favor of fair use.<sup>412</sup> Proponents have provided convincing evidence that proactive remediation will enable these users to benefit from accessible materials.<sup>413</sup> Proponents have also provided evidence that remediation is sufficiently time-consuming that institutions typically will not do so absent a legitimate need.<sup>414</sup> In light of this showing, as well as for the reasons explained in 2018, the Register concludes that proactive remediation is likely to be fair use.<sup>415</sup> The Register accordingly will recommend language to this effect in the regulatory text.

To reflect this change, Accessibility Petitioners suggest removing the requirement that circumvention be part of a necessary accommodation under a particular disability law and instead permit circumvention “to create an accessible version for students, faculty,

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<sup>410</sup> See Accessibility Petitioners Class 3 Post-Hearing Resp. at 1–2 (May 14, 2021); Joint Creators et al. Class 3 Post-Hearing Resp. Attachment (May 14, 2021).

<sup>411</sup> The Register bases her conclusion partially on the fact that the existing exemption includes a market check requirement. See 37 C.F.R. § 201.40(b)(2)(B) (requiring educational institution to use “reasonable effort” to determine whether “an accessible version can be obtained at a fair price or timely manner”). As the Acting Register noted in 2018, the fourth fair use factor, which looks to the market for the copyrighted works, “weighs in favor of fair use when there is a market check requirement because “[w]hen an accessible version is not available in the marketplace, the proposed use is less likely to interfere with the primary or derivative markets for the motion picture.” 2018 Recommendation at 100.

<sup>412</sup> 2018 Recommendation at 97 (citing *HathiTrust*); see also *id.* at 100–01.

<sup>413</sup> See Accessibility Petitioners Class 3 Initial at 28 (Statement of Jason Kapcala, West Virginia University) (estimating two thirds of students do not self-identify as having a disability); Tr. at 29:08–30:12 (Apr. 5, 2021) (Reid, ATSP) (students may decline to make formal accommodations request due to concerns of professional consequences); Tr. at 30:22–31:06 (Apr. 5, 2021) (Kapcala, West Virginia University) (students may also not self-identify out of discomfort or not recognizing extent of their disability).

<sup>414</sup> See Accessibility Petitioners Class 3 Initial at 29 (Statement of Jason Kapcala, West Virginia University) (estimating it takes seven hours to caption a one-hour video); Tr. at 53:24–54:06 (Apr. 5, 2021) (Kapcala, West Virginia University) (educational institutions “don’t have the resources, the personnel, the money, the budgetary considerations to caption things that don’t really need it”).

<sup>415</sup> See 2018 Recommendation at 98–100.

or staff with disabilities.”<sup>416</sup> At the hearing, proponents stated that removing the reference to disability law was “part of the mechanical change that we suggested for allowing proactive remediation” because in some instances, “the extent to which disability law binds the university is not clear and there might actually be . . . diverging opinions” on whether proactive remediation is required under existing law.<sup>417</sup> In light of her conclusion that proactive remediation likely constitutes fair use where an educational institution reasonably believes that the accessible copy will be used for a future activity of the institution, the Register agrees that it is unnecessary to include a specific reference to a “necessary accommodation” pursuant to other laws. The recommended exemption therefore removes that language.

Fourth, proponents seek to clarify that they may invoke the exemption when a motion picture is represented as accessible, but the version “has captions or descriptions with insufficient quality, in the [Educational Institution Unit (EIU)]’s judgment, to facilitate equal access to the video.”<sup>418</sup> Proponents have testified that where educational institutions have identified motion pictures with errors such as incomplete captions, misspellings, and missing words, they were unsure if the existing exemption would apply so such errors could be corrected.<sup>419</sup> Proponents did not propose specific regulatory language to address when captions or descriptions would be of insufficient quality, and opponents raise questions about how this provision would operate in practice, such as whether it would be tied to regulations promulgated by the Federal Communications Commission.<sup>420</sup> Proponents object to tying quality to particular legal requirements, describing the captioning and description process as “a subjective determination” that is not governed by objective standards for every educational context.<sup>421</sup> Proponents explain that this subjectivity is driven by the particularized needs of students with disabilities, including as set forth in a student’s Individualized

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<sup>416</sup> Accessibility Petitioners Class 3 Initial at 5.

<sup>417</sup> Tr. at 20:09–21:13 (Reid, ATSP).

<sup>418</sup> Accessibility Petitioners Class 3 Initial at 12.

<sup>419</sup> *See id.* at 12–13; Accessibility Petitioners Class 3 Initial at 29 (Statement of Jason Kapcala, West Virginia University) (describing test of machine-generated captioning product that converted “These captions are terrible” to “These captions are bearable” and noting “similar issues with the auto-captioning” on YouTube); Tr. at 55:03–07 (Apr. 5, 2021) (Reid, ATSP) (“we’re talking about incomplete captions, missing words, misspellings of proper nouns, lack of punctuation”).

<sup>420</sup> *See* DVD CCA & AACSLA Class 3 Opp’n at 4 (noting a lack of objective criteria for making quality determination and that “[w]ithout meaningful objective criteria, there is a concern that a resulting exemption would be effectively unbounded”); Joint Creators Class 3 Opp’n at 3–4 (Joint Creators “do not oppose this expansion in principle” but cautioning against adoption of “a subjective standard that is difficult to measure”).

<sup>421</sup> Accessibility Petitioners Class 3 Reply at 9–10.

Education Program (IEP) plan.<sup>422</sup> Proponents also emphasized the lack of objective legal criteria to follow in making specific decisions about the quality and presentation of captions and audio descriptions.<sup>423</sup>

After considering the record, the Register concludes that proponents have provided convincing evidence of a legitimate need to remediate motion pictures with captions bearing significant errors. For example, proponents testified that YouTube provides auto-generated captions (but not audio description) and that machine-generated captions are generally not of sufficient quality for accessibility purposes.<sup>424</sup> Such works are not “accessible” as contemplated under the current regulatory language, the purpose of which is to permit “educational institutions to offer accessible formats of motion pictures on an equal basis in conformance with their legal responsibilities.”<sup>425</sup> Because the existing exemption permits circumvention “for the purpose of adding captions and/or audio description to a motion picture to create an accessible version,” the Register concludes that correcting errors in captions or audio description falls comfortably within the ordinary meaning of “creat[ing] an accessible version.” To avoid future uncertainty, however, the Register will recommend modifying the regulatory language to clarify that the relevant works for the market check requirement are “accessible version[s] of sufficient quality.”

The Register is also persuaded that disability services professionals should have appropriate discretion to assess questions of caption or audio description quality based on the needs of individual students. In general, disability laws do not appear to provide precise guidance on when captions and descriptions are of sufficient quality, or at least are not uniform on that issue. For example, the FCC’s recommendations for audio descriptions provide broad suggestions such as identifying “key visual elements” in

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<sup>422</sup> See Tr. at 45:16–46:06 (Apr. 5, 2021) (Reid, ATSP).

<sup>423</sup> See Accessibility Petitioners Class 3 Reply at 10–11 (noting FCC regulations only address broadcast television and permit “de minimis” errors that might not be appropriate in educational settings and that FCC recommendations for audio description have not been adopted as binding regulation); Tr. at 47:20–49:14 (Apr. 5, 2021) (Reid, ATSP) (testifying that disability laws “don’t have detailed regulations for the quality of accommodations” and providing examples).

<sup>424</sup> Accessibility Petitioners Class 3 Initial at 29 (Statement of Jason Kapcala, West Virginia University) (testifying his university created guidelines for when captioned media is of sufficient quality for classroom use, including “punctuation, speaker identifiers, non-verbals, line breaking, timing, visual contrast, and caption placement/orientation” and that he and his colleagues “have yet to encounter a machine-generated or autogenerated caption program that has been able to meet these standards”); Tr. at 55:03–56:21 (Apr. 5, 2021) (Reid, ATSP) (testifying that sometimes machine captions “just go[] off the rails” and that in the case of YouTube, videos with auto-generated captions frequently have errors and are missing audio descriptions); see also Accessibility Petitioners Class 3 Initial at 12–13.

<sup>425</sup> 2018 Recommendation at 107.

writing a script, and providing examples of things like “facial expressions,” “visual comedy,” and “clothing” as items that may, in some circumstances, be key visual elements.<sup>426</sup> Disability services professionals must therefore exercise judgment when remediating inaccessible material, taking into account particular needs of student populations.<sup>427</sup> Opponents largely acknowledged the need for flexibility in this context.<sup>428</sup> The Register therefore will not recommend that the term “sufficient quality” be tied to a particular disability law or legal standard.<sup>429</sup>

Fifth and finally, proponents seek to revise the regulatory requirement that institutions make “reasonable efforts” to obtain an accessible version of an audiovisual work at a “fair price.” Proponents express concern that “publishers may have latitude to deny the application of the exemption by offering to make an accessible version of videos included in a textbook available, but at a price higher than the market rate that the EIU would pay to caption or describe the video itself or at an untenably later date.”<sup>430</sup> They further maintain that “[w]hile an EIU could pay the additional cost, doing so would effectively allow the publisher a windfall, at the EIU’s expense, for price discriminating against students, faculty, and staff with disabilities on the basis of accessibility, and potentially delay the delivery of captions,” and that “the exemption should be modified to specify that ‘accessible versions’ must exist at the time an EIU undertakes the

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<sup>426</sup> Recommendation of the Federal Communications Commission Disability Advisory Committee (Oct. 14, 2020), Appendix A, <https://www.fcc.gov/file/19830/download>. See also 42 U.S.C. § 12181(7)(J) (classifying specific educational settings as public accommodations); 28 C.F.R. § 36.303(a) (public accommodations must “take those steps that may be necessary to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently”), (b) (providing “examples” of auxiliary aids and services that may be required).

<sup>427</sup> Tr. at 45:16–46:06 (Apr. 5, 2021) (Reid, ATSP) (testifying that remediation is “a conversation with a disability services professional about what a student needs in class”).

<sup>428</sup> See Tr. at 28:03–05 (Apr. 5, 2021) (Marks, AACS LA) (“We’re talking about disability services officers and professionals, and I think we have confidence in their good-faith judgment”); Tr. at 51:03–07 (Apr. 5, 2021) (Williams, Joint Creators) (“[W]e would prefer some kind of standard here, but we do understand where the other participants are coming from on this, and we certainly don’t want to suggest that disability services officers are commonly engaging in improper conduct.”).

<sup>429</sup> See, e.g., Tr. at 53:24–54:06 (Apr. 5, 2021) (Kapcala, West Virginia University) (disability services professionals “don’t want to caption things” because they “don’t have the resources, the personnel, the money, the budgetary considerations to caption things that don’t really need it”). The Register is also mindful that tying the sufficiency of captions to FCC regulatory requirements could result in circumvention and remediation not desired by a particular student, faculty member, or staff member. See also Tr. at 46:07–16 (Apr. 5, 2021) (Reid, ATSP) (testifying that some students are satisfied with captions of less accuracy than FCC requirements, such as a hard-of-hearing student using “good enough” captions to supplement audiovisual material).

<sup>430</sup> Accessibility Petitioners Class 3 Initial at 13.

‘reasonable effort’ and be available at no additional cost beyond the cost of the inaccessible version of the work.”<sup>431</sup> To effect this change, proponents request modifying the market check language to state that the inability to obtain an accessible work includes situations “where a copyright holder has not included an accessible version of a motion picture included with a textbook.”<sup>432</sup> DVD CCA, AACCS LA, and Joint Creators do not oppose clarification of the “reasonable efforts” requirement, provided any regulatory changes “adhere closely to the factual scenario presented.”<sup>433</sup>

The Register agrees that educational institutions should not need to contact publishers about creating a new, accessible work of a video that is provided with a textbook. But the Register reiterates that the existing regulatory language does not, and was not intended to, require such a situation.<sup>434</sup> As proponents note, the Acting Register in 2018 crafted the “reasonable efforts” requirement to “to take into account and further incentivize the marketplace offerings, including by requiring a reasonable market check for usable copies.”<sup>435</sup> This is why the 2018 Recommendation discussed the availability of audiovisual works on “mainstream platforms such as Netflix or Google Play,” and commercial listings on Amazon.<sup>436</sup> The market check requirement was described as “a reasonable search of available platforms” to determine whether an accessible version was already available on the market for purchase.<sup>437</sup> Such a requirement does not require specific outreach to a publisher to create a new accessible version of a work; it simply requires educational institutions to confirm that an accessible version of the work is not already available for sale. The narrow regulatory language offered by proponents to clarify this application of the market check requirement is consistent with the Register’s understanding of the rule, and the Register therefore recommends its inclusion.

Turning to the section 1201 statutory factors, the Register finds that they favor the modifications requested by proponents. As the Office noted in 2012 and 2018, “[g]enerally, public policy favors removing impediments to access for individuals with

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<sup>431</sup> *Id.* at 14.

<sup>432</sup> Accessibility Petitioners Class 3 Post-Hearing Resp. at 2 (May 14, 2021).

<sup>433</sup> Joint Creators Class 3 Opp’n at 4; *see also* DVD CCA & AACCS LA Class 3 Opp’n at 3 (“the proposed modifications seem to address real-life uncertainties that the Register should address”).

<sup>434</sup> *See* 2018 Recommendation at 109 (“By adding a ‘reasonable’ market check requirement, the Acting Register does not expect disability services professionals to scour the market, spend exorbitant fees, or wait months for an accessible version to arrive from a seller.”).

<sup>435</sup> *Id.* at 106.

<sup>436</sup> *Id.* at 105–06.

<sup>437</sup> *Id.* at 109–10.

disabilities.”<sup>438</sup> For the first three factors, providing additional flexibility and clarity to disability services providers so they can provide accessible motion pictures to students, faculty, and staff should increase the availability for use of inaccessible copyrighted works, including for educational uses, as well as uses such as criticism, comment, and research. For the fourth statutory factor, because the exemption will still require educational institutions to check if accessible versions are available in the market for a fair price before engaging in circumvention, the exemption encourages copyright owners to create accessible versions and benefit from added sales.

### 3. NTIA Comments

NTIA recommends modifying the current exemption to adopt each of proponents’ requested expansions, and it proposes adopting the regulatory language in proponents’ post-hearing letter.<sup>439</sup> NTIA agrees that it is appropriate to expand the class of exemption beneficiaries to include faculty and staff, “noting that the uses for staff and faculty who may [have] disabilities and who serve at the educational institutions will still be largely the same educational uses” as those for students.<sup>440</sup> NTIA supports permitting the reuse of remediated materials, subject to “reasonable limitations” such as Joint Creators’ suggestion that material be stored in a way that reasonably prevents unauthorized dissemination.<sup>441</sup> And NTIA supports modifying the exemption to permit proactive remediation and clarifying that the market check requirement is limited to works of “sufficient quality.”<sup>442</sup>

As explained below, the Register agrees that proponents have met their burden for their requested modifications but declines to recommend the specific regulatory language in proponents’ post-hearing letter.

### 4. Conclusion and Recommendation

Proponents have demonstrated that, absent modifications to the current audiovisual works exemption for accessibility, students, faculty, and staff at educational institutions will face adverse effects in their ability to make noninfringing use of copyrighted audiovisual works. The Register concludes that the requested adjustments will improve the operation of this existing exemption.

In implementing these changes, however, the Register has crafted her own regulatory language rather than adopting the language proposed by hearing participants in their

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<sup>438</sup> *Id.* at 104 (quoting 2012 Recommendation at 21) (citation omitted).

<sup>439</sup> NTIA Letter at 29, 33 & n.159.

<sup>440</sup> *Id.* at 30.

<sup>441</sup> *Id.* at 30–31.

<sup>442</sup> *Id.* at 32.

post-hearing letters.<sup>443</sup> The Register appreciates that the parties tried to reach agreement on how to implement this exemption, and some of those areas of agreement formed the basis for the new regulatory language.<sup>444</sup> But for the reasons explained below, aspects of both proposals were determined to be inappropriate for inclusion.

First, the Register has not included changes that would narrow the scope of the current exemption. For example, Joint Creators, DVD CCA, and AACCS LA proposed that remediation be permitted only for “educational uses,”<sup>445</sup> but the current regulations require only that circumvention be part of “a necessary accommodation” under disability law.<sup>446</sup> The current exemption language also does not require, as these parties proposed, that the addition of captions be done “promptly” after circumvention or that users implement specific technical protection measures for the remediated material.<sup>447</sup> Because the Register has already determined that petitioners have made a sufficient showing for renewal of the existing exemption,<sup>448</sup> she will not consider proposals that would have the effect of narrowing its reach.

In addition, while the Register has declined some limitations suggested by Joint Creators, DVD CCA, and AACCS LA, the proposed language substantially addresses the concerns targeted by those proposals. For example, while the Register declines to

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<sup>443</sup> See Accessibility Petitioners Class 3 Post-Hearing Resp. (May 14, 2021); Joint Creators et al. Class 3 Post-Hearing Resp. Attachment (May 14, 2021).

<sup>444</sup> For example, the Register substantially adopts the language the parties proposed to permit proactive remediation and address accessible material of poor quality. She has, however, slightly adjusted proponent’s requested market check language to avoid repetition and provide additional clarity. The Register’s recommended language reads: “including where a copyright holder has not provided an accessible version of a motion picture that was included with a textbook.”

<sup>445</sup> Joint Creators et al. Class 3 Post-Hearing Resp. Attachment (May 14, 2021) (proposed paragraph (i)(A)) (proposing that circumvention be done “to create an accessible version for educational uses for individuals with disabilities”).

<sup>446</sup> 37 C.F.R. § 201.40(b)(2)(i)(A). While educational institutions largely provide educational programming, they may offer programming that is arguably not educational, such as movie nights or performances for students who live on-campus. Whether an institution has a legal obligation to provide accessible material turns on the accessibility needs of students, faculty, and staff, not whether a particular activity the institution engages in is “educational.” For that reason, the exemption for this class ties circumvention to the “accessibility needs” of individuals with disabilities.

<sup>447</sup> See Joint Creators et al. Class 3 Post-Hearing Resp. Attachment (May 14, 2021) (proposed paragraphs (iv), (vii)).

<sup>448</sup> NPRM at 65,298 (“Based on the information provided in the renewal petition and the lack of opposition, the Office believes that the conditions that led to adoption of this exemption are likely to continue during the next triennial period.”).



modify the market check requirement to address “accessing” a version of sufficient quality, including by digital transmission, the market check already includes those concerns. As explained in 2018, the market check envisions “a reasonable search of available platforms such as . . . Netflix,” making clear that streaming services are within the scope of the requirement.<sup>449</sup> And although the Register declines to require the “prompt” creation of an accessible version after circumvention, the exemption does not permit educational institutions to circumvent a large body of works based on speculation about future needs. Circumvention must be done “for the purpose of adding captions and/or audio description . . . to create an accessible version,” and the educational institution must first “ha[ve] a reasonable belief that the motion picture will be used for a specific future activity of the institution.”

Accordingly, the Register recommends that the Librarian designate the following class:

**(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or via a digital transmission protected by a technological measure, where:**

**(A) Circumvention is undertaken by a disability services office or other unit of a kindergarten through twelfth-grade educational institution, college, or university engaged in and/or responsible for the provision of accessibility services for the purpose of adding captions and/or audio description to a motion picture to create an accessible version for students, faculty, or staff with disabilities;**

**(B) The educational institution unit in paragraph (b)(2)(i)(A) of this section has a reasonable belief that the motion picture will be used for a specific future activity of the institution and, after a reasonable effort, has determined that an accessible version of sufficient quality cannot be obtained at a fair market price or in a timely manner, including where a copyright holder has not provided an accessible version of a motion picture that was included with a textbook; and**

**(C) The accessible versions are provided to students or educators and stored by the educational institution in a manner intended to reasonably prevent unauthorized further dissemination of a work.**

**(ii) For purposes of paragraph (b)(2) of this section,**

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<sup>449</sup> 2018 Recommendation at 109–10.

- (A) “Audio description” means an oral narration that provides an accurate rendering of the motion picture;
- (B) “Accessible version of sufficient quality” means a version that in the reasonable judgment of the educational institution unit has captions and/or audio description that are sufficient to meet the accessibility needs of students, faculty, or staff with disabilities and are substantially free of errors that would materially interfere with those needs; and
- (C) Accessible materials created pursuant to this exemption and stored pursuant to paragraph (b)(2)(i)(C) of this section may be reused by the educational institution unit to meet the accessibility needs of students, faculty, or staff with disabilities pursuant to paragraphs (b)(2)(i)(A) and (B) of this section.

## *D. Proposed Class 4: Audiovisual Works—Livestream Recording*

### **1. Background**

#### **a. Summary of Proposed Exemption**

Petitioner FloSports, Inc. filed a petition requesting an exemption to:

enable a livestreaming service to provide individual viewers, via a virtual digital video recorder ('vDVR'), with access to a recording on a server for fair use purposes." Users obtaining access to the copyrighted works would be authenticated users of such a livestream service. Current technological barriers to circumvention . . . are the livestreaming technologies used, which are intended to result in only ephemeral recordings.<sup>450</sup>

Following this initial petition, FloSports did not submit legal arguments or evidence or participate in the public hearings in support of its petition. FSF filed comments generally supporting this exemption, but did not provide any evidence or substantive argument regarding the merits of the specific proposal.<sup>451</sup> Joint Creators filed brief comments opposing the proposed exemption as "fatally unclear" as well as likely infringing, and noting the lack of administrative record received in support of the exemption.<sup>452</sup>

#### **b. Overview of Issues**

FloSports generally describes the proposed class as covering livestreams of "sports and other competitive events" but elsewhere states that the relevant works are "audiovisual recordings of musical performances as identified in 17 U.S.C. 102(a)(6) and 17 U.S.C. 106(a)(5)," including "any and all works for which audiovisual recordings may be made and used as fair use" and "individual school performances."<sup>453</sup> FloSports states that it cannot access these works because "access to live stream audiovisual works is controlled by HTTP Live Streaming," and argues that this restricts a user's ability "to view the broadcast at a later time."<sup>454</sup> FSF, supporting FloSports, argues that these restrictions

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<sup>450</sup> FloSports Class 4 Pet. at 2.

<sup>451</sup> FSF Class 4 Initial at 2.

<sup>452</sup> Joint Creators Class 4 Opp'n at 2.

<sup>453</sup> FloSports Class 4 Pet. at 2.

<sup>454</sup> *Id.*

limit users' ability to make fair uses of the live stream content, such as "for the purpose of commentary or criticism."<sup>455</sup>

Joint Creators, in opposing the proposed class, argue that "it is very unlikely FloSport's uses of [the copyrighted works] would be lawful, even if only excerpts were used."<sup>456</sup>

## 2. Discussion

As noted in the NPRM, the petition in this class is insufficiently clear to meet the statutory requirement to identify "a particular class of copyrighted works."<sup>457</sup> Because it appeared from the petition that FloSports operates a commercial livestreaming service, the Office further requested "additional information regarding the intended noninfringing uses, including whether it would be appropriate to clarify that the petition is directed at facilitating educational, noncommercial uses."<sup>458</sup> Additionally, the Office asked for supporting evidence that the claimed adverse effects were attributable to TPMs and not simply to licensing markets.<sup>459</sup> The NPRM stated that "absent such clarification, the Office will decline further consideration of the petition."<sup>460</sup> FloSports did not file subsequent comments or participate in the public hearings.

## 3. NTIA Comments

NTIA agrees with the Register that an exemption for this class is not warranted because the record lacks "evidence or further details to support or clarify this petition."<sup>461</sup> NTIA notes that the Office sought further clarification for this petition in the NPRM, but proponents did not file any comments or participate in the hearings. Moreover, "NTIA concurs in the assessment that this petition is overly broad."<sup>462</sup> Though NTIA states that "in certain limited circumstances" livestream recording of "short clips may qualify as fair use,"<sup>463</sup> it concludes that in this proceeding "the petitioner did not write a clear and concise petition that the Librarian could act upon in this round and did not respond to requests for clarification."<sup>464</sup>

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<sup>455</sup> FSF Class 4 Initial at 2.

<sup>456</sup> Joint Creators Class 4 Opp'n at 2.

<sup>457</sup> NPRM at 65,304.

<sup>458</sup> *Id.*

<sup>459</sup> *Id.*

<sup>460</sup> *Id.*

<sup>461</sup> NTIA Letter at 35.

<sup>462</sup> *Id.* at 36.

<sup>463</sup> *Id.*

<sup>464</sup> *Id.*

#### 4. Conclusion and Recommendation

It remains unclear what types of works FloSports seeks to have included in Class 4. Similarly, the record contains no information to suggest that the class would be limited to non-infringing uses. The Office made clear in the NPRM that these ambiguities must be resolved before the Register could consider any recommendation. FloSports, however, filed no additional comments nor participated in the public hearings. In light of the unanswered questions regarding scope of the copyrighted works and uses to which the exemption would apply, the Register cannot recommend adoption of proposed Class 4.

*E. Proposed Class 5: Audiovisual Works—Preservation and Replacement*

**1. Background**

**a. Summary of Proposed Exemption**

Proposed Class 5 seeks to permit circumvention of technological protection measures on motion pictures (including television shows and videos) stored on DVDs or Blu-ray discs that are no longer reasonably available in the marketplace, to enable libraries, archives, and museums to make preservation and replacement copies of those works.<sup>465</sup> The exemption was proposed by LCA, which explains that the exemption is “necessitated by the deterioration of the discs in the collections of libraries, archives, and museums, for which replacements often are not available.”<sup>466</sup> LCA’s proposal would permit libraries, archives, and museums to create preservation copies of discs that are damaged or deteriorating, as well as to engage in “preemptive preservation” of discs that have not yet begun to deteriorate.<sup>467</sup>

In response to concerns raised by opponents that the initial proposal was overbroad, in its reply comments LCA proposed narrower regulatory language. The updated proposal specified that circumvention may not be carried out for commercial advantage, and the institution would have to make a reasonable effort to obtain an unused and undamaged replacement copy at a fair price prior to the circumvention.

LCA’s current proposed language is as follows:

(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. § 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, or on a Blu-ray disc protected by the Advanced Access Content System, solely for the purpose of lawful preservation of the motion picture, by an eligible library, archives, or museum, where:

(A) such activity is carried out without any purpose of direct or indirect commercial advantage;

(B) the eligible institution, after a reasonable effort, determined that an unused and undamaged replacement copy cannot be obtained at a fair price; and

(C) the preservation copy is not distributed or made available outside of the physical premises of the eligible library, archives, or museum.

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<sup>465</sup> LCA Class 5 Pet. at 2.

<sup>466</sup> LCA Class 5 Initial at 2.

<sup>467</sup> *Id.* at 2–3.

- (ii) For purposes of the exemption in paragraph (i) of this section, a library, archives, or museum is considered “eligible” if—
- (A) 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;
  - (B) The library, archives, or museum has a public service mission;
  - (C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;
  - (D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and
  - (E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph.<sup>468</sup>

Further, LCA notes that proposed classes 14(a) and 14(b) seek to expand the videogame and software preservation exemptions to include off-premises uses, and requests that the Class 5 exemption be expanded to include off-premises uses of the preserved motion pictures if the Register recommends granting those petitions.<sup>469</sup>

Additional comments in support of the petition were filed by Alisha Cunzio and FSF. Comments in opposition were filed by Joint Creators and DVD CCA and AACCS LA.

### **b. Overview of Issues**

Libraries, archives, and museums have large collections of motion pictures stored on DVDs and Blu-ray discs. The reflective aluminum data layer on those DVDs and Blu-ray discs can be damaged as a result of chemical reactions, light, and scratches.<sup>470</sup> Many factors lead to this damage, including user errors, improper storage, playing discs on laptops, and manufacturing or packaging errors.<sup>471</sup> As a result, a substantial percentage of the DVDs and Blu-ray discs in the institutions’ possession are currently damaged or deteriorating.<sup>472</sup> Proponents claim that in some cases, particularly for niche or art house

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<sup>468</sup> LCA Class 5 Reply at 6.

<sup>469</sup> LCA Class 5 Initial at 2.

<sup>470</sup> *Id.* at 4–5.

<sup>471</sup> *Id.* at 5–7.

<sup>472</sup> *See, e.g., id.* at 7 (Ms. Tanasse reporting that 30 percent of University of California, Berkeley’s DVD collection is damaged or deteriorating).

motion pictures, replacements are not reasonably available.<sup>473</sup> Proponents seek an exemption that would permit libraries, archives, and museums to circumvent TPMs on DVDs and Blu-ray discs for the purpose of preserving and creating replacement copies of the motion pictures stored on those media to enable researchers and students to access them.

Proponents argue that the proposed uses are likely non-infringing based on section 108 and fair use. They contend that the exemption builds on existing exemptions for the preservation of video games and software, in which the Register concluded that the creation of preservation and replacement copies by libraries, archives and museums was likely to be non-infringing when the copyrighted works were not reasonably available in the marketplace.<sup>474</sup> Opponents counter that the market for motion pictures differs considerably from the market for outdated video games and computer software. Joint Creators argue that “[r]elatively few people want to use old software programs outside of research uses, whereas back-catalogue motion pictures are frequently commercially viable, in high demand, and actively made available in a variety of formats by copyright owners through legitimate distribution channels.”<sup>475</sup> Additionally, according to DVD CCA and AACS LA, the “distribution strategies for motion pictures are dynamic and varied, from movie windowing among platforms, to custom licenses for varied uses and users, including libraries.”<sup>476</sup>

The proposed exemption would permit qualifying institutions to make physical or digital copies of the motion pictures and to make any digital copies available outside the premises of the institution. Proponents argue that it would be nonsensical to require preservation and replacement copies to be made on discs when those discs will themselves degrade over time.<sup>477</sup> Opponents are concerned that if digital copies are permitted, institutions will seek to “space-shift their collection of copies of films distributed on DVD and Blu-ray discs to computers, and subsequently launch online streaming services.”<sup>478</sup> They therefore argue that any preservation or replacement copies should be made on DVDs or Blu-ray discs rather than stored on computer servers.<sup>479</sup> If server copies are permitted, opponents insist that the copies should be accessible only on

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<sup>473</sup> Tr. at 603:15-19 (Apr. 19, 2021) (Band, LCA) (describing research value of “niche films, foreign films . . . T.V. programs that are dated” that will not be released again).

<sup>474</sup> LCA Class 5 Initial at 4.

<sup>475</sup> Joint Creators Class 5 Opp’n at 3.

<sup>476</sup> DVD CCA & AACS LA Class 5 Opp’n at 1.

<sup>477</sup> Tr. at 605:20–606:10, 607:4–15 (Apr. 19, 2021) (Band, LCA; Tanasse, University of California, Berkeley).

<sup>478</sup> DVD CCA & AACS LA Class 5 Opp’n at 21.

<sup>479</sup> *Id.* at 5–6.



the premises of the copying institution to avoid interfering with the existing marketplace for selling and streaming motion pictures.<sup>480</sup>

Proponents seek to allow qualifying institutions to engage in “preemptive preservation” of discs that have not yet begun to deteriorate.<sup>481</sup> Proponents reason that “the objective of preservation is better achieved if the preservation occurs before the copy of the motion picture is damaged or deteriorating.”<sup>482</sup> They fear it may not be possible to effectively capture a motion picture if the institution must wait until the discs are already damaged before it can make preservation or replacement copies. Opponents argue that preemptive preservation is simply space-shifting and unlikely to be non-infringing.<sup>483</sup> In their view, section 108 does not authorize preemptive preservation, and such activity is unlikely to be fair use because it will interfere with the existing and potential market for motion pictures.<sup>484</sup>

Finally, opponents argue that the numerous services offering downloadable or streamed copies of motion pictures make it unlikely that many motion pictures will become inaccessible to researchers and students, and therefore no exemption is warranted.<sup>485</sup> In their view, should an exemption nevertheless be granted, any market check requirement should include determination of whether unused and undamaged DVDs or Blu-ray discs are available for purchase, as well as whether the motion picture at issue is available for streaming through a licensed source.<sup>486</sup>

For the reasons discussed below, the Register recommends that the proposed exemption be granted in part.

## 2. Discussion

### a. Works Protected by Copyright

This class involves the use of motion pictures contained on DVDs or Blu-ray discs. There is no dispute that at least some of these works are protected by copyright,<sup>487</sup> and

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<sup>480</sup> Joint Creators Class 5 Opp’n at 11–12.

<sup>481</sup> LCA Class 5 Initial at 2–3.

<sup>482</sup> LCA Class 5 Reply at 3.

<sup>483</sup> DVD CCA & AACCS LA Class 5 Opp’n at 3–4.

<sup>484</sup> Joint Creators Class 5 Opp’n at 4, 8.

<sup>485</sup> *Id.* at 3.

<sup>486</sup> *Id.* at 11.

<sup>487</sup> See 2015 Recommendation at 83 (“copyrighted motion pictures are not widely available in formats not subject to technological protections”).

therefore proponents have successfully established that the relevant TPMs control access to copyrightable works.

### **b. Asserted Noninfringing Uses**

Proponents advance two bases for finding their proposed activities to be noninfringing: (1) the section 108 exceptions for library and archival preservation and replacement copies, and (2) the fair use doctrine.

#### *i. Section 108*

Section 108(c) permits an eligible library or archives to make three copies of a published work solely for the purpose of replacing a copy that is damaged, deteriorating, lost, or stolen, “or if the existing format in which the work is stored has become obsolete.”<sup>488</sup> To qualify for this exception, the institution must have made a reasonable effort to identify an unused replacement that can be obtained at a fair price.<sup>489</sup> If the library or archives makes a replacement copy in digital format, it may not distribute or make the digital copy available to the public outside its premises.<sup>490</sup>

Proponents contend that certain of the activities for which they seek an exemption are within the scope of section 108(c). The proposed exemptions adopts many aspects of section 108(c), including permitting eligible institutions to make up to three copies of works that are damaged or deteriorating, and requiring eligible institutions to make a reasonable effort to determine that no unused and undamaged replacement copy can be obtained at a fair price. The Register thus agrees that insofar as proponents’ request would authorize libraries and archives to make up to three copies of a motion picture for on-premises replacement purposes from a disc that is damaged or deteriorating, after a market search for unused replacement copies, the uses likely are noninfringing under section 108(c).

Section 108 does not, however, authorize all of the exemption’s proposed uses. First, the exemption seeks to allow the creation of preservation copies, in addition to replacement copies, of the copyrighted works. Section 108(b) authorizes libraries and archives to make three preservation copies of unpublished works, but section 108 contains no provision for creating preservation copies of published works such as the motion pictures at issue here. Second, even with respect to replacement copies, section 108(c) on its own does not allow libraries and archives to make more than three copies.<sup>491</sup> As noted in the Register’s 2018 Recommendation, the Copyright Office has a “longstanding

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<sup>488</sup> 17 U.S.C. § 108(c).

<sup>489</sup> *Id.* § 108(c)(1).

<sup>490</sup> *Id.* § 108(c)(2).

<sup>491</sup> LCA Class 5 Initial at 3.

view that the three-copy limit does not adequately accommodate the requirements of modern digital preservation practices.”<sup>492</sup> Finally, the exemption seeks authorization for libraries and archives to preemptively create preservation and replacement copies of discs that are not yet damaged or deteriorated and for institutions to be permitted to provide off-premises access to digital replacement copies of the motion pictures. Each of those proposals goes beyond what is authorized by section 108(c).

Because not all of the proposed uses are protected by section 108, proponents must demonstrate that their additional proposed activities are likely noninfringing on separate legal grounds.

*ii. Fair Use*

*1) Applicability of Fair Use*

The Register first addresses a threshold contention by opponents that preservation uses should be analyzed only pursuant to section 108 and that the Register therefore should not look to fair use as a basis for expanding the exemption beyond the limitations of section 108.<sup>493</sup>

The Acting Register rejected this argument in her analysis of the 2018 proposed exemption to permit circumvention for the purpose of preserving software and software-dependent materials.<sup>494</sup> The Acting Register detailed the Office’s long history in finding that certain preservation activities beyond the scope of section 108 can be noninfringing fair uses.<sup>495</sup> Similarly, in her 2015 Recommendations, the Register noted that section 108 “provides useful and important guidance as to Congress’s intent regarding the nature and scope of legitimate preservation activities,” but nonetheless analyzed the proposed exemption for video game preservation under fair use.<sup>496</sup> Likewise, here the Register will consider proponents’ arguments that their activities are likely fair uses.

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<sup>492</sup> 2018 Recommendation at 237.

<sup>493</sup> DVD CCA & AACS LA Class 5 Opp’n at 4 (“preservation of a copy of a movie distributed on optical disc is limited to the statutory framework provided by Section 108.”); Joint Creators Class 5 Opp’n at 4–5 (encouraging Office to use only Section 108 as a guideline to assess whether the preservation uses at issue are noninfringing).

<sup>494</sup> 2018 Recommendation at 238–40.

<sup>495</sup> *Id.* at 239–40 (citing 2015 Recommendation at 169, 234–37, 300–03, 368–71; 2006 Recommendation at 29–30; 2003 Recommendation at 54–55).

<sup>496</sup> 2015 Recommendation at 342.

2) *Fair Use Analysis*

As discussed above, the proposed uses not protected under section 108 are the copying published works for the purpose of preservation, making more than three copies of a work for use as a replacement copy for one that is damaged or deteriorating, making copies from discs that are not damaged or deteriorating, and permitting off-premises use of digital replacement copies.

With respect to the first fair use factor, the purpose and character of the use, proponents rely heavily on the Office’s previous findings that reproduction by libraries, archives, and museums for the purpose of preservation is a “favored purpose.”<sup>497</sup> The Office reached that conclusion based on the legislative history of the Copyright Act and case law. A 1976 House Report accompanying the Act indicated that “the making of duplicate copies for purposes of archival preservation certainly falls within the scope of ‘fair use.’”<sup>498</sup> Courts have also recognized that copying for preservation purposes is of benefit to the public.<sup>499</sup>

Opponents assert that creating preservation and replacement copies of motion pictures is not transformative because it allows patrons to view the original works in their entirety without adding any new material that has a different purpose or character.<sup>500</sup> DVD CCA and AACCS LA characterize proponents’ claim that the purpose of the reproduction is for preservation as “pretext,” and argue that the real purpose is to create server copies, which they believe amounts to non-transformative space-shifting.<sup>501</sup> DVD CCA and AACCS LA argue that the not-for-profit nature of the libraries does not override the character and use of this space-shifting because the libraries stand to profit from the use of the motion pictures without paying the customary price.<sup>502</sup> Similarly, Joint

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<sup>497</sup> 2018 Recommendation at 242.

<sup>498</sup> H.R. REP. NO. 94-1476, at 73, reprinted in 1976 U.S.C.C.A.N. at 5687.

<sup>499</sup> See, e.g., *Sudeman v. Seajay Soc’y, Inc.*, 142 F.3d 194, 203 (4th Cir. 1998); *Authors Guild, Inc. v. Google Inc.*, 954 F. Supp. 2d 282, 293 (S.D.N.Y. 2013).

<sup>500</sup> DVD CCA & AACCS LA Class 5 Opp’n at 9–11 (citing *Disney Enterprises, Inc. v. VidAngel, Inc.*, 869 F.3d 848 (9th Cir. 2017) and *Kelly v. Arriba*, 336 F.3d 811 (9th Cir. 2003)); Joint Creators Class 5 Opp’n at 7 (“[t]he purpose and character of replacement copies is not transformative: the institutions would simply create new copies of works and provide access to them to patrons who would view them in their entirety, all without payment to copyright owners.”).

<sup>501</sup> DVD CCA & AACCS LA Class 5 Opp’n at 9.

<sup>502</sup> *Id.* at 11, 13 (citing *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 562 (1985)).

Creators argue that copying by libraries is commercial even if consumers do not pay to view the motion pictures because “it supplants marketplace transactions.”<sup>503</sup>

With respect to creating preservation copies, even if the reproduction is not considered transformative, the Register agrees with proponents that the legislative history of section 107 and case law suggest that library and archival preservation is a favored purpose under fair use analysis. Congress also recognized the importance of preservation when enacting section 108(b). The proposed exemption includes the key conditions of sections 108(a) and (b) for preservation copies, including requiring the institution to meet certain eligibility requirements and to have a copy of the work in its possession, and prohibiting the use from being made for purposes of commercial advantage.<sup>504</sup> An institution’s creation of a copy for strictly preservation purposes is also not commercial. Thus, the first factor weighs in favor of fair use for the creation of preservation copies of published works.

This conclusion is not altered by the fact that an eligible institution would be permitted to store the replacement copies on a computer server, and would not be limited to keeping them on new DVD or Blu-ray discs. Opponents argue that “the fact that one library bought one copy of a DVD twenty years ago certainly does not entitle the library to copy and make that movie available in the manner and format it sees fit, to its patrons and potentially the entire world, in perpetuity, without permission from or compensation to the copyright owner.”<sup>505</sup> As noted, however, the Office has previously taken into account the legitimate interest that libraries, archives, and museums have in preserving materials in a manner consistent with current best practices. Here, proponents note that it would make little sense to require libraries to copy motion pictures onto discs when those discs will degrade over time and will not reliably and effectively preserve the motion pictures.<sup>506</sup> Moreover, the creation of a server copy under the proposed exemption is narrowly tailored to situations in which reproduction is necessary for preservation and replacement because the disc is damaged or deteriorating and copies of the motion picture are not commercially available. The

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<sup>503</sup> Joint Creators Class 5 Opp’n at 7 (citing *Wall Data Inc. v. Los Angeles Cty. Sheriff’s Dep’t*, 447 F.3d 769, 781–82 (9th Cir. 2006) (“We believe that ‘widespread use’ of hard drive imaging in excess of one’s licenses could seriously impact the market for Wall Data’s product.”); *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1017 (9th Cir. 2001) (“Having digital downloads available for free on the Napster system necessarily harms the copyright holders’ attempts to charge for the same downloads.”)).

<sup>504</sup> See 17 U.S.C. § 108(a), (b).

<sup>505</sup> Joint Creators Class 5 Opp’n at 8.

<sup>506</sup> Tr. at 605:20–606:10, 607:04–15 (Apr. 19, 2021) (Band, LCA; Tanasse, University of California, Berkeley).

purpose of the copies is to serve as a replacement for discs that are damaged or deteriorating, not merely to create a copy in a preferred format.

The same cannot be said for preemptive preservation, which would allow institutions to make replacement copies even where the discs are not currently damaged or deteriorating. Neither the legislative history of fair use nor the text of section 108 indicates that the replacement of non-damaged copies would be non-infringing. Proponents have cited no authority for the proposition that making replacement copies of undamaged works is fair use. Making copies of discs because they might be damaged in the future is purely speculative and does not serve a current purpose that benefits the public. In this sense, preemptive preservation is essentially a type of format-shifting, which the Office has repeatedly found unlikely to be a fair use.<sup>507</sup> The Register accordingly finds that the first fair use factor weighs against fair use with respect to making replacement copies of works that are not damaged or deteriorating.

The Register concludes that the second fair use factor, the nature of the copyrighted work, weighs against a finding of fair use. It is well established that motion pictures are creative and thus at the “core” of copyright’s protective purposes.<sup>508</sup> This factor, however, is of limited significance in the analysis of this class.<sup>509</sup>

Under the third fair use factor, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, the Register finds that copying the entire work is reasonable in light of the purpose of the copying: creating preservation and replacement copies. An incomplete preservation or replacement copy would not serve that purpose effectively.<sup>510</sup> Courts have recognized that reproducing a work in its entirety does not necessarily weigh against a finding of fair use when such copying is necessary to achieve a legitimate purpose.<sup>511</sup>

With respect to the fourth fair use factor, the Register finds it significant that the proposed exemption requires institutions to conduct a market check to determine if

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<sup>507</sup> See 2018 Recommendation at 121; 2015 Recommendation at 122–24.

<sup>508</sup> See *Harper & Row v. Nation Enterprises*, 471 U.S. 539, 563 (1985) (“The law generally recognizes a greater need to disseminate factual works than works of fiction or fantasy”); 2018 Recommendation at 45; 2015 Recommendation at 70; 2012 Recommendation at 128.

<sup>509</sup> 2018 Recommendation at 243.

<sup>510</sup> *Monsarrat v. Newman*, 514 F. Supp 3d 386, 392 (D. Mass. Jan. 21, 2021) (“a full reproduction is consistent with historical and preservationist purposes”).

<sup>511</sup> See, e.g., *Swatch Grp. Mgmt. Servs. Ltd. v. Bloomberg L.P.*, 756 F.3d 73, 90 (2d Cir. 2014) (finding third factor was neutral when entire work was copied); *Núñez v. Caribbean Int’l News Corp.*, 235 F.3d 18, 24 (1st Cir. 2000) (holding copying of entire picture was “of little consequence” to court’s analysis).

unused and undamaged copies of the motion picture are available at a reasonable price. The parties disagree, however, as to whether the market check provision should be limited to physical copies in the marketplace, or should require institutions to also determine that the work is not reasonably available through a streaming service. Opponents contend that “[f]or the vast majority of titles, there is little to no risk that researchers will be unable to obtain access for purposes of study, comment or criticism,” because many motion pictures “remain available through streaming services, download services, and on-demand cable and satellite services.”<sup>512</sup> Opponents express concern that the proposed use of the works would interfere with existing and potential markets for licensing motion pictures, including licenses specifically designed for public and academic libraries.<sup>513</sup> They argue that if a motion picture is accessible through a streaming service, institutions should not be permitted to make preservation or replacement copies.

LCA maintains that a library should be permitted to make a copy of a motion picture in its collection “even if that title is available on a streaming service at that particular point in time.”<sup>514</sup> It explains that a motion picture may be available for streaming at a certain time but may be removed by the service at a later date.<sup>515</sup> Even if a motion picture is available through a streaming service, LCA argues that supplementary materials included on the disc may not be available when streaming.<sup>516</sup> LCA also contends that patrons cannot make clips from the streamed version for use in presentations commenting on or criticizing the motion picture.<sup>517</sup>

The Register concludes that proponents have not demonstrated that a motion picture that is available for streaming or digital download is not an adequate replacement copy. Streaming services are not unique in changing their offerings periodically. At the point at which the institution is unable to stream the motion picture, it will have satisfied the market check requirement. Though bonus content may not be streamed with the main motion picture, that bonus content may be available on the market. Indeed, opponents demonstrated that discs containing all of the bonus materials LCA identified are

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<sup>512</sup> Joint Creators Class 5 Opp’n at 8–9 & Appendix (providing list of services).

<sup>513</sup> Joint Creators Class 5 Opp’n at 8; DVD CCA & AACCS LA Class 5 Opp’n at 17–19. *See also* Tr. at 637:19–40:22 (Apr. 19, 2021) (Evjen, Swank) (describing Swank Digital Campus offerings); Tr. at 641:15–44:7 (Apr. 19, 2021) (Taylor, DVD CCA) (presentation regarding offerings from Hoopla and Kanopy).

<sup>514</sup> LCA Class 5 Reply at 4.

<sup>515</sup> *Id.*

<sup>516</sup> LCA Class 5 Initial at 8–9.

<sup>517</sup> Tr. at 631:03–09 (Apr. 19, 2021) (McCleskey, Hofstra U.); Tr. at 648:12–22 (Apr. 19, 2021) (Band, LCA).

available for purchase or via a streaming service.<sup>518</sup> In any event, bonus materials on a disc are distinct motion picture works from the main movie on the disc, and if they are not available on the market, they would be covered by the exemption. And an existing exemption permits faculty and students who seek to comment on or criticize a motion picture to circumvent TPMs on motion pictures made available via a digital transmission.<sup>519</sup> The Register concludes that the market check requirement should encompass streaming services to minimize disruption to the existing marketplace through which motion pictures are made available to students and researchers.

While the reasonableness of a market check is a fact-specific matter, ordinarily an institution should search at least one major seller of physical product, such as Amazon.com, and at least one major search engine, to determine whether the motion picture is being offered for sale in downloadable form or as a new physical product. The institution also should determine whether the motion picture is available for streaming to libraries, archives, and museums through a major streaming service, such as Netflix, Hulu, Apple TV, HBO Max, or Amazon Prime. This inquiry may take into account the fact that some major streaming services require that content be accessed for personal use only or provide other restrictions that would prohibit libraries, archives, and museums from using those services to make motion pictures available to their patrons.<sup>520</sup> The institution should also search streaming services that focus on educational streaming, such as Swank – Digital Campus, Hoopla, Kanopy, Alexander Street, Passion River, Roco Films Educational, and Collective Eye Films.

If the institution circumvents only after conducting this type of market check, the use is unlikely to interfere with the current or potential value of or market for the original. Moreover, the prohibition on institutions making copies of the motion pictures available outside their premises makes it less likely that copies made pursuant to this exemption would function as substitutes for licensed versions of the motion pictures that can be streamed in other locations. Subject to these conditions, the Register concludes that the fourth factor weighs in favor of fair use.

Balancing the fair use factors, the Register finds that proponents have met their burden in demonstrating that the proposed exemption is likely to be a fair use with respect to making copies of DVDs or Blu-ray discs for the purpose of preservation and replacement copies of DVDs or Blu-ray discs that are damaged or deteriorated. The

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<sup>518</sup> DVD CCA & AACCS LA Class 5 Opp'n at 27–28; Joint Creators Class 5 Opp'n at 8–9.

<sup>519</sup> See 37 C.F.R. § 201.40(b)(1)(ii).

<sup>520</sup> LCA Class 5 Reply at 3–4.



Register finds that proponents have not met their burden in demonstrating that copying DVDs or Blu-ray discs that are not damaged or deteriorated is likely to be fair use.

### 3) *Off-Premises Access*

As noted, LCA's proposed exemption language would not permit access to the replacement copies outside the premises of an eligible institution. In its comments, however, LCA notes that the Office is separately considering a request under Class 14 to expand the current software and videogame preservation exemptions to permit offsite access. LCA requests that the Class 5 exemption be similarly expanded to include off-premises uses if the Register recommends granting the expansion in Class 14.<sup>521</sup>

The Register must decline LCA's request to consider the arguments and evidence submitted as part of Class 14 in the context of this class. The two proposals involve contexts that differ in significant ways. As discussed above, the market for out-of-date computer software differs considerably from the market for old or limited-release motion pictures. Proponents have made no particularized showing regarding a need for off-premises use of motion pictures by researchers, or addressed how providing such access could affect the market for licensed access to motion pictures. LCA argues that closures of physical buildings during the COVID-19 pandemic demonstrates the need for patrons to be able to access works from outside the walls of a qualifying institution.<sup>522</sup> It also maintains that "off-premises access could be afforded to authorized students and researchers without the motion pictures being available to the general public for entertainment purposes," but does not provide specifics as to how this could be accomplished.<sup>523</sup> Proponents have, therefore, failed to meet their burden of producing evidence from which the Register could evaluate whether off-premises use would be a fair use for purposes of an exemption.<sup>524</sup>

### c. **Causation**

DVD CCA and AACS LA assert that CSS is not typically used on a DVD unless the creator expects to sell at least 5,000 copies of the disc, so that it is "highly unlikely" that many of the motion pictures identified by proponents as no longer available in the marketplace are protected by CSS.<sup>525</sup> However, DVD CCA and AACS LA failed to cite any evidence in support of this proposition in their opposition comments or at the

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<sup>521</sup> LCA Class 5 Initial at 2.

<sup>522</sup> LCA Class 5 Reply at 2.

<sup>523</sup> *Id.*

<sup>524</sup> See Section 1201 Report at 110 (explaining that proponents have the burden of production).

<sup>525</sup> DVD CCA & AACS LA Class 5 Opp'n at 24.

hearing.<sup>526</sup> The Register, therefore, finds that the proponents have satisfied their burden of demonstrating that the prohibition on circumvention is the cause of a number of adverse effects. Without the prohibition on circumvention, libraries and archives would be able to create preservation and replacement copies of damaged or deteriorated motion pictures contained on discs that are no longer available in the commercial marketplace.

#### **d. Asserted Adverse Effects**

Because this proposed exemption is limited to circumvention for non-commercial preservation and replacement purposes, and the parties' arguments under the first three section 1201 statutory factors address substantially overlapping issues, the Register considers these factors together.

Proponents argue that circumvention is necessary because disc rot and manufacturing issues have damaged many discs containing motion pictures. If the discs are not usable, they contend, and other usable copies of those motion pictures are not reasonably available in the marketplace, the copyrighted works will no longer be available to researchers, educators and students.<sup>527</sup> They argue that "[i]f motion pictures are not properly preserved by cultural heritage institutions, the loss would be incalculable."<sup>528</sup> In their view, permitting preservation and replacement copies to be made under certain circumstances would increase the availability of the copyrighted works for non-commercial archival, preservation and educational purposes, including criticism, comment, teaching, scholarship, and research.<sup>529</sup>

Opponents contend that copyright owners rely on TPMs when they make motion pictures available on DVD and Blu-ray discs at low price points, which increases the general availability of the motion pictures for criticism, comment, reporting, teaching, scholarship and research. If libraries and archives can circumvent the TPMs, they argue, over time copyright owners may not offer motion pictures in as many formats or at low prices.<sup>530</sup>

The Register finds that, on balance, these statutory factors favor the requested exemption. Proponents have provided substantial evidence that granting the exemption would benefit preservation, education, and scholarship by making available motion pictures that might otherwise be lost to history. The ability of researchers to view

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<sup>526</sup> *Id.*; Tr. at 604:24–05:05 (Apr. 19, 2021) (Rubel, U.S. Copyright Office; Taylor, DVD CCA).

<sup>527</sup> LCA Class 5 Initial at 10.

<sup>528</sup> *Id.*

<sup>529</sup> *Id.*

<sup>530</sup> Joint Creators Class 5 Opp'n at 10–11.

motion pictures no longer available in the marketplace is likely to promote commentary and teaching in a variety of disciplines. The exemption's limitation to works that are not available in the marketplace makes it unlikely to affect copyright owners' decisions to offer motion pictures on DVD or Blu-ray discs or to change their pricing models.

With respect to the fourth statutory criterion, the effect of circumvention of on the market for or value of copyrighted works, for the reasons discussed above in reference to the fourth fair use factor, the Register finds that granting the proposed exemption is unlikely to adversely affect the market for or value of the motion pictures in the proposed class. DVD CCA and AACS LA argue that the proposed uses would constitute a "profound setback" for businesses that make motion pictures available under licensing arrangements.<sup>531</sup> Joint Creators posit that because those licenses would become less valuable, fewer services would offer licenses to educational and nonprofit institutions, and copyright owners would have less incentive to pursue new business models through which to make their works available.<sup>532</sup> It seems implausible, however, that enabling libraries, archives, and museums that already own physical copies of the motion pictures to preserve and replace damaged or deteriorated discs will significantly affect the licensing market. Additionally, the limitation of the class to motion pictures that are no longer commercially available would seem to minimize the risk that the exemption would interfere with existing or potential licensing arrangements. In fact, the exemption's requirement that institutions perform a reasonable search to ensure that the motion picture is not commercially available before circumvention may incentivize copyright owners to make their works more commercially available.

The Register does not find any additional statutory factors relevant to the asserted adverse effects in this proposed class. Based on the foregoing, the Register finds that libraries, museums, and archives are adversely affected by the prohibition on circumvention in their ability to engage in noninfringing preservation and replacement activities, or are likely to be so affected during the next three years.

### 3. NTIA Comments

NTIA agrees with the Register that an exemption is warranted, though it would adopt additional aspects of the proposal requested by proponents. First, NTIA believes that "[i]t makes sense for libraries, archives, and museums to want to proactively respond to the problem if they can do so" before data is lost to disc rot and cannot be retrieved.<sup>533</sup> Although NITA recognizes that section 108 does not cover copying of works that are not

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<sup>531</sup> DVD CCA & AACS LA Class 5 Opp'n at 30.

<sup>532</sup> Joint Creators Class 5 Opp'n at 10–11.

<sup>533</sup> NTIA Letter at 39 (citing LCA Class 5 Reply at 3).

currently damaged or deteriorating, it believes that preventative preservation “would seem to be within the scope of fair use, at least for archival preservation.”<sup>534</sup>

NTIA also does not believe that the availability of a work on a streaming service should preclude copying of a motion picture if an unused and undamaged replacement is not available for a reasonable price because it is not persuaded that the availability of motion pictures on streaming services “solves the problem at hand.”<sup>535</sup> It notes that none of the streaming services carries all or a majority of the motion pictures at issue, and many do not provide licenses to libraries, museums, or archives.<sup>536</sup>

NTIA encourages the Register to evaluate the request for institutions to provide off-premises access to the preserved motion pictures, noting that the COVID-19 pandemic has highlighted the need for such access. Although NTIA “fully recognizes that the record presented here could have been more robust,”<sup>537</sup> it suggests that the Register consider evidence proponents offered in connection with Class 14 and evaluate whether the limitations on remote access proposed in that class would be sufficient to mitigate market harm here.<sup>538</sup>

For the reasons discussed above, the Register concludes that the current record does not establish that preventative preservation and off-premises access to the preserved motion pictures are warranted, and that copying of motion pictures that are available on a streaming service is not likely to be fair use.

#### 4. Conclusion and Recommendation

After thorough consideration, the Office recommends adopting an exemption that would allow copying of damaged or deteriorated DVDs and Blu-ray discs for the purpose of preservation and creating replacement copies for the reasons discussed above. The Register recommends that the Librarian designate the following class:

**(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. § 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, or on a Blu-ray disc protected by the Advanced Access Content System, solely for the purpose of lawful preservation or the creation of a replacement copy of the motion picture, by an eligible library, archives, or museum, where:**

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<sup>534</sup> *Id.* at 41.

<sup>535</sup> *Id.* at 42.

<sup>536</sup> *Id.*

<sup>537</sup> *Id.* at 43.

<sup>538</sup> *Id.* at 44.

(A) Such activity is carried out without any purpose of direct or indirect commercial advantage;

(B) The DVD or Blu-ray disc is damaged or deteriorating;

(C) The eligible institution, after a reasonable effort, has determined that an unused and undamaged replacement copy cannot be obtained at a fair price and that no streaming service, download service, or on-demand cable and satellite service makes the motion picture available to libraries, archives, and museums at a fair price; and

(D) The preservation or replacement copies are not distributed or made available outside of the physical premises of the eligible library, archives, or museum.

(ii) For purposes of paragraph (b)(3)(i) of this section, a library, archives, or museum is considered “eligible” if—

(A) 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;

(B) The library, archives, or museum has a public service mission;

(C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

(E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by paragraph (b)(3)(i) of this section.

## *F. Proposed Class 6: Audiovisual Works—Space-Shifting*

### **1. Background**

#### **a. Summary of Proposed Exemption**

Petitioner SolaByte Corp. seeks an exemption available to “[t]he legitimate owner of [a] DVD or blu-ray disc and licensee of the content” for the purpose of “making a usable personal back up copy” of “movies, TV shows, music video[s], [and] other copyrighted works.”<sup>539</sup> The proposed class “would apply to any title of audio/video works 5 years after its public release date.”<sup>540</sup> Following its initial petition, SolaByte did not submit legal arguments or evidence or participate in the public hearings. FSF filed brief comments generally supporting this exemption, but did not provide any evidence or substantive argument regarding the merits of the specific proposal.<sup>541</sup> Joint Creators, DVD CCA and AACCS LA, and the Software and Information Industry Association (“SIIA”) each filed comments opposing the proposed exemption on substantive legal grounds as well as procedural objections given the lack of record.<sup>542</sup>

#### **b. Overview of Issues**

The Register has repeatedly considered proposed exemptions for purposes of space-shifting or format-shifting, and each time the Register has declined to recommend, and the Librarian has rejected, the proposed classes. As noted in the Acting Register’s 2018 Recommendation:

In 2015, the Register recognized the consumer and policy appeal of the proposed exemptions, as consumers who purchase a movie in one format can experience frustration when they are unable to watch that film in a different format on another device. She noted, however, that “the section 1201 rulemaking is a carefully tailored proceeding that is designed to incorporate, not replace, the determinations of Congress and the courts.” After careful review, the Register did “not find any fair use precedent that sanctions broad space-shifting or format

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<sup>539</sup> SolaByte Class 6 Pet. at 2.

<sup>540</sup> *Id.*

<sup>541</sup> FSF Class 6 Initial at 2.

<sup>542</sup> DVD CCA & AACCS LA Class 6 Opp’n (stating that SolaByte “has not filed any initial comments in support of the petition, nor, more importantly, has it provided any legal or factual basis for the Register to consider the request”); Joint Creators Class 6 Opp’n at 2 (stating that “[t]he scope of this class is unclear, and SolaByte did not file a long-form comment to support its petition or explain its scope”); SIIA Class 6 Opp’n (stating that “[t]he comments filed in support of an exemption for space shifting do not provide an adequate factual basis or substantive legal arguments to support . . . the exception being proposed”).

shifting.” Since then, the Ninth Circuit, in *Disney Enterprises, Inc. v. VidAngel, Inc.*, rejected the contention that space-shifting is a “paradigmatic example of fair use,” noting that “[t]he reported decisions unanimously reject the view that space-shifting is fair use under § 107.” In doing so, the court credited the Register’s conclusion in the last rulemaking that “the law of fair use, as it stands today, does not sanction broad-based space-shifting or format-shifting.”<sup>543</sup>

During the 2018 proceeding, SolaByte filed a one-page reply comment in support of a petition for an exemption to allow so-called “non-reproductive” space-shifting, including for commercial purposes.<sup>544</sup> At the public hearing, SolaByte said that it sought to use the proposed exemption to allow users to stream master cloud copies of audiovisual works to their personal device after SolaByte authenticated that the user had the same content on disc media.<sup>545</sup>

SolaByte’s petition in this proceeding makes no mention of whether it still seeks to provide—or already is providing—a commercial service that provides “replacements” for users’ disc copies.<sup>546</sup> But it says the exemption is needed because, among related concerns, “[i]ncomplete licensing of titles by internet media service providers requires the owner of the disc to subscribe to multiple service providers at high personal cost to cover a fraction of their library titles,” and “[c]ontent owners are unresponsive to licensing requests to enable back up services and/or have instituted a regime of up front payments that make providing the service economically infeasible.”<sup>547</sup> Relatedly, FSF argues that “[a]ny medium can degrade or fail over time. Devices that can access the work can likewise degrade, fail, or become no longer available. . . . [U]sers should have the right to transfer the works they own onto other media or devices in order to ensure continued access.”<sup>548</sup>

## 2. Discussion

In the 2006, 2012, 2015, and 2018 rulemakings, the Librarian found, upon the Register’s recommendation, that the proponents had failed to establish that space-shifting is a noninfringing use. In the NPRM in this proceeding, the Office asked SolaByte and any

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<sup>543</sup> 2018 Recommendation at 121 (internal footnotes omitted).

<sup>544</sup> 2018 SolaByte Class 3 Reply; *see* 2018 OmniQ Class 3 Pet. at 1.

<sup>545</sup> Tr. at 8:08–14:08, Hearing Ex. 3-A at 5 (Apr. 11, 2018) (Chatfield, SolaByte); Tr. at 10:18–12:03 (Apr. 11, 2018) (Chatfield, SolaByte).

<sup>546</sup> Tr. at 8:08–14:08, Hearing Ex. 3-A at 6 (Apr. 11, 2018) (Chatfield, SolaByte) (“We ask Librarian to authorize an exemption to allow the creation of replacement content to support this service[.]”).

<sup>547</sup> SolaByte Class 6 Petition at 2.

<sup>548</sup> FSF Class 6 Initial at 2.

proponents of Class 6 “whether, in the past three years, there has been any change in the legal or factual circumstances bearing upon that issue.”<sup>549</sup> SolaByte submitted no comments and did not request to participate in the public hearings. FSF is the only proponent to file subsequent comments, but it did not provide legal arguments. As noted in the NPRM, whether “users should have the right to transfer the works they own onto other media or devices” is a question for Congress to answer.<sup>550</sup> Moreover, it is unclear whether SolaByte still seeks to utilize such an exemption to provide a cloud-based commercial service that would go beyond individual users making a personal copy, a proposed use that was rejected in 2018. Nothing in the current record warrants a departure from that conclusion.

### 3. NTIA Comments

NTIA agrees with the Register that an exemption for this class is not warranted. It notes that “[t]he Librarian rejected similar proposals in the 2006, 2012, 2015, and 2018 rulemakings, finding that the proponents had failed to clearly establish under applicable law that space-shifting for this purpose is a noninfringing use.”<sup>551</sup> NTIA also notes that despite the Office requesting in the NPRM that petitioners provide evidence of changed legal or factual circumstances, the petitioner neither filed comments nor participated in the hearings. NTIA therefore concludes that “[w]ithout evidence or further details or legal or policy discussion to support or clarify this petition, [it] cannot support this petition as presented.”<sup>552</sup>

### 4. Conclusion and Recommendation

The factual and legal record supporting an exemption for space-shifting and format-shifting remains insufficiently developed. As was true in 2018, there is no legal support for treating these as noninfringing uses. Moreover, it remains unclear from the record that TPMs are preventing users from such uses. Accordingly, the Register cannot recommend adoption of proposed Class 6.

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<sup>549</sup> NPRM at 65305.

<sup>550</sup> FSF Class 6 Initial at 2.

<sup>551</sup> NTIA Letter at 47.

<sup>552</sup> *Id.* at 48.



*G. Proposed Class 7(a) and 7(b): Motion Pictures and Literary Works—  
Text and Data Mining*

**1. Background**

**a. Summary of Proposed Exemptions**

Proposed Classes 7(a) and 7(b) seek to permit circumvention of technological protection measures used on motion pictures stored on DVDs or Blu-ray discs and on literary works to enable researchers to perform text and data mining (“TDM”) for the purpose of scholarly research and teaching. Authors Alliance, AAUP, and LCA filed petitions that would allow “researchers to circumvent technological protection measures on lawfully accessed literary works distributed electronically as well as on lawfully accessed motion pictures, in order to deploy text and data mining techniques.”<sup>553</sup> The Office grouped the proposals into two proposed classes: Class 7(a) pertaining to motion pictures and Class 7(b) pertaining to literary works.<sup>554</sup>

Authors Alliance, AAUP, and LCA explained that their proposed exemptions were intended to enable researchers to copy motion pictures and literary works to create collections of works on which they can conduct TDM.<sup>555</sup> TDM involves digitizing and downloading large numbers of works to create datasets on which researchers can perform algorithmic extractions to investigate questions and observe trends.<sup>556</sup> Because many motion pictures and electronically distributed literary works are protected by TPMs, proponents argued an exemption is necessary to digitize and download the works.<sup>557</sup>

In response to concerns raised by opponents that the initial proposal was overbroad, in their reply comments Authors Alliance, AAUP, and LCA proposed narrower regulatory language. These updated proposals specified that the purpose of the circumvention would be for scholarly research and teaching; the circumvention would have to be undertaken by a researcher affiliated with a nonprofit library, archives, museum, or institution of higher education; and that the researcher would have to use reasonable security measures to limit access to the corpus of circumvented works only to certain categories of people.<sup>558</sup>

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<sup>553</sup> Authors Alliance/AAUP/LCA Class 7 Pet. at 2.

<sup>554</sup> NPRM at 65,305.

<sup>555</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 4.

<sup>556</sup> *Id.* at 4–5.

<sup>557</sup> *Id.* at 5.

<sup>558</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 6–15.

Authors Alliance, AAUP, and LCA's current proposed language is as follows:

**Proposed Class 7(a):** Motion pictures, where the motion picture is lawfully made and obtained on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or via a digital transmission protected by a technological protection measure, where:

- (1) the circumvention is undertaken by a researcher affiliated with a nonprofit library, archive, museum, or institution of higher education to deploy text and data mining techniques for the purpose of scholarly research and teaching; and
- (2) the researcher uses reasonable security measures to limit access to the corpus of circumvented works only to other researchers affiliated with qualifying institutions for purposes of collaboration or the replication and verification of research findings.

**Proposed Class 7(b):** Literary works, excluding computer programs, distributed electronically and lawfully obtained, that are protected by technological measures that interfere with text and data mining, where:

- (1) the circumvention is undertaken by a researcher affiliated with a nonprofit library, archive, museum, or institution of higher education to deploy text and data mining techniques for the purpose of scholarly research and teaching; and
- (2) the researcher uses reasonable security measures to limit access to the corpus of circumvented works only to other researchers affiliated with qualifying institutions for purposes of collaboration or the replication and verification of research findings.<sup>559</sup>

Additional comments in support of the petition were filed by Matthew Sag, Kyle Courtney, Rachael Samberg and Timothy Vollmer. Comments in opposition to proposed class 7(a) were filed by Joint Creators and DVD CCA and AACSLA. Comments in opposition to proposed class 7(b) were filed by the Association of American Publishers ("AAP") and SIIA.

### **b. Overview of Issues**

TDM methods enable researchers to sift through large collections of information to draw insights and observe trends.<sup>560</sup> TDM requires creating a dataset of works of interest,

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<sup>559</sup> *Id.* at 6.

<sup>560</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 5.

which “typically involves digitizing or downloading (i.e., reproducing) potentially copyrighted works in order to perform algorithmic extractions” from them.<sup>561</sup> Numerous academics submitted letters describing research projects they would like to conduct on collections of literary works and motion pictures. Proponents argue that section 1201 impedes the application of TDM techniques to motion pictures and literary works because researchers are unable to access digital copies of the motion pictures and literary works they want to study.<sup>562</sup> As a result, they contend, little TDM research has been done on motion pictures, and TDM research on literary works has typically only been done on works that are in the public domain.<sup>563</sup> Proponents proposed exemptions that would permit circumvention of TPMs on DVDs and Blu-ray discs containing motion pictures and literary works distributed digitally for the purpose of conducting TDM research.

The first major category of disagreement among the parties relates to whether the proposed use is likely to be fair use. Proponents argue that the case law establishes conclusively that creating a searchable collection of works for the purpose of TDM research is a fair use because it allows researchers to derive information about books without providing the public with a substitute for them.<sup>564</sup> Although proponents initially stated that researchers would not be able to view the text of literary works or the content of motion pictures in the course of their research,<sup>565</sup> it became clear over the course of this proceeding that proponents believed that it would in fact be necessary for researchers to view the content of the works to verify their methods and findings.<sup>566</sup> This raised the novel issues of whether copying works for the purpose of TDM research is transformative if researchers can view the entirety of the copyrighted content while they do their research.

Additionally, the parties dispute whether the proposed use would interfere with the market for or value of the original works. Opponents argue that the ability to view the entirety of the works creates a risk of substitutional use.<sup>567</sup> They also argue that TDM research interferes with the licensing market for collections of literary works and motion pictures for TDM purposes.<sup>568</sup> Finally, the parties have differing views on the types of

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<sup>561</sup> *Id.* at 4.

<sup>562</sup> *Id.* at 5-6.

<sup>563</sup> *Id.* at 4.

<sup>564</sup> *Id.* at 25-26.

<sup>565</sup> *See, e.g.*, Tr. 375:25-376:17 (Apr. 7, 2021) (Stallman, Authors Alliance) (explaining that the full text of the literary works would not be viewable by researchers through the corpus).

<sup>566</sup> Authors Alliance and LCA Class 7 Post-Hearing Resp. at 6 (May 21, 2021).

<sup>567</sup> AAP Class 7 Opp’n at 9.

<sup>568</sup> AAP Class 7 Opp’n at 9; DVD CCA & AACCS LA Class 7 Opp’n at 14-15.

security measures that should be required to secure a corpus composed of numerous copyrighted works to prevent security breaches. Proponents advocate for a flexible requirement to implement “reasonable security measures,” to allow researchers to determine the appropriate measures based on the size of the corpus and the research project.<sup>569</sup> Opponents feel strongly that specific security measures must be identified in the exemptions.<sup>570</sup>

The second major issue of disagreement relates to the availability of alternatives to circumvention. For researchers interested in studying literary works, opponents point to existing collections of literary works that are available to researchers.<sup>571</sup> Proponents argue that many features of existing collections make them inappropriate for the contemplated research, including expensive membership requirements, burdensome security measures, and gaps in the collections.<sup>572</sup> Another potential alternative is for researchers to create their own digital corpora. This would require scanning hard-copy literary works and making them searchable using optical character recognition and using screen-capture technology for motion pictures.<sup>573</sup> Proponents argue that these methods would require too much time and money to be practicable and would provide imperfect data.<sup>574</sup> They further contend that the licensing market for such uses is insufficiently developed to provide an adequate alternative.

The Register agrees that the TDM research described by proponents offers considerable public benefits and would likely constitute a noninfringing use if it can be conducted while maintaining the security of the copyrighted works in each corpus. She therefore recommends granting the proposed exemptions with several important limitations.

## 2. Discussion

### a. Works Protected by Copyright

With respect to the requirement that the relevant TPMs control access to copyrightable works, this class involves the use of motion pictures contained on DVDs or Blu-ray discs, or transmitted through streaming services, as well as literary works distributed

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<sup>569</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 23.

<sup>570</sup> AAP Class 7 Opp’n at 3; Joint Creators Class 7 Opp’n at 4–5.

<sup>571</sup> AAP Class 7 Opp’n at 11.

<sup>572</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 11–13.

<sup>573</sup> AAP Class 7 Opp’n at 11; DVD CCA & AACS LA Class 7 Opp’n at 14; Joint Creators Class 7 Opp’n at 6.

<sup>574</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 13–15.

electronically. There is no dispute that at least some of these works are protected by copyright.

### b. Asserted Noninfringing Uses

Proponents contend that the proposed uses are likely to be noninfringing based on case law holding that copying of copyrighted works to enable searching of the complete text is fair use.<sup>575</sup> They point primarily to the Second Circuit’s decisions in *Authors Guild, Inc. v. HathiTrust*<sup>576</sup> (“*HathiTrust*”) and *Authors Guild v. Google*<sup>577</sup> (“*Google Books*”).

In *HathiTrust*, a group of authors and authors’ associations brought copyright claims against HathiTrust, an entity created by libraries that had pooled together digital copies of books from their collections and created a database that permitted full-text searches to enable users to identify the locations of particular words or phrases. The court held that the creation of the database was fair use because the use was transformative and did not serve as a substitute for the original, and because the libraries undertook extensive security measures to minimize the risk of a data breach.<sup>578</sup>

In *Google Books*, Google digitally scanned, performed optical character recognition, and indexed books from numerous research library collections to create a search engine that enabled users to identify books that include specific terms, view snippets of text containing those terms, and obtain statistical information about the frequency of word and phrase usage over time.<sup>579</sup> The court held that Google’s use of the literary works was a fair use because it made “available information about Plaintiffs’ books without providing the public with a substantial substitute for matter protected by the Plaintiffs’ copyright interests in the original works or derivatives of them.”<sup>580</sup>

Opponents counter that “U.S. law on TDM uses of copyrighted works—and whether such uses qualify as fair uses—is far from settled.”<sup>581</sup> Because fair use is a fact-specific inquiry, opponents argue that *HathiTrust* and *Google Books* did not establish that all TDM uses are fair use, only that the specific uses in those cases were fair use, in light of the amount of access provided to the public, the security measures taken, and the relevant

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<sup>575</sup> *Id.* at 25–28.

<sup>576</sup> *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87 (2d Cir. 2014).

<sup>577</sup> *Authors Guild v. Google, Inc.*, 804 F.3d 202 (2d Cir. 2015) (“*Google Books*”).

<sup>578</sup> *HathiTrust*, 755 F.3d at 97–100.

<sup>579</sup> *Google Books*, 804 F.3d at 206.

<sup>580</sup> *Id.* at 207.

<sup>581</sup> AAP Class 7 Opp’n at 4.

licensing markets.<sup>582</sup> They point out that *HathiTrust* and *Google Books* involved copying literary works that had no TPMs, and that the same court subsequently found a TDM usage of motion pictures not to be a fair use.<sup>583</sup>

The Register agrees with opponents that the case law has not established that all copying of works for the purpose of TDM is necessarily a fair use. Indeed, although the *Google Books* court ultimately concluded that the specific use in that case was fair, it described the case as “test[ing] the boundaries of fair use.”<sup>584</sup> It is possible, however, to identify certain principles from the case law that can be applied to the proposed exemptions. First, copying for the purpose of creating a search function has been considered transformative in at least some circumstances.<sup>585</sup> Second, an important consideration in assessing the third factor and likely market harm under the fourth factor is the extent to which the display capability enables the public to view substantial portions of the text.<sup>586</sup> Third, the nature and effectiveness of the security measures used to prevent unauthorized access to the corpus are likewise significant under the market harm analysis.<sup>587</sup> The Register discusses each of these principles in greater detail below and uses them as guideposts.

**First factor.** The first fair use factor, the purpose and character of the use, looks at the commerciality of the use and whether it is transformative. Proponents suggested in their opening comments that the exemptions would “apply to commercial and non-

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<sup>582</sup> AAP Class 7 Opp’n at 4; DVD CCA & AACS LA Class 7 Opp’n at 13; Joint Creators Class 7 Opp’n at 2–3.

<sup>583</sup> Joint Creators Opp’n at 3 (citing *Fox News Network, LLC v. TVEyes, Inc.*, 883 F.3d 169 (2d Cir. 2018)).

<sup>584</sup> *Google Books*, 804 F.3d at 206.

<sup>585</sup> See *HathiTrust*, 755 F.3d at 97 (creation of a full-text searchable database is transformative); *Google Books*, 804 F.3d at 217 (creation of a full-text searchable database is transformative); *VHT, Inc. v. Zillow Group, Inc.*, 918 F.3d 723, 743 (9th Cir. 2019) (search engine for photographs provides “limited transformation”); *A.V. ex rel. Vanderhuy v. iParadigms, LLC*, 562 F.3d 630, 640 (4th Cir. 2009) (creation of database of student papers to search for potential plagiarism was transformative).

<sup>586</sup> See *Google Books*, 804 F.3d at 209–10 (maximum of three snippets of each literary work, containing no more than one eighth of a page, were viewable for each search and additional precautions were taken to ensure that certain segments of each work were unviewable); *HathiTrust*, 755 F.3d at 91 (“the user is not able to view either the page on which the term appears or any other portion of the book”); *iParadigms, LLC*, 562 F.3d at 634–35 (plagiarism detector program sends professor an “Originality Report” suggesting what percentage of the work appears not to be original, cannot view the comparison works that were searched).

<sup>587</sup> *HathiTrust*, 755 F.3d at 100–01; *Google Books*, 804 F.3d at 228.

commercial uses.”<sup>588</sup> After opponents expressed concern that scholarly research can be performed by those with profit-seeking motives,<sup>589</sup> proponents clarified in their reply comment that the exemption “seeks to enable use of TDM for noncommercial scholarship and teaching.”<sup>590</sup> While the language proposed specifies only that the purpose of the use is “scholarly research and teaching,” proponents confirmed during the hearing that the proposed use is entirely non-commercial and that they would be comfortable requiring it to be “solely” for the purpose of scholarly research and/or teaching.<sup>591</sup> To address opponents’ concerns about for-profit entities benefiting from the exemptions,<sup>592</sup> proponents also amended the proposal to limit beneficiaries to researchers affiliated with nonprofit libraries, archives, museums, or institutions of higher education.<sup>593</sup>

Determining whether the proposed use is transformative requires a clear understanding of its contours. The proposed exemptions contemplate a researcher or group of researchers seeking to investigate a particular set of questions that require examination of a large number of works. For example, Dan Sinykin, Assistant Professor of English at Emory University, seeks to study how the conglomeration of U.S. publishing between the 1950s and 2020 has affected fiction, which would require assembling a large corpus of fiction from those seventy years.<sup>594</sup> Eric Hoyt, Professor of Media Production in the Department of Communication Arts at the University of Wisconsin-Madison, seeks to study the development of filmatic and televisual styles as reflected in camera framing, shot length, color, brightness, and contrast.<sup>595</sup>

The researcher would assemble a corpus made up of a sufficient number of works from the relevant genre and time period to be able to draw conclusions. In response to opponents’ concerns,<sup>596</sup> proponents clarified that each researcher can utilize only the works in the corpus she has assembled. She cannot aggregate her corpus with corpora

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<sup>588</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 26.

<sup>589</sup> AAP Class 7 Opp’n at 7, 9; DVD CCA & AACCS LA Class 7 Opp’n at 7.

<sup>590</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 11.

<sup>591</sup> Tr. at 342:23–343:02 (Apr. 7, 2021) (Stallman, Authors Alliance) (“[W]e don’t contemplate the work of these scholars being used for commercial purposes, so that limitation is fine.”).

<sup>592</sup> AAP Class 7 Opp’n at 8; DVD CCA & AACCS LA Class 7 Opp’n at 11–12.

<sup>593</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 9–10.

<sup>594</sup> Authors Alliance/AAUP/LCA Class 7 Initial at App. L (letter from Dan Sinykin).

<sup>595</sup> *Id.* at App. E (letter from Eric Hoyt).

<sup>596</sup> Joint Creators Class 7 Opp’n at 4.

assembled by other researchers.<sup>597</sup> The researcher would enter the algorithms she has designed and, using TDM techniques, the full content of each of the works within the corpus would be searched and the relevant information extracted in the form of a numerical score.<sup>598</sup> The text of the proposed exemptions specifies that decrypted copies can only be circulated to other institutions or researchers for the purpose of collaboration or replication and verification of research findings.

Having considered the parties' arguments, the Register concludes that the proposed use is non-commercial and likely transformative. Although the copyrighted works would not be altered when they are added to a corpus, a use can be transformative if the function or purpose of the use differs from that of the original.<sup>599</sup> For example, both the *HathiTrust* and *Google Books* courts held that the creation of a full-text searchable database is transformative because the resulting database is different in purpose and character from that of the original literary works.<sup>600</sup>

Here, the intended purpose of the proposed activity is to provide information about works by identifying trends or calculating statistics, which differs from the expressive or informative purposes of the original works. In that regard, the proposed use is similar to Google's ngrams tool, which allowed readers "to learn the frequency of usage of

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<sup>597</sup> Tr. 343:04–07 (Apr. 7, 2010) (Stallman, Authors Alliance) ("[T]he idea is the researchers themselves are assembling their own corpora to answer their own questions, not that they're reaching out to use somebody else's").

<sup>598</sup> Tr. 350:11–353:02 (Apr. 7, 2021) (Bamman, University of California, Berkeley) (describing process of performing TDM research).

<sup>599</sup> See, e.g., *iParadigms*, 562 F.3d at 640 (archiving and using student papers to detect plagiarism was transformative even though the works were unaltered and used in their entirety because the use for the purpose of detecting plagiarism was "completely unrelated" to the expressive content in the works).

<sup>600</sup> *HathiTrust*, 755 F.3d at 97 (holding that creation of a full-text searchable database that did not show the user any of the text of the copyrighted works was transformative); *Google Books*, 804 F.3d at 217 (holding that the "snippet view," which showed portions of unaltered, copyrighted text, was transformative because it "add[ed] important value to the basic transformative search function" by allowing users to verify that the list of books returned by the database was responsive to the user's search); see also *TVEyes*, 883 F.3d at 177 (holding that function that allowed customers to view clips up to ten minutes long from television broadcasts was "at least somewhat transformative" because it "enables users to isolate, from an ocean of programming, material that is responsive to their interests and needs," and to access that material precisely and efficiently); *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 818 (9th Cir. 2003) (holding that displaying low-resolution, thumbnail versions of photographs in response to a search query was fair use because the Barman function of function of the photographs was aesthetic, while the function of the thumbnail versions within the search engine was "to help index and improve access to images on the internet and their related web sites").



selected words in the aggregate corpus of published books in different historical periods,” and to the report provided by HathiTrust, which provided only the page numbers on which a search term was found and the number of times the term appears on each page.<sup>601</sup>

To address opponents’ concerns that researchers could be using the works in the corpora to perform traditional textual or filmatic analysis,<sup>602</sup> proponents initially stated that researchers would not be able to view the text of literary works or the content of motion pictures once they are added to the corpus.<sup>603</sup> In response to the Office’s post-hearing questions, however, proponents took a different position, contending that an “outright ban on viewing any content in a research corpus would comprehensively undermine TDM research projects based on the exemption.”<sup>604</sup> Proponents asserted that researchers must be able to verify their methods and findings by reviewing the content of the works in context. They argued that researchers’ ability to view content from the underlying works would be consistent with the HathiTrust’s Non-Consumptive Use Research Policy, which permits researchers to refer “to specific passages in order to verify or evaluate results, to develop and revise algorithms for processing the text, and to select appropriately short quotes as necessary examples in reporting the research, as may be supported by fair use.”<sup>605</sup>

Because this issue was introduced after the hearing, opponents did not have a real opportunity to provide their views on this issue. In their prior comments, opponents argued that the ability to view the entirety of the copyrighted works raised issues regarding whether the use was effectively space-shifting, which the Office has consistently found not to be fair use.<sup>606</sup> They also expressed concern that if researchers

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<sup>601</sup> *Google Books*, 804 F.3d at 217; *HathiTrust*, 755 F.3d at 91. The HathiTrust Digital Library’s Non-Consumptive Use Research Policy was not timely introduced into the record in this proceeding and was not discussed in the *HathiTrust* case.

<sup>602</sup> AAP Class 7 Opp’n at 7–8.

<sup>603</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 16 (stating that circumvention is not necessary to engage directly with literature or film); *id.* at 22 (“Of course digital humanities scholars will also want to read or watch works they study via computational methods. And they might even want to quote those works in an article discussing the findings of their TDM. But they do not need this exemption to read or watch works they already have lawfully obtained, and they do not need this exemption to quote from those works.”); *see also* Tr. 375:25–376:17 (Apr. 7, 2021) (Stallman, Authors Alliance) (explaining that the full text of the literary works would not be viewable by researchers through the corpus).

<sup>604</sup> Authors Alliance and LCA Post-Hearing Resp. at 6 (May 21, 2021).

<sup>605</sup> *Id.* at 7 (quoting HathiTrust Digital Library, Non-Consumptive Use Research Policy (approved Feb. 20, 2017), <https://perma.cc/8WRP-7532> (last visited Sept. 26, 2021)).

<sup>606</sup> DVD CCA & AACSLA Class 7 Opp’n at 10–12.

used the copies of the copyrighted works made after circumvention for their expressive purposes, that would not be transformative.<sup>607</sup>

The Register concludes that the proposed use is likely to be transformative, notwithstanding researchers' ability to view the content of the copyrighted works. The Register recommends adding a limitation that researchers would be permitted to view or listen to the copyrighted works solely to verify research results, which will ensure that the purpose of the use differs from the original expressive purposes for which the works were created.

Thus, the first factor weighs in favor of fair use because the proposed use is non-commercial and, with this limitation, likely to be found transformative.

**Second factor.** The Register concludes that the second fair use factor, the nature of the copyrighted work, weighs against a finding of fair use. It is well established that literary works and motion pictures are creative and thus at the "core" of copyright's protective purposes.<sup>608</sup> This factor, however, is of limited significance in the analysis of this class.<sup>609</sup>

**Third factor.** With respect to the third fair use factor, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, copying the entire work is likely reasonable in light of the purpose of the copying: obtaining data about the copyrighted works. Reproducing a work in its entirety does not necessarily weigh against a finding of fair use when such copying is necessary to achieve a legitimate purpose.<sup>610</sup>

**Fourth factor.** The Register concludes that proponents have not demonstrated that the fourth fair use factor, the effect of the use upon the potential market for or value of the copyrighted work, favors fair use. This factor focuses on "the effect of the use upon the potential market for or value of the copyrighted work,"<sup>611</sup> and, in particular, whether the

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<sup>607</sup> AAP Class 7 Opp'n at 7–8.

<sup>608</sup> See *Stewart v. Abend*, 495 U. S. 207, 237–238 (1990) (contrasting fictional short story with factual works); *Harper & Row v. Nation Enters.*, 471 U.S. 539, 563 (1985) ("The law generally recognizes a greater need to disseminate factual works than works of fiction or fantasy"); 2018 Recommendation at 45; 2015 Recommendation at 70; 2012 Recommendation at 128.

<sup>609</sup> 2018 Recommendation at 243.

<sup>610</sup> See, e.g., *Swatch Grp. Mgm't Servs. Ltd. v. Bloomberg L.P.*, 756 F.3d 73, 90 (2d Cir. 2014) (finding third factor was neutral when entire work was copied); *Núñez v. Caribbean Int'l News Corp.*, 235 F.3d 18, 24 (1st Cir. 2000) (holding copying of entire picture was "of little consequence" to court's analysis).

<sup>611</sup> 17 U.S.C. § 107(4).

secondary work serves as a substitute for the original work.<sup>612</sup> Other relevant considerations in this context are the effect on actual or potential licensing markets<sup>613</sup> and the adequacy of the security measures employed to protect against unauthorized dissemination of copies.<sup>614</sup>

With respect to market substitution, proponents argue that the creation of a digital corpus of works that enables researchers to study and draw conclusions about those works would not have a substitutional effect. They note that no one seeking to watch a motion picture would instead read a computational analysis of that motion picture.<sup>615</sup> In post-hearing comments and *ex parte* discussions, the Authors Alliance emphasized that the formats in which the raw files used for machine processing are stored are difficult for humans to read, making them “simply inferior” to formats in which the works are made available for consumptive use.<sup>616</sup> In addition, they noted that institutions already own copies of the literary works and motion pictures, and that researchers would use those copies if they were seeking to use the works for their expressive purposes.<sup>617</sup> Because the issue of the viewing the complete content of works by researchers was not raised until after the hearing, opponents did not have an opportunity to respond to these assertions.

The Register concludes that, with the limitation that researchers may not use the copies of the copyrighted works in the corpus for their expressive purposes, the copies would not serve as substitutes for the original works.

As to licensing revenues, opponents argue that there is an actual and/or potential market for copyright owners to license their works for TDM uses.<sup>618</sup> Opponents describe a recent recognition of the value of large datasets and the increasing interest in licensing such datasets.<sup>619</sup> AAP characterizes the current market for large-scale collections of

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<sup>612</sup> See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 591 (1994) (noting that “cognizable market harm” is limited to “market substitution”).

<sup>613</sup> See *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 613–14 (2d Cir. 2006) (“The court looks to not only the market harm caused by the particular infringement, but also to whether, if the challenged use becomes widespread, it will adversely affect the potential market for the copyrighted work.”).

<sup>614</sup> *HathiTrust*, 755 F.3d at 100–01; *Google Books*, 804 F.3d at 228.

<sup>615</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 27.

<sup>616</sup> Authors Alliance and LCA Class 7 Post-Hearing Resp. at 8 (May 21, 2021).

<sup>617</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 22 (stating that researchers “do not need this exemption to read or watch works they already have lawfully obtained”).

<sup>618</sup> AAP Class 7 Opp’n at 9–10; Joint Creators Class 7 Opp’n at 6; SIIA Class 7 Opp’n at 1.

<sup>619</sup> AAP Class 7 Opp’n at 5; SIIA Class 7 Opp’n at 1.

copyrighted literary works to conduct TDM research as “nascent, but growing,” and specifically points to the example of the Copyright Clearance Center’s RightFind program, which licenses full-text versions of journal articles to TDM researchers.<sup>620</sup> Opponents contend that the proposed use would compete with this burgeoning market.

Proponents respond that opponents have not presented evidence that licenses are available for the specific content researchers desire to use, which includes popular fiction and motion pictures.<sup>621</sup> They contend that if the existence of a potential licensing market were a sufficient showing of market harm to prevent to researchers from copying the works, copyright owners who did not find it in their interest to “make that potential a reality” would force researchers to “content themselves with what research questions the public domain or, if they are fortunate, HathiTrust, allow them to answer.”<sup>622</sup>

The Register finds *HathiTrust* is instructive on this issue. There, the court held that lost licensing revenue can be considered in the analysis of the fourth factor “only when the use serves as a substitute for the original.”<sup>623</sup> It concluded that HathiTrust’s use of copies of the literary works to generate full-text searches was not a lost opportunity to license the book for search because the full-text search was not a substitute for the books being searched.<sup>624</sup> The Register concludes that, as in *HathiTrust*, the end goal of the contemplated TDM research does not serve as a substitute for the original work.

Finally, with respect to security, proponents suggest that it would be sufficient for the exemptions to require qualifying institutions to put in place “reasonable security measures,” rather than specifying precise measures that should be implemented.<sup>625</sup> They point to other exemptions the Register has recommended that require “reasonable security measures.”<sup>626</sup> They reason that institutions of higher education are accustomed to using security measures and will exercise their discretion to implement appropriate measures for each corpus depending on the “institution size, degree of public access, and type of research.”<sup>627</sup> In their view, a flexible security standard would permit

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<sup>620</sup> AAP Class 7 Opp’n at 9–10 (citing *RightFind XML for Mining Solution*, CCC, <https://www.copyright.com/publishers/rightfind-xml-for-mining-solution/> (last visited Oct. 18, 2021)).

<sup>621</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 24.

<sup>622</sup> *Id.* at 25.

<sup>623</sup> *HathiTrust*, 755 F.3d at 100.

<sup>624</sup> *Id.* at 100.

<sup>625</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 23.

<sup>626</sup> *Id.* at 11 (citing Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010, 54,030, 54,017, 54,019, 54,023 (Oct. 26, 2018)).

<sup>627</sup> *Id.* at 9–10, 13.

researchers to implement different measures for a smaller corpus than a massive repository like the HathiTrust.<sup>628</sup>

Opponents counter that specific security measures are warranted because large collections of copyrighted works are at great risk of unauthorized downloading and redistribution.<sup>629</sup> In their view, the *HathiTrust* and *Google Books* courts' holdings that those uses were fair rested in large part on the institutions' implementation of specific security measures to protect the copyrighted works from access and further distribution.<sup>630</sup> They argue that the affiliated institution would need to take responsibility for the security measures because individual researchers and staff members do not have the capacity to determine what safety requirements are necessary and comply with those requirements.<sup>631</sup>

The Register concludes that the proposed exemptions demand close attention to security measures. The corpora envisioned by proponents could potentially contain hundreds, thousands, or even more copyrighted works. The courts that have found copying for the purpose of TDM to be fair use relied heavily in their analyses on the specific security measures that were in place. In *HathiTrust*, libraries implemented extensive security measures to reduce the risk of a data breach, including protecting the servers on which complete copies of the text of the copyrighted works were stored, and restricting and monitoring network access to the corpus.<sup>632</sup> In *Google Books*, Google had walled off the copyrighted works from internet access and applied the same "impressive" security measures Google used to keep its own confidential information safe.<sup>633</sup> Likewise, the European Directive on the Digital Single Market,<sup>634</sup> emphasizes the importance of security measures to protect copyrighted works being used for TDM.<sup>635</sup> Here, the potential for damage if there were to be a security breach is too great to allow

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<sup>628</sup> *Id.* at 13; Matthew Sag Class 7 Reply at 2.

<sup>629</sup> AAP Class 7 Opp'n at 3; Joint Creators Class 7 Opp'n at 4–5.

<sup>630</sup> AAP Class 7 Opp'n at 6; Joint Creators Class 7 Opp'n at 3.

<sup>631</sup> AAP Class 7 Post-Hearing Resp. at 10 (May 21, 2021).

<sup>632</sup> *HathiTrust*, 755 F.3d at 100–01.

<sup>633</sup> *Google Books*, 804 F.3d at 228.

<sup>634</sup> Directive 2019/790, of the European Parliament and of the Council of 17 April 2019 on Copyright and Related Rights in the Digital Single Market and Amending Directives 96/9/EC and 2001/29/EC, 2019 O.J. (L 130) ("EU Directive").

<sup>635</sup> *See, e.g., id.* at recital 15 ("[T]he copies should be stored in a secure environment."); *id.* at recital 16 ("[R]ightholders should be allowed to apply measures when there is a risk that the security and integrity of their systems or databases could be jeopardised."); *id.* at art. 3(2) ("Copies of works . . . shall be stored with an appropriate level of security . . .").

researchers to implement security measures that they subjectively find to be reasonable without providing guidance as to at least minimum standards.

The record does not contain significant information regarding the appropriate security measures to include in the exemptions. Because the original proposal included no security requirements at all, the issue of whether “reasonable security measures” would be sufficient was not raised until the hearing. Little evidence was included in the record regarding specific security measures that would be sufficient to protect corpora from a security breach.

In a post-hearing letter, the Office asked participants to provide their views on “minimum, yet sufficient, security measures with which eligible institutions should be required to comply when creating a corpus of literary works or motion pictures on which text and data mining techniques can be performed,” including providing examples of standards for information security management currently used by academic institutions or others.<sup>636</sup> Joint Creators replied that copyright owners should be permitted time to “articulate a set of guidelines specific to the scope of the TDM projects sanctioned by the exemption,” and that institutions should be required to comply with those guidelines.<sup>637</sup> DVD CCA and AACS LA cited the EU Directive’s requirement that rightsholders “shall be allowed to apply measures to ensure the security and integrity of the networks and databases where the works or other subject matter are hosted.”<sup>638</sup> They argued that security measures should include strong encryption on the server that stores the corpus; separation of the corpus server from other servers; limited network access; stringent access mechanisms and policies limiting access to the corpus to those doing specific research projects; and deletion of the corpus after the research project is complete.<sup>639</sup> AAP and SIIA opined that an institution hosting any corpus should adhere to a security protocol that complies with the National Institute of Standards and Technology’s (“NIST”) standards applicable to highly sensitive material.<sup>640</sup> AAP also requested additional safeguards as appropriate to particular projects and corpora,

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<sup>636</sup> Copyright Office Class 7 Post-Hearing Letter at 2 (Apr. 16, 2021).

<sup>637</sup> Joint Creators Class 7 Post-Hearing Resp. at 6 (May 21, 2021) (citing EU Directive, at art. 3(3)).

<sup>638</sup> EU Directive, at art. 3(3).

<sup>639</sup> DVD CCA & AACS LA Class 7 Post-Hearing Resp. at 1 (May 21, 2021).

<sup>640</sup> AAP Class 7 Post-Hearing Resp. at 2 (May 21, 2021) (citing RON ROSS ET AL., NAT’L INST. OF STANDARDS & TECH., U.S. DEP’T OF COM., NIST SPECIAL PUBLICATION 800-171, PROTECTING CONTROLLED UNCLASSIFIED INFORMATION IN NONFEDERAL SYSTEMS AND ORGANIZATIONS (rev. Jan. 28, 2021) <https://csrc.nist.gov/publications/detail/sp/800-171/rev-2/final>); SIIA Class 7 Post-Hearing Resp. at 6 (May 21, 2021).

including mechanisms to detect and prevent downloading of stored materials and deletion of the corpus when the work is complete.<sup>641</sup>

Proponents continued to insist that institutions must be able to create customized security plans based on each institution's systems and the nature of the corpus.<sup>642</sup> In their view, the optimal set of controls for any corpus varies depending on factors such as the "future utility of the data, the specifics of the network and storage, and the risks associated with disclosure."<sup>643</sup> In *ex parte* discussions with the Office, the Authors Alliance expressed concern that some of the specific security measures proposed by opponents were impracticable, including requiring a physical separation between the server hosting the corpus from other institutional servers.<sup>644</sup> It agreed, however, to include a requirement that researchers consult with their institution's IT office as they assembled the corpus and to specify that the security measures implemented would be designed "to prevent dissemination, downloading, and unauthorized access, and to limit access to the corpus of circumvented works only to other researchers affiliated with qualifying institutions for purposes of collaboration or the replication and verification of research findings."<sup>645</sup>

Given the state of the record on this issue, rather than crafting specific security measures, the Register recommends requiring the institution of higher education to implement security measures that have been agreed to by interested copyright owners and higher education institutions. Where such measures have not been agreed upon, the institution must protect the corpus of works using the same security measures that it uses to keep its own highly confidential information (*e.g.*, government-issued identification numbers; personal medical or health insurance information; official financial, accounting, and payroll systems) secure. The Register encourages the parties to collaborate to develop security measures that strike an appropriate balance between protecting the copyrighted materials from unlawful distribution and taking into account reasonable limitations on the institutions' resources. The post-hearing letters and the Office's *ex parte* discussions with participants provide some cause for optimism that the parties can reach agreement with respect to security issues.

The option for institutions to use the security measures they use to protect their own highly confidential information provides a fallback in the absence of consensus security measures. This option is consistent with the security measures the *Google Books* court

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<sup>641</sup> AAP Class 7 Post-Hearing Resp. at 3 (May 21, 2021).

<sup>642</sup> Authors Alliance and LCA Class 7 Post-Hearing Resp. at 4 (May 21, 2021).

<sup>643</sup> *Id.*

<sup>644</sup> See Authors Alliance Class 7 *Ex Parte* Letter at 6 (Aug. 9, 2021).

<sup>645</sup> See *id.* at 5.

found sufficient to protect a vast collection of digitized works,<sup>646</sup> as well as hearing testimony that the University of California at Berkeley would treat the type of corpus proposed in the exemptions as “highly sensitive” information, and would implement significant security measures in connection with hosting and storing such a corpus.<sup>647</sup> To promote transparency, the Register recommends a requirement that, upon the reasonable request of a copyright owner whose works are contained in the corpus, the institution must provide information to that copyright owner regarding the nature of the security measures it has implemented. A copyright owner who believes the security measures being used are insufficient may provide information regarding those concerns in future 1201 rulemaking proceedings.

Balancing the four fair use factors, with the limitations discussed, the Register concludes that the proposed use is likely to be a fair use.

### **c. Causation**

The Register finds that proponents have met their burden of showing that the prohibition on circumvention is the cause of a number of adverse effects. But for the prohibition on circumvention, researchers would be able to perform TDM techniques on contemporary literary works and motion pictures and teach those techniques in their courses.

### **d. Asserted Adverse Effects**

As an initial matter, there is a dispute regarding the availability of alternatives to circumvention that would allow researchers to conduct their research and teach text and data mining methods. For researchers interested in studying literary works, while some digital libraries composed of literary works exist, the record demonstrates that those libraries are insufficient to allow researchers to conduct the type of research contemplated here.

Opponents pointed to the HathiTrust digital library as an adequate alternative to circumvention,<sup>648</sup> but proponents explained that several features of that collection make it difficult to use. First, they noted that the HathiTrust collection is only available to

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<sup>646</sup> *Google Books*, 804 F.3d at 228.

<sup>647</sup> Tr. 385:05-387:17 (Apr. 7, 2021) (Hoffman, University of California, Berkeley) (discussing a process that includes having the researcher sign an agreement with respect to the TDM project; registration of the project with the school’s information security office; deployment of human resources to assist with security; staff trainings on cybersecurity; physical security measures; and monitoring for system intrusions).

<sup>648</sup> AAP Class 7 Opp’n at 11.



researchers who are affiliated with HathiTrust member institutions.<sup>649</sup> Second, all research must be carried out on HathiTrust servers, which have limited processing capabilities.<sup>650</sup> Third, security measures put in place to prevent unauthorized distribution of digitized works within the collection limit researchers' ability to test or refine their algorithms.<sup>651</sup> Finally, researchers find that the HathiTrust has "substantial gaps in its collection."<sup>652</sup> Because the materials in the collection originated in university libraries, the collection contains a greater proportion of academic monographs than mass-market fiction.<sup>653</sup>

Given these limitations, researchers seeking to avoid circumventing TPMs may be required to create their own collections by scanning hard-copy versions of literary works and digitizing them using optical character recognition (OCR) technology. The record demonstrates, however, that this is not a workable solution for many researchers.<sup>654</sup> Debinding and scanning each book, performing the OCR, reviewing the resulting text for errors, and removing any extraneous information may require considerable investment of time and money.<sup>655</sup> The OCR process also may introduce errors into the digitized works.<sup>656</sup> The Register disagrees with opponents' suggestion that these

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<sup>649</sup> Authors Alliance/AAUP/LCA Class 7 Initial at App. C (letter from James Clawson explaining that some institutions, including many historically Black colleges and universities, lack access to the HathiTrust collection due to the expense). The average annual fee for access to HathiTrust for libraries with the smallest budgets is \$7,146, and libraries with larger budgets pay more than \$14,000 per year. *Overview of HathiTrust Cost Model and Annual Fees*, HATHITRUST, <https://www.hathitrust.org/Cost> (last visited Oct. 18, 2021).

<sup>650</sup> Authors Alliance/AAUP/LCA Class 7 Initial Apps. I, L, N (letters from Andrew Piper, Dan Sinykin, and Ted Underwood).

<sup>651</sup> *Id.* at Apps. I, N (letters from Andrew Piper and Ted Underwood).

<sup>652</sup> *Id.* at 11.

<sup>653</sup> *Id.* at App. B (HathiTrust collection is biased away from mass-market romances and science fiction); *accord id.* at App. P (vast majority of materials in Temple Libraries' science fiction collection are not contained in the HathiTrust collection); *id.* at App. H (HathiTrust does not have extensive collection of young adult books); *id.* at App. N (HathiTrust does not have extensive collection of romance fiction).

<sup>654</sup> *Id.* at 13–15, App. B (describing process of scanning and digitizing 500 books); *id.* at App. C (describing challenges of OCR); *id.* at App. G (describing digitization of novels).

<sup>655</sup> *Id.* at 14; *id.* at App. H (describing how lengthy and expensive process of digitizing literary text is impossible for graduate student); *id.* at App. O (early career researcher does not have research funds or student researchers to digitize works).

<sup>656</sup> *Id.* at 14, Apps. D, G.

difficulties amount to “mere inconveniences.”<sup>657</sup> In many cases, they may effectively prevent researchers from being able to conduct research involving the works at issue.

For researchers interested in studying motion pictures, there are no existing large-scale libraries of digital motion pictures available for text and data mining.<sup>658</sup> Opponents suggest that researchers could create their own collections using screen-capture tools.<sup>659</sup> The Office has previously recognized, however, that screen-capture reduces the quality of the images available to researchers.<sup>660</sup> Such images are unlikely to satisfy the needs of researchers, who frequently need access to high-resolution versions of motion pictures for their research.<sup>661</sup> Thus, the Register finds that there are no existing alternatives to circumvention.

With respect to the first section 1201 statutory factor, proponents argue that granting the exemptions would increase the availability of copyrighted works because TDM research will give rise to new works, including articles, books, and presentations, that incorporate researchers’ findings.<sup>662</sup> DVD CCA and AACCS LA respond that copyright owners distributed audiovisual works in digital format at reasonable prices with the understanding that they could only be played back by certain types of players and would be protected from further reproduction or distribution by TPMs. In their view, had copyright owners known that a DVD copy would be used for TDM, they would have charged higher prices.<sup>663</sup> Likewise, AAP argues that the proposed exemptions would decrease the availability of copyrighted works in electronic formats because copyright owners may withhold electronic versions of their work to prevent them from being exposed to further distribution and piracy.<sup>664</sup>

The Register concludes that this factor does not weigh against the proposed exemptions. The proposed use is narrowly tailored to scholarly research, and it is unlikely that

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<sup>657</sup> See AAP Class 7 Opp’n at 10–11; Joint Creators Class 7 Opp’n at 6.

<sup>658</sup> Authors Alliance/AAUP/LCA Class 7 Initial at App. B.

<sup>659</sup> DVD CCA & AACCS LA Class 7 Opp’n at 14; Joint Creators Class 7 Opp’n at 6.

<sup>660</sup> 2012 Recommendation at 133 (“[T]here is no serious question that screen capture technology produces lower-quality images than those that are available by circumvention.”).

<sup>661</sup> Tr. 350:14–353:02 (Apr. 7, 2021) (Dr. Bamman, University of California, Berkeley) (explaining process of studying the representation of violence in movies by studying features such as the RGB values and the subtitles showing dialogue from each movie, which requires “high precision fidelity”).

<sup>662</sup> Authors Alliance/AAUP/LCA Class 7 Initial at 29–30.

<sup>663</sup> DVD CCA & AACCS LA Class 7 Opp’n at 15–16.

<sup>664</sup> AAP Class 7 Opp’n at 12.

copyright owners would entirely withhold electronic versions of their works from the market out of a concern that they may be used for the type of research described here.

Proponents have established that the second and third statutory factors weigh in favor of granting the exemptions. The purpose of the exemptions is to increase the use of TDM techniques in scholarship, research, and teaching, which are favored purposes under the statutory factors.<sup>665</sup> Academic researchers provided specific examples of research projects they hope to pursue involving the use of TDM techniques to study literary works and motion pictures.<sup>666</sup> The exemptions will also enable professors to teach TDM techniques to students using contemporary, diverse, and inclusive works.<sup>667</sup>

With respect to the fourth statutory factor, as detailed in the discussion of the fourth fair use factor, assuming that the copyrighted works in the corpus would not be used for their expressive purposes, the Register does not believe that the copies created pursuant to the exemptions would serve as substitutes for the original or interfere with licensing markets. The requirement to employ robust security measures will further reduce the risk of public access and distribution of the copyrighted works.

### 3. NTIA Comments

NTIA recommends adoption of the exemptions to allow circumvention by researchers seeking to perform TDM on electronic copies of literary works and motion pictures. It concludes that petitioners persuasively demonstrated that the proposed use is likely to be noninfringing. In its view, like *HathiTrust* and *Google Books*, the purpose of the proposed use is to provide information about the copyrighted works, not to replicate the works' contents.<sup>668</sup> It further concludes that the products of TDM research, such as scholarly books and articles, "make virtually none of the original work accessible to the public, and are not in any way a substitute for the original works."<sup>669</sup> NTIA believes that proponents demonstrated a need for researchers to have access to the underlying copyrighted materials.<sup>670</sup> NTIA distinguishes the proposed exemptions—which would allow only researchers and those checking or reviewing their work to access to the

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<sup>665</sup> 2015 Recommendation at 94, 311.

<sup>666</sup> Authors Alliance/AAUP/LCA Class 7 Initial at Apps. B–P.

<sup>667</sup> *Id.* at 31. While proponents raised the promotion of diversity and equity as a separate factor that the Register should consider, the Register finds that these important interests relate to the educational, research, and scholarship interests discussed in the second and third statutory criteria.

<sup>668</sup> NTIA Letter at 51–52.

<sup>669</sup> *Id.* at 52–53.

<sup>670</sup> *Id.* at 57.

underlying works—from the facts in *TVEyes*, in which customers could access virtually all of Fox’s audiovisual content.<sup>671</sup>

Rather than requiring specific security measures, NTIA recommends that the Librarian adopt “a flexible framework that can be tailored to the type of work at issue, the resources of the institution, and evolving security threats.”<sup>672</sup> NTIA believes that expressly prohibiting commercial uses of the accessed works would further minimize the risk of market harm.<sup>673</sup>

#### 4. Conclusion and Recommendation

Proponents have proposed exemptions that would enable researchers to conduct TDM research on collections of motion pictures and literary works. They assembled numerous letters from academics that effectively demonstrated the types of research questions they desire to answer and explained why existing options do not meet researchers’ needs. The Register recognizes the academic and societal benefits that could result from TDM research and concludes that properly tailored exemptions meet the statutory requirements for adoption.

The Register recommends limiting the exemptions to researchers at institutions of higher education, and staff members and students working at the direction of such researchers. To define the class of eligible institutions, the Register has incorporated language offered by proponents that is drawn from Higher Education Act.<sup>674</sup> All of the evidence proponents submitted regarding potential TDM research projects involved researchers and students from institutions of higher learning. The record contains no evidence that libraries, archives, or museums that are not affiliated with institutions of higher learning will conduct TDM research under the exemptions or are able to implement appropriate security measures to secure large corpora of copyrighted works. The recommended exemptions therefore do not extend to those types of institutions.

The Register recommends that circumvention be permitted only on copies of the copyrighted works that were lawfully acquired and that the institution owns or for which it has a non-time-limited license. Circumvention is not permitted to access copies that the institution has rented or borrowed.

As discussed above, the Register also finds it appropriate to add a limitation that the person undertaking the circumvention view or listen to the contents of the copyrighted works in the corpus solely for the purpose of verification of the research findings, not for

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<sup>671</sup> *Id.* at 54.

<sup>672</sup> *Id.* at 57.

<sup>673</sup> *Id.* at 57–58.

<sup>674</sup> Authors Alliance/AAUP/LCA Class 7 Reply at 9 (quoting 20 U.S.C. § 1001(a)).

their expressive purposes. Further, for the reasons discussed above, the Register recommends that the institution storing or hosting a corpus of copyrighted works be required to use “effective security measures” to secure the corpus from unauthorized access, distribution, or download. The recommended exemptions define “effective security measures” to mean security measures that have been agreed upon by copyright owners and institutions of higher education, or, in the absence of such measures, the security measures that the institution uses to keep its own highly confidential information secure. If the institution uses the security measures it uses to protect its own highly confidential information, it must, upon a reasonable request from a copyright owner whose work is contained in the corpus, provide information regarding the nature of such measures to that party.

The Register recommends that the Librarian designate the following classes:

**(1) (i) Motion pictures, as defined in 17 U.S.C. § 101, where the motion picture is on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or made available for digital download where:**

**(A) The circumvention is undertaken by a researcher affiliated with a nonprofit institution of higher education, or by a student or information technology staff member of the institution at the direction of such researcher, solely to deploy text and data mining techniques on a corpus of motion pictures for the purpose of scholarly research and teaching;**

**(B) The copy of each motion picture is lawfully acquired and owned by the institution, or licensed to the institution without a time limitation on access;**

**(C) The person undertaking the circumvention views or listens to the contents of the motion pictures in the corpus solely for the purpose of verification of the research findings; and**

**(D) The institution uses effective security measures to prevent further dissemination or downloading of motion pictures in the corpus, and to limit access to only the persons identified in paragraph (b)(4)(i)(A) of this section or to researchers affiliated with other institutions of higher education solely for purposes of collaboration or replication of the research.**

**(ii) For purposes of paragraph (b)(4)(i) of this section:**

**(A) An institution of higher education is defined as one that:**

- (1) Admits regular students who have a certificate of graduation from a secondary school or the equivalent of such a certificate;
- (2) Is legally authorized to provide a postsecondary education program;
- (3) Awards a bachelor's degree or provides not less than a two-year program acceptable towards such a degree;
- (4) Is a public or other nonprofit institution; and
- (5) Is accredited by a nationally recognized accrediting agency or association.

(B) The term "effective security measures" means security measures that have been agreed to by interested copyright owners of motion pictures and institutions of higher education; or, in the absence of such measures, those measures that the institution uses to keep its own highly confidential information secure. If the institution uses the security measures it uses to protect its own highly confidential information, it must, upon a reasonable request from a copyright owner whose work is contained in the corpus, provide information to that copyright owner regarding the nature of such measures.

(2) (i) Literary works, excluding computer programs and compilations that were compiled specifically for text and data mining purposes, distributed electronically where:

(A) The circumvention is undertaken by a researcher affiliated with a nonprofit institution of higher education, or by a student or information technology staff member of the institution at the direction of such researcher, solely to deploy text and data mining techniques on a corpus of literary works for the purpose of scholarly research and teaching;

(B) The copy of each literary work is lawfully acquired and owned by the institution, or licensed to the institution without a time limitation on access;

(C) The person undertaking the circumvention views the contents of the literary works in the corpus solely for the purpose of verification of the research findings; and

(D) The institution uses effective security measures to prevent further dissemination or downloading of literary works in the corpus, and to

limit access to only the persons identified in paragraph (b)(5)(i)(A) of this section or to researchers or to researchers affiliated with other institutions of higher education solely for purposes of collaboration or replication of the research.

(ii) For purposes of paragraph (b)(5)(i) of this section:

(A) An institution of higher education is defined as one that:

- (1) Admits regular students who have a certificate of graduation from a secondary school or the equivalent of such a certificate;
- (2) Is legally authorized to provide a postsecondary education program;
- (3) Awards a bachelor's degree or provides not less than a two-year program acceptable towards such a degree;
- (4) Is a public or other nonprofit institution; and
- (5) Is accredited by a nationally recognized accrediting agency or association.

(B) The term "effective security measures" means security measures that have been agreed to by interested copyright owners of literary works and institutions of higher education; or, in the absence of such measures, those measures that the institution uses to keep its own highly confidential information secure. If the institution uses the security measures it uses to protect its own highly confidential information, it must, upon a reasonable request from a copyright owner whose work is contained in the corpus, provide information to that copyright owner regarding the nature of such measures.

## *H. Proposed Class 8: Literary Works—Accessibility*

### **1. Background**

#### **a. Summary of Proposed Exemption**

Petitioners American Council of the Blind, American Foundation for the Blind, National Federation of the Blind, Association for Education and Rehabilitation of the Blind and Visually Impaired, Library Copyright Alliance, Benetech/Bookshare, HathiTrust, and the Perkins Braille & Talking Book Library (collectively “Accessibility Petitioners”),<sup>675</sup> request modification of the current exemption permitting circumvention of access controls on e-books for accessibility purposes. Proponents seek to update the current exemption language to track recent changes to the Copyright Act as a result of the Marrakesh Treaty Implementation Act (“MTIA”).

Specifically, Accessibility Petitioners request the following modifications: (1) expanding the description of intended beneficiaries from “blind or other person with a disability” to any “eligible person, as such a person is defined in 17 U.S.C. 121;”<sup>676</sup> (2) expanding the copyrighted works covered by the exemption to include “literary work[s] and previously published musical work[s] that have been fixed in the form of text or notation;”<sup>677</sup> (3) adjusting the reference to the market price of a “mainstream” copy to instead refer to the price of an “inaccessible” copy;<sup>678</sup> and (4) requesting that if the Office determines that the import and export of accessible literary works pursuant to section 121A of the Copyright Act implicate section 1201(a), the regulatory language explicitly include section 121A activity within the scope of the new exemption.<sup>679</sup>

Proponents’ requested language is as follows, with proposed deletions indicated with strikethroughs and proposed additions indicated in italics:

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<sup>675</sup> Some of these organizations also filed comments in support of Classes 3 and 17. For simplicity, in this section, “Accessibility Petitioners” refers to the coalition of accessibility groups who filed comments in support of Class 8.

<sup>676</sup> Accessibility Petitioners Class 8 Initial at 7–8.

<sup>677</sup> *Id.* at 8; *see also* 17 U.S.C. § 121(a) (permitting reproduction and distribution of “copies or phonorecords of a previously published literary work or of a previously published musical work that has been fixed in the form of text or notation”).

<sup>678</sup> Accessibility Petitioners Class 8 Initial at 9.

<sup>679</sup> *See id.* at 8 (arguing that “the import and export of accessible copies of works consistent with Section 121A is sufficiently distinct and attenuated from any circumvention activity . . . because “Section 121A covers works that have already been remediated into accessible formats, and so any necessary circumvention entailed in the remediation would already be covered by the existing exemption and its proposed changes”).



Literary works *or previously published musical works that have been fixed in the form of text or notation*, distributed electronically, that are protected by technological measures that either prevent the enabling of read-aloud functionality or interfere with screen readers or other applications or assistive technologies:

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

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

AAP filed comments supporting the proposed exemption,<sup>680</sup> and FSF filed comments that were generally supportive but did not provide evidence or substantive argument regarding the specific proposal.<sup>681</sup> Joint Creators filed a comment stating that they do not oppose this exemption to the extent it is consistent sections 121 and 121A, and seeking clarification that inclusion of a new reference to “phonorecords” would not permit unauthorized access to phonorecords in which performances of musical works are fixed.<sup>682</sup>

For the reasons discussed below, the Register recommends that the proposed changes be adopted.

## **b. Overview of Issues**

In previous rulemakings, the Register has noted the significant role of e-books in improving accessibility for persons who are blind, visually impaired, or print disabled.<sup>683</sup> The Register has also recognized that many e-books are protected by TPMs that interfere with the proper operation of assistive technologies,<sup>684</sup> and thus has recommended adoption of exemptions to allow circumvention of such technological

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<sup>680</sup> AAP Class 8 Reply at 2 (agreeing that “it is appropriate to update the language of the existing exemption in the manner proposed in Proposed Class 8 in recognition of changes to U.S. law to implement the Marrakesh Treaty”).

<sup>681</sup> FSF Class 8 Initial at 2.

<sup>682</sup> Joint Creators Class 8 Opp’n at 2.

<sup>683</sup> 2015 Recommendation at 128; 2012 Recommendation at 16.

<sup>684</sup> 2018 Recommendation at 22; 2015 Recommendation at 128; 2012 Recommendation at 23.

measures.<sup>685</sup> The current exemption allows for circumvention by individuals and entities that qualify for the exceptions set forth in section 121 of the Copyright Act, also known as the “Chafee Amendment,” as it existed during the 2018 rulemaking. Under section 121, nonprofit organizations and government agencies that provide services to visually impaired persons may reproduce and distribute accessible versions of certain copyrighted works exclusively for use by such persons.<sup>686</sup>

After the 2018 rulemaking, Congress passed, and the President signed, the MTIA,<sup>687</sup> which updated section 121 and created a new section, 121A, to implement the United States’ obligations under the Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled (“Marrakesh Treaty”). Among other changes, the MTIA modified section 121 by expanding the works eligible for reproduction or distribution from nondramatic literary works to “published literary work[s]” and “previously published musical work[s] that ha[ve] been fixed in the form of text or notation.”<sup>688</sup> The MTIA also modified the scope of beneficiaries from individuals certified as having a disability to any “eligible person.”<sup>689</sup> As amended, an “eligible person” is someone who is (A) blind, (B) “has a visual impairment or perceptual or reading disability” that limits their ability to read printed works on similar terms as someone without an impairment or disability, or (C) is “otherwise unable, through physical disability, to hold or manipulate a book or to focus or move the eyes to the extent that would be normally acceptable for reading.”<sup>690</sup> Accessibility Petitioners request that the current e-books exemption for accessibility be updated to incorporate these statutory changes.

The proposed modifications encompass both “literary works” and “musical works that have been fixed in the form of text or notation,” and thus would place two categories of

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<sup>685</sup> 2018 Recommendation at 22–23; 2015 Recommendation at 136–37; 2012 Recommendation at 23–24.

<sup>686</sup> See 17 U.S.C. § 121(a), (d)(2).

<sup>687</sup> Pub. L. No. 115-261, 132 Stat. 3667 (2018).

<sup>688</sup> Compare 17 U.S.C. § 121(a), with 17 U.S.C. § 121(a) (2012) (covering only “previously published, nondramatic literary work[s]”).

<sup>689</sup> Compare 17 U.S.C. § 121(d)(3) (defining “eligible person”), with 17 U.S.C. § 121(d)(2) (2012) (defining “blind or other persons with disabilities” as individuals eligible to receive accessible materials under 2 U.S.C. § 135a); 2 U.S.C. § 135a (2018) (authorizing receipt of accessible materials by “blind and to other physically handicapped readers certified by competent authority”).

<sup>690</sup> 17 U.S.C. § 121(d)(3).

copyrightable works under a single exemption.<sup>691</sup> The Register will evaluate both categories together because the relevant analysis is the same for each.

## 2. Discussion

In the 2015 rulemaking, the Register concluded that “making e-books accessible to persons who are blind, visually impaired or print disabled is a noninfringing [fair] use.”<sup>692</sup> The Register has reviewed subsequent case law and has determined that the fair use analysis from 2015 remains reliable and is appropriate to consider in evaluating this class.

Proponents request several modifications to the current exemption. First, they seek to modify the beneficiary language to track section 121, changing language permitting access to works “lawfully obtained by a blind or other person with a disability” to those obtained by an “eligible person, as such a person is defined in 17 U.S.C. 121.”<sup>693</sup> After considering the record, the Register agrees that proponents have shown that they will face adverse effects if this language is not modified. Historically, this exemption has defined beneficiaries based on the text of section 121. For example, in 2012, proponents proposed a class that would be “limited to individuals with print disabilities as defined by 17 U.S.C. § 121,” and the Register recommended (and the Librarian adopted) the proposed language.<sup>694</sup> In 2015, the Register crafted an exemption that “reference[d] section 121 so that the intended beneficiaries of section 121 are able to benefit from the waiver on circumvention.”<sup>695</sup> With the class of beneficiaries under section 121 now modified by the MTIA, the Register finds it appropriate to amend the regulatory text to reflect the statute.<sup>696</sup>

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<sup>691</sup> See e.g., 2018 Recommendation at 13 (the “starting point” for defining a class of work “is the list of categories appearing in section 102 of title 17, such as literary works, musical works, and sound recordings,” but “the particular class of copyrighted works is intended to be a narrow and focused subset of the broad categories of works . . . identified in section 102”) (internal citations and alterations omitted).

<sup>692</sup> 2015 Recommendation at 135.

<sup>693</sup> Accessibility Petitioners Class 3 Initial at 7–8, 9.

<sup>694</sup> 2012 Recommendation at 17, 24–25; see also *id.* at 24 (modifying proposed regulatory language “to ensure that it is consistent with, but not an enlargement of, Section 121”).

<sup>695</sup> 2015 Recommendation at 137.

<sup>696</sup> As proponents note, the current exemption refers to section 121’s definition for the term “blind or other persons with disabilities.” See Accessibility Petitioners Class 8 Initial at 15; 37 C.F.R. § 201.40(b)(3)(i). That term is no longer defined in section 121. The prior version of section 121 defined the term by reference to the Pratt-Smoot Act’s provisions requiring recipients of accessible materials to be “certified by a competent authority,” but the Pratt-Smoot Act was

The Register also concludes that this adjustment does not alter the fair use analysis from prior rulemakings. In 2015, the Register concluded that making e-books accessible “to persons who are blind, visually impaired or print disabled” likely constituted fair use.<sup>697</sup> Congress’s modification of section 121 covers this same class of persons: an “eligible person” under the statute is someone who is “blind”; has “a visual impairment . . . and so is unable to read printed works to substantially the same degree as a person without an impairment or disability”; or “is otherwise unable, through physical disability, to hold or manipulate a book or to focus or move the eyes to the extent that would be normally acceptable for reading.”<sup>698</sup> The Office’s prior fair use analysis applies equally to this community. The 2015 analysis drew heavily from the Second Circuit’s decision in *Authors Guild v. HathiTrust*, in which HathiTrust provided full text access to anyone with a “print disability,” defined as “any disability that prevents a person from effectively reading printed material,” including “[b]lindness” and physical disabilities “that prevent a person from physically holding a book or turning pages.”<sup>699</sup> Because the *HathiTrust* holding addressed readers similarly situated to the “eligible persons” contemplated by section 121, making e-books accessible to that expanded class likely constitutes a fair use.

Second, proponents request that the exemption be expanded to encompass “previously published musical works that have been fixed in the form of text or notation.” As proponents point out, the MTIA expanded the scope of eligible works in section 121 from “nondramatic literary works” to include all “literary works and previously published musical works that have been fixed in the form of text or notation.”<sup>700</sup> The Marrakesh Treaty defines the relevant works as those “in the form of text, notation and/or related illustrations, whether published or otherwise made publicly available in

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amended to remove the certification requirement in December 2019. See 17 U.S.C. § 121(d)(2) (2012) (defining “blind or other persons with disabilities” as individuals eligible to receive accessible materials under 2 U.S.C. § 135a); 2 U.S.C. § 135a (2018) (authorizing lending of accessible materials to “blind and to other physically handicapped readers certified by competent authority”); Pub. L. 116-94 § 1403(a), 133 Stat. 2534, 3206 (2019) (amending 2 U.S.C. § 135a to remove certification language and permit materials to be loaned to “eligible persons” as defined in the current version of section 121).

<sup>697</sup> 2015 Recommendation at 135.

<sup>698</sup> 17 U.S.C. § 121(d)(3)(A)–(C).

<sup>699</sup> *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87, 91 (2d Cir. 2014). See 2015 Recommendation at 134–35 (discussing *HathiTrust* opinion and concluding that “making e-books accessible to persons who are blind, visually impaired or print disabled is a noninfringing use”).

<sup>700</sup> Accessibility Petitioners Class 8 Initial at 17 (quoting 17 U.S.C. § 121(a)).

any media.”<sup>701</sup> The Treaty specifically states that this definition includes “works in audio form, such as audiobooks,”<sup>702</sup> and the MTIA’s legislative history reads the reference to “illustrations” to require that section 121 be construed to permit the creation of accessible versions of a “textbook [that] includes graphs, maps, or tables of information.”<sup>703</sup>

The Register concludes that the creation of accessible versions of this expanded set of eligible works is similarly likely to be a noninfringing use. In 2015, the Register credited “the 1996 passage of the Chafee Amendment” as a basis for her conclusion that the requested use in the e-books exemption was likely noninfringing.<sup>704</sup> The Office reaches the same conclusion with respect to the recent modifications to section 121. Additionally, as noted, the Second Circuit in *HathiTrust* found that “providing print-disabled patrons with accessible versions of works in a library’s digital archive” is a fair use.<sup>705</sup> Though the copyrighted works in *HathiTrust* were books, the Register concludes that the fair use analysis is not different when applied to a musical work fixed in the form of text or notation. In each of these cases, a print disability results in the inability to access the work. Providing accessibly for this larger set of works is fair use because it “is not merely a matter of convenience, but is instead intended to enable individuals who are blind or visually impaired to have meaningful access to the same content that individuals without such impairments are able to perceive.”<sup>706</sup>

Third, proponents seek to replace the phrase “mainstream copy” in the regulatory language with “inaccessible copy” on the ground that the current language “is an ableist framing that implies accessible format copies are not ‘mainstream.’”<sup>707</sup> Proponents describe this change as non-substantive, and the Register agrees. The Register recommends replacing this language.<sup>708</sup>

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<sup>701</sup> Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled, art. 2(a), June 27, 2013, S. Treaty Doc. No. 114-6, 52 I.L.M. 1312 (“Marrakesh Treaty”).

<sup>702</sup> *Id.*, art. 2(a) n.1.

<sup>703</sup> S. REP. No. 115-261 at 3 (2018).

<sup>704</sup> 2015 Recommendation at 133–34.

<sup>705</sup> *Id.* at 134.

<sup>706</sup> *Id.* at 136 (quoting 2012 Recommendation at 122).

<sup>707</sup> Accessibility Petitioners Class 8 Initial at 9.

<sup>708</sup> The phrase “mainstream copy” originates from the 2012 rulemaking, in which the American Foundation for the Blind asserted that “the publisher or rights owner should be compensated for [] the price of the mainstream book available to the general public because that’s the standard against which we would measure fairness.” 2012 Hearing Tr. at 34:06–09 (June 5, 2012) (Richert,

Fourth and finally, the Register declines to modify the exemption to include section 121A activity because the record does not indicate that such activity implicates section 1201(a)(1)(A)'s prohibition on circumvention of access controls. Section 121A permits the import and export of accessible works to and from other Marrakesh signatory countries, subject to certain requirements.<sup>709</sup> Proponents have argued without opposition<sup>710</sup> that any works imported or exported under section 121A would be works that "have already been remediated into accessible formats, and so any necessary circumvention entailed in the remediation would already be covered by the existing exemption and its proposed changes."<sup>711</sup> There is no evidence in the record that the import or export of works covered by section 121A involves circumventing technological protection measures, and it seems unlikely that activity such as the shipment of accessible physical copies or the transmission of accessible digital copies would implicate the bar on circumvention of access controls.

Turning to the section 1201 statutory factors, the Register finds that each factor weighs in favor of the modifications requested in this class. For the first three statutory factors, conforming the current exemption to the changes in section 121 as a result of the Marrakesh Treaty will increase the availability of copyright works for print-disabled persons. The expanded exemption will make accessible versions of works more available to print-disabled readers, and will allow those readers to engage in activities contemplated by the second and third statutory factors, such as educational use, comment, criticism, teaching, and research. For the fourth factor, there is no evidence that modifying the exemption to match the revisions to section 121 will undermine the market for literary works or musical works fixed in text or notation. By requiring that copies of works under this exemption be lawfully obtained, it instead seems likely that this exemption will support the market for these works.

Finally, the statute permits the Librarian to consider "such other factors" as appropriate. The Marrakesh Treaty explicitly requires signatories to ensure that legal protection for technological protection measures "does not prevent beneficiary persons from enjoying the limitations and exceptions provided for in this Treaty."<sup>712</sup> The Register finds that

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American Foundation for the Blind); *see also* 2012 Recommendation at 23–24 (citing hearing and describing remuneration language drawn from the hearing as ensuring exemption "comports both with copyright law and proponents' intent").

<sup>709</sup> 17 U.S.C. § 121A.

<sup>710</sup> At the hearing, Joint Creators stated that they do not have a position and are not opposing proponents on this issue. *See* Tr. at 131:05–12 (Apr. 5, 2021) (Castillo, Joint Creators).

<sup>711</sup> Accessibility Petitioners Class 8 Initial at 8.

<sup>712</sup> Marrakesh Treaty, art. 7.

adapting the current exemption to reflect the recent statutory changes is consistent with this obligation.

### 3. NTIA Comments

NTIA supports the requested changes in this class. It explains that “[m]any of these proposed changes are necessary to be consistent” with the MTIA, and it supports the parties’ proposed language to clarify treatment of sound recordings of musical works.<sup>713</sup> In addition, NTIA supports removal of the reference to “mainstream” copies in the remuneration requirement, agreeing that this amendment is nonsubstantive and “does not change the overall 1201 analysis.”<sup>714</sup>

### 4. Conclusion and Recommendation

Proponents have demonstrated that, absent modifications to the current e-book exemption for accessibility, print-disabled individuals will face adverse effects in their ability to make noninfringing use of copyrighted literary works and musical works fixed in the form of text or notation. Because proponents have met their burden of proof, and there is no opposition to the modifications requested by proponents, the Register recommends granting the requested exemption with slight modification as discussed below.

The only concern raised in this class was whether the term “phonorecords,” which was added to section 121 by the MTIA, includes sound recordings of performances of musical works. Joint Creators sought clarification from the Office that the term would not include such sound recordings, pointing out that such recordings were not the subject of the Marrakesh Treaty.<sup>715</sup> Proponents do not contest this point, stating that they understood the term “phonorecords” to be included in the Marrakesh Treaty and subsequent implementation primarily “to clarify that audiobooks and similar aural renderings of covered literary works and musical notation can be remediated into accessible formats.”<sup>716</sup> Accessibility Petitioners and Joint Creators jointly proposed regulatory language providing that the term “phonorecords” does not include sound recordings of performance of musical works, “unless and only to the extent the recording is included as part of an audiobook or e-book.”<sup>717</sup> The Register agrees that this language addresses the concerns raised, and she recommends its inclusion.

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<sup>713</sup> NTIA Letter at 59–60.

<sup>714</sup> *Id.* at 60.

<sup>715</sup> Joint Creators Class 8 Opp’n at 2.

<sup>716</sup> Accessibility Petitioners Class 8 Reply at 8.

<sup>717</sup> Joint Class 8 Post-Hearing Resp. at 2 (May 14, 2021).

Finally, though no parties have raised this issue, the Register considers whether the proposed language appropriately comprises a single “class of works.” While this exemption previously has been limited to literary works, adapting the new language from section 121 results in a class comprising both literary works and musical works, provided the latter have been previously published and are fixed in the form of text or notation. Based on section 1201’s legislative history, the Register historically has defined classes of works as a “narrow and focused subset” of the broader categories of works in section 102, which serve as a “starting point” in defining a class.<sup>718</sup> For that reason, the Register has generally declined to recommend exemptions that span more than one section 102 category.<sup>719</sup> Here, however, Congress adopted a statutory provision grouping these two categories of works together for purposes of the relevant copyright exceptions. Moreover, for the reasons discussed above, the adverse effects analysis for literary works and certain musical works is the same in this context. The Register therefore finds it appropriate to include both categories in a single exemption.

The Register accordingly recommends that the Librarian designate the following class:

**(i) Literary works or previously published musical works that have been fixed in the form of text or notation, distributed electronically, that are protected by technological measures that either prevent the enabling of read-aloud functionality or interfere with screen readers or other applications or assistive technologies:**

**(A) When a copy or phonorecord of such a work is lawfully obtained by an eligible person, as such a person is defined in 17 U.S.C. § 121; provided, however, that the rights owner is remunerated, as appropriate, for the market price of an inaccessible copy of the work as made available to the general public through customary channels; or**

**(B) When such a work is lawfully obtained and used by an authorized entity pursuant to 17 U.S.C. § 121.**

**(ii) For the purposes of paragraph (b)(6)(i) of this section, a “phonorecord of such a work” does not include a sound recording of a performance of a musical**

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<sup>718</sup> See 2018 Recommendation at 13 (emphasis omitted) (quoting House Manager’s Report at 7; Commerce Comm. Report at 38).

<sup>719</sup> See 2006 Recommendation at 80–83 (rejecting classes of “[a]ll works and fair use works” and “[a]ll works protected by access controls that prevent the creation of backup copies” for failure to articulate a specific class of works); 2003 Recommendation at 82–84 (rejecting class of “all works . . . for noninfringing uses” because a class of works must be “some subset of the section 102 categories of works”).



work unless and only to the extent the recording is included as part of an audiobook or e-book.

*I. Proposed Class 9: Literary Works—Medical Device Data*

**1. Background**

**a. Summary of Proposed Exemption**

Several members of the Coalition of Medical Device Patients and Researchers (“Coalition”),<sup>720</sup> seek to expand the current exemption for medical device data by removing several limitations imposed when the rule was adopted in 2015. First, they seek to eliminate the language limiting the exemption to “wholly or partially implanted” medical devices.<sup>721</sup> Second, they seek to expand the current exemption to “permit third parties to perform the circumvention, with permission, on behalf of the patient.”<sup>722</sup> Third, they request that the Librarian remove the limitation that circumvention be accomplished via the “passive monitoring of wireless transmissions.”<sup>723</sup> Finally, they seek to remove the requirement that circumvention not violate other applicable laws.<sup>724</sup>

Taken together, proponents’ requested language is as follows:

Literary works consisting of compilations of data generated by medical devices or by their corresponding personal monitoring systems, where such circumvention is undertaken by or on behalf of a patient for the sole purpose of lawfully accessing the data generated by their own device or monitoring system.<sup>725</sup>

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<sup>720</sup> Coalition member Hugo Campos filed the petition for this class, *see* Hugo Campos Class 9 Pet., and subsequent comments were filed by the Coalition. *See* Coal. of Med. Device Patients & Researchers (“Coalition”) Class 9 Initial; Coalition Class 9 Reply. For simplicity, the Register will refer to the proponents as the “Coalition” in discussing this class.

<sup>721</sup> Hugo Campos Class 9 Pet. at 2.

<sup>722</sup> *Id.*

<sup>723</sup> Coalition Class 9 Initial at 3.

<sup>724</sup> *Compare id.*, with 37 C.F.R. § 201.40(b)(4).

<sup>725</sup> Coalition Class 9 Initial at 3. *Compare* 37 C.F.R. § 201.40(b)(4), with Coalition Class 9 Initial at 3, and Hugo Campos Class 9 Pet. at 2.

FSF and an anonymous commenter filed brief comments in support of the petition.<sup>726</sup> ACT | The App Association (“ACT”) filed a comment opposing the petition.<sup>727</sup>

For the reasons discussed below, the Register recommends that the proposed amendments be adopted.

### **b. Overview of Issues**

As described in greater detail in the 2015 Recommendation, many medical devices “measure and record data about physiological developments taking place within the body, and communicate that data wirelessly to equipment maintained at hospitals or doctors’ offices, or to corresponding personal monitoring systems.”<sup>728</sup> Some personal monitoring systems also “transmit data to a monitoring company and ultimately to the patient’s physician.”<sup>729</sup> In both circumstances, the transmission of data between the medical device or personal monitoring system is “[i]ncreasingly . . . protected by TPMs, including encryption schemes.”<sup>730</sup> Without circumventing these TPMs, patients cannot access the data outputs generated by their medical devices or personal monitoring systems without visiting a hospital or doctor’s office.<sup>731</sup>

In 2015, the Register found that proponents had demonstrated that patient access to medical data generated by implanted medical devices or their corresponding personal monitoring systems was, or was likely to be, “hindered by TPMs that protect data outputs of those devices and systems.”<sup>732</sup> The Register also concluded that the “use of TPMs will likely increase in the next three years.”<sup>733</sup> The Register’s adverse effects

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<sup>726</sup> FSF Class 9 Initial at 2 (stating “[u]sers of medical devices should not fear legal consequences for accessing information on their own devices”); Anonymous Class 9 Initial (agreeing that “[p]atients who have medical devices should absolutely have an accessible way to review their body’s data”).

<sup>727</sup> ACT Class 9 Opp’n. Morgan Reed, ACT’s president, filed the opposition comment and testified at the hearing for this class “in [his] role as the Executive Director of The Connected Health Initiative,” which is an initiative of ACT. Tr. at 525:20–23 (Apr. 8, 2021) (Reed, ACT); see Morgan Reed, *Connected Health Initiative Sees Positive Movement in FDA Guidance*, CONNECTED HEALTH (Dec. 7, 2017), <https://www.connectedhi.com/blog/2017/12/7/connected-health-initiative-sees-positive-movement-in-fda-guidance> (describing the Initiative as “ACT | The App Association’s Connected Health Initiative”).

<sup>728</sup> 2015 Recommendation at 378.

<sup>729</sup> *Id.*

<sup>730</sup> *Id.*

<sup>731</sup> *Id.* at 386.

<sup>732</sup> *Id.* at 401.

<sup>733</sup> 2015 Recommendation at 392.

finding was based on proponents' explanations that patient access to medical device data was limited or was only shared with patients for a fee and that the data could be used to improve patient care and health.<sup>734</sup> The Register also found that the circumvention prohibition prevented patients from "real-time monitoring of their own health status, including medical incidents reflected in data outputs."<sup>735</sup>

The Register further determined that, based on the record before her, limitations were required to ensure that the exemption was properly tailored. First, the Register recommended limiting the exemption to "wholly or partially implanted" devices because proponents had provided a record only for such devices.<sup>736</sup> Second, the Register declined to recommend circumvention "at the direction of a patient" because she concluded that phrase could "implicate the anti-trafficking provisions set forth in section 1201(a)(2) and (b)."<sup>737</sup> Third, the Register limited the recommended exemption to circumvention undertaken "solely for the purpose of passively accessing data that is already being generated or transmitted by the device," as the record indicated that broader uses would increase the power demands on devices and therefore could impact the device's battery life.<sup>738</sup> Lastly, the Register recommended that "any actions taken under the exemption . . . be compliant with all applicable laws and regulations," as "[t]hese laws and others, as well as FDA regulatory oversight, provide critical legal protections in relation to medical devices and their related computer systems and should be carefully studied by those seeking to take advantage of the exemption."<sup>739</sup>

During the seventh triennial rulemaking, the Office recommended, and the Librarian approved, the granting of Mr. Campos's petition to renew the exemption.<sup>740</sup> No comments were filed in opposition.

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<sup>734</sup> *Id.* at 382, 386–87.

<sup>735</sup> *Id.* at 397.

<sup>736</sup> *See id.* at 379–380 ("While in its petition MDRC also referred to 'devices [that] are designed for attachment' as well as implantation in patients, MDRC's subsequent filings and the remainder of the record demonstrate that the proposed exemption is not intended to encompass attached devices that are neither wholly nor partially implanted.").

<sup>737</sup> 2015 Recommendation at 401–02.

<sup>738</sup> *Id.* at 401. The record also reflected that the request was limited to circumventing TPMs on wireless transmissions. *See id.* at 380, 382 & n.2556.

<sup>739</sup> *Id.* at 401–02.

<sup>740</sup> 2018 Recommendation at 23 ("Mr. Campos's petition demonstrated the continuing need and justification for the exemption, stating that patients continue to need access to data output from their medical devices to manage their health."); *see also* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 83 Fed. Reg. 54,010, 54,028 (Oct. 26, 2018) (determination of Librarian issuing renewed exemption).

Currently, proponents set forth several arguments as to why the Register should expand the current exemption and remove these limitations. First, proponents assert that removing the “wholly or partially implanted” language would allow the exemption to encompass non-implanted medical devices, and patients need access to medical data from such devices “in much the same way they need access to their data from implanted devices.”<sup>741</sup> Second, proponents argue that “passive monitoring” “is not a sufficient means for patients” who use certain types of medical devices that “do not transmit data wirelessly.”<sup>742</sup> Third, proponents state that, absent the ability for third parties to conduct the circumvention, the “practical application” of the current exemption is “incredibly slim” because “[t]he vast majority of patients likely do not have the technical knowledge required to circumvent a TPM on their own.”<sup>743</sup> Lastly, proponents argue that references to other applicable laws “should not underly any decision about the scope or appropriateness of an exemption,”<sup>744</sup> as “the DMCA is concerned with copyright considerations, not other regulatory policy.”<sup>745</sup>

## 2. Discussion

### a. Works Protected by Copyright

As the Register explained in 2015, in many cases, data generated by medical devices “simply reflect[s] an unoriginal stream of data consisting of facts about the patient’s physiological condition” and thus is not protected by copyright.<sup>746</sup> Where that is the case, proponents do not need an exemption to engage in their desired uses because any TPMs on those medical devices would not “effectively control[] access to a [copyrighted] work.”<sup>747</sup>

It is undisputed, however, that some medical device data outputs “might qualify for protection as literary works if they reflect a sufficiently original selection and presentation of data.”<sup>748</sup> In those cases, section 1201 would apply to circumvention of

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<sup>741</sup> Hugo Campos Class 9 Petition at 2.

<sup>742</sup> Coalition Class 9 Reply at 3.

<sup>743</sup> Coalition Class 9 Initial at 11.

<sup>744</sup> *Id.* at 13.

<sup>745</sup> Coalition Class 9 Reply at 4.

<sup>746</sup> See 2015 Recommendation at 393.

<sup>747</sup> 17 U.S.C. § 1201(a)(1)(A).

<sup>748</sup> 2015 Recommendation at 393; see *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 348 (1991) (holding that factual compilations may be copyrightable where the “choices as to selection and arrangement, so long as they are made independently by the compiler and entail a minimal degree of creativity, are sufficiently original”). In the current rulemaking, ACT did not dispute that the relevant data outputs may be copyrightable.

TPMs that control access to the data outputs generated by medical devices or personal monitoring systems. The Register therefore finds that at least some of the works in the proposed class are protected by copyright.

### **b. Asserted Noninfringing Uses**

In 2015, the Register found that “accessing personal medical data is likely to be noninfringing as a fair use.”<sup>749</sup> She reached this conclusion because the use was for the noncommercial purpose of “access[ing] potentially life-saving data,” the copyrighted material at issue was “highly factual,” and the amount of the copyrighted material used was no more than necessary for the use.<sup>750</sup> She also found that market harm was unlikely because there was “no indication that the desired uses will usurp the market for medical devices, their corresponding monitoring systems, the copyrighted computer programs within those devices and systems, or the data outputs generated by those devices and systems.”<sup>751</sup> Opponents have not questioned the 2015 fair use analysis in this proceeding,<sup>752</sup> and the Register finds that the analysis remains sound.

The Register will next consider whether proponents’ requested expansions to non-implanted devices and non-passive monitoring describe fair uses. Proponents’ requests to permit third parties to perform circumvention and to remove the other applicable laws limitation are discussed in the context of adverse effects.<sup>753</sup>

#### *i. Non-implanted Devices*

Proponents argue that the use of data outputs from non-implanted medical devices is fair use for essentially the same reasons as described in the Office’s 2015 analysis for implanted devices.<sup>754</sup> For example, proponents argue that, regardless of whether data is

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<sup>749</sup> See 2015 Recommendation at 394.

<sup>750</sup> *Id.* at 394–96.

<sup>751</sup> *Id.* at 396.

<sup>752</sup> See ACT Class 9 Opp’n at 4 (questioning whether the exemption complies with “the complex legal, regulatory, and voluntary standards regimes involved in the development of medical devices” but not whether as a matter of copyright law the exemption addresses activity that constitutes fair use).

<sup>753</sup> Proponents advance a fair use argument addressing researcher use of patients’ data outputs. See Coalition Class 9 Initial at 8–9. But proponents have not requested new exemption language for that purpose, instead retaining the requirement that circumvention be done “for the sole purpose of lawfully accessing the data generated” by a patient’s device. *Id.* at 3. Because proponents have not argued that researchers are adversely affected by the current exemption, the Register does not need to consider whether such researchers are engaging in a noninfringing use.

<sup>754</sup> Coalition Class 9 Initial at 7 (arguing proposed exemption “is no different than the original one with respect to fair use”).

gathered from an implanted or non-implanted medical device, their proposed use is transformative under the first fair use factor because patients with access to the raw medical data can use new visualizations or analysis to gain “new insights and understandings,”<sup>755</sup> and “draw conclusions about their health that they would be unable to appreciate otherwise.”<sup>756</sup> Proponents also draw attention to the second fair use factor, noting the factual nature of any copyrightable compilations of medical data makes such data “far from the ‘core of intended copyright protection’ because it is informational rather than creative.”<sup>757</sup>

Based on her prior fair use analysis, the record provided by proponents, and the lack of fair use arguments advanced by opponents, the Register concludes that the expansion from implanted to non-implanted devices is encompassed within the prior determination that accessing medical data from a device is fair use.<sup>758</sup> The Register’s prior conclusion did not turn on the particular devices generating that data but rather on the nature of the data and how proponents intended to use it.<sup>759</sup> The Register also notes that, as in 2015, opponents have not offered evidence that there is a market for the data outputs themselves, separate from the market for medical devices.<sup>760</sup> Thus, the Register concludes that proponents have shown that patient access to medical data from non-implanted devices is likely to be a noninfringing use.

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<sup>755</sup> *Id.* at 8 (quoting *Castle Rock Ent., Inc. v. Carol Publ’g Grp., Inc.*, 150 F.3d 132, 141 (2d. Cir. 1998)).

<sup>756</sup> *Id.* at 8; see also 2015 Recommendation at 395 (concluding that “to the extent [medical] data is being reinterpreted and/or recompiled to allow more insights into a patient’s health status, the use may well be a transformative one”).

<sup>757</sup> Coalition Class 9 Initial at 8 (quoting *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 586 (1994)); see also 2015 Recommendation at 395 (finding that “even if data outputs are copyrightable, they are nonetheless highly factual in nature” and that the use is focused on the data itself rather than its compilation).

<sup>758</sup> See 2015 Recommendation 394–97. During the hearing, ACT’s representative seemed to concede that the location of the device (*i.e.*, whether the device is implanted or non-implanted) should not affect the noninfringing use analysis, stating that the issue “ends up being a distinction without a difference” and “not the primary area of concern.” Tr. at 536:13–23 (Apr. 8, 2021) (Reed, ACT).

<sup>759</sup> See 2015 Recommendation at 394–97 (giving weight to, among other factors, the “highly factual” nature of medical data and the “highly personal, noncommercial and research-oriented nature of the uses at issue”).

<sup>760</sup> *Id.* at 396.

*ii. Non-passive Monitoring*

Based on proponents' comments and hearing testimony, the Office understands non-passive monitoring to mean assessing data outputs through non-wireless means.<sup>761</sup> For example, proponents provide the example of "manually reading data outputs stored on SD cards in CPAP machines," as those machines "store data exclusively on removeable SD cards and do not transmit data wirelessly."<sup>762</sup> At the hearing, proponents described other types of non-passive monitoring that may occur in the future, including "reading the memory off your phone" when a medical device connects to and stores health data on a patient's phone.<sup>763</sup> At a technical level, this could include "actively connect[ing] to a medical device or a receiver on that device to request the data from a program on that device," and "actively intercept[ing] the data while the data is in route to a server from the device."<sup>764</sup> Proponents do not specifically address non-passive monitoring in their fair use analysis, arguing instead that "[a]ll four factors remain the same, regardless of the manner of acquiring the data."<sup>765</sup>

The Register agrees that this activity as so defined also likely constitutes fair use. As proponents note, the purpose and character of the proposed use do not change when circumvention occurs through non-passive means.<sup>766</sup> The second fair use factor also weighs in favor of fair use, as the data outputs are still "highly factual," regardless of whether they are accessed through passive or non-passive means.<sup>767</sup> Regarding the third fair use factor, the Register previously found that use of the entire work "may be necessary," and there is no evidence in the record that different methods of accessing medical device data use different amounts of the work.<sup>768</sup> Finally, the Register finds that the fourth factor weighs in favor of fair use, as nothing in the record suggests that the

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<sup>761</sup> See Coalition Class 9 Initial at 11; Coalition Class 9 Reply at 3, 5; see also 2015 Recommendation at 381.

<sup>762</sup> Coalition Class 9 Reply at 3, 5.

<sup>763</sup> Tr. at 546:20–547:04 (Apr. 8, 2021) (Zemoudeh, Coalition); see also Tr. at 552:08–13 (Apr. 8, 2021) (Zemoudeh, Coalition) ("[I]f you were to read data off the memory of your phone . . . [t]hat would just be data on the memory of your phone that you read.").

<sup>764</sup> Tr. at 547:05–547:16 (Apr. 8, 2021) (Zemoudeh, Coalition).

<sup>765</sup> Coalition Class 9 Initial at 7.

<sup>766</sup> See *id.* at 11 (noting that expanding the exemption "would open new avenues for data access even for devices covered by the existing exemption, allowing the search for and use of better, more efficient, or more easily accessible methods of circumvention, thereby expanding lawful access to personal medical data"); see also *id.* ("For the purposes of copyright law, there is no meaningful difference between passive monitoring and other forms of circumvention.").

<sup>767</sup> 2015 Recommendation at 395.

<sup>768</sup> See 2015 Recommendation at 396 & n.2658.



expansion would negatively affect the potential market for or value of data outputs. ACT makes the general argument that the exemption would “negatively impact the ability of app developers to successfully compete in the mobile health marketplace and protect users from risk of malfunctioning devices and data breaches,”<sup>769</sup> but, as noted above, has not provided any evidence of market harm or substitution. Instead, ACT’s assertions relate to proponents accessing medical device software for purposes other than accessing data outputs, which would be outside the scope of the proposed exemption.<sup>770</sup>

Based on the foregoing, the Register concludes that accessing data outputs from medical devices is likely a fair use, regardless of whether the data is accomplished through passive or non-passive monitoring.

### c. Causation

The Register finds that proponents have met their burden of showing that the statutory prohibition on circumvention of access controls limits their ability to engage in the proposed uses. But for the prohibition, users likely could gain lawful access to the data outputs on medical devices or personal monitoring systems for these purposes.<sup>771</sup>

### d. Asserted Adverse Effects

Proponents argue that their ability to access data outputs is adversely affected by the limitations in the current exemption. The Register considers these challenged provisions individually, then addresses the section 1201 statutory factors in relation to the proposed exemption as a whole.

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<sup>769</sup> ACT Class 9 Opp’n at 5. ACT makes this specific assertion with regard to the fourth section 1201 statutory factor. As the fourth statutory factor closely mirrors the fourth fair use factor, the Register mentions ACT’s statement here as well.

<sup>770</sup> See *id.* at 5–6. But see Tr. at 553:02–05 (Apr. 8, 2021) (Pearlman, Coalition) (“[I]f someone were . . . to access the firmware for purposes other than accessing their medical data, that that would still be outside our proposed exemption.”); Tr. at 552:05–16 (Apr. 8, 2021) (Zemoudeh, Coalition) (“[I]t is unlikely that any of these non-passive monitoring techniques would alter the software or firmware of the device.”); Coalition Class 9 Reply at 5 (“[C]ircumventing TPMs to access proprietary code for copyright infringement purposes or to access other patients’ medical data would fall outside the scope of the proposed exemption.”).

<sup>771</sup> ACT argues that the cause of proponents’ concern “is not an inability to get the data but rather ‘a substantial shortage of sleep apnea specialists across the United States’ who can provide patients with appropriate treatment.” ACT Class 9 Opp’n at 3 (quoting Coalition Class 9 Initial at 7). The record, however, supports the conclusion that the prohibition on circumvention is the cause of users’ inability to access the data for the noninfringing uses they describe.

*i. Individual Limitations*

*Wholly or Partially Implanted Devices.* Proponents contend that this provision puts patients with non-implanted devices “at an unnecessary disadvantage” because “[w]ithout direct access to their data, access may be significantly delayed or patients may find it difficult or impossible to combine it with data from other sources, either of which can adversely affect the patient’s ability to manage their own personal health.”<sup>772</sup> Proponents also contend that “[p]atients need real-time access to their data from non-implanted medical and wellness devices and corresponding personal monitoring systems in much the same way they need access to their data from implanted devices. Many current and upcoming devices obtain medical data about a patient without the need to be fully or partially implanted in the body.”<sup>773</sup>

Specifically, proponents provide the example of CPAP machines, which are non-implantable devices, and describe how patients could use CPAP machine data to adjust their machines and enhance their treatment and health.<sup>774</sup> Proponents contend that they cannot rely on the data directly provided on the machines’ displays because the algorithms in CPAP machines could provide inaccurate readings, such as “overestim[ing] and underestimate[ing] patients’ [apnea-hypopnea indices (‘APIs’)],” which presents a risk that “patients may not make proper air pressure or mask adjustments to treat their sleep apnea.”<sup>775</sup> By conducting manual analysis of the data outputs, however, patients “can reveal false positives and false negatives that algorithms either use or fail to use in calculating patients’ APIs.”<sup>776</sup> Proponents also discuss wearable cardioverter-defibrillators and hearing aids as examples of non-implanted devices whose data patients can access to make health assessments but for the prohibition on circumvention.<sup>777</sup> ACT does not challenge these examples.

After considering the record of these non-implantable devices, the Register agrees that the exclusion of non-implanted devices from the exemption is likely to disadvantage

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<sup>772</sup> Hugo Campos Class 9 Pet. at 2; *see also* Tr. at 526:15–527:06 (Apr. 8, 2021) (McClellan, Coalition) (noting patients’ need for access to data outputs regardless of the location of the device and listing examples of non-implanted devices).

<sup>773</sup> Hugo Campos Class 9 Pet. at 2.

<sup>774</sup> *See* Coalition Class 9 Initial at 5–7.

<sup>775</sup> *See id.* at 6.

<sup>776</sup> *Id.* “API” stands for apnea-hypopnea index, which calculates the number of pauses in breathing, and is “determined by tracking the number of collapses and near-collapses of the airway per hour.” *Id.*

<sup>777</sup> Coalition Class 9 Initial at 9–10 (discussing that patients’ data is only available to physicians); Coalition Class 9 Reply at 3; *see also* Tr. at 526:15–21 (Apr. 8, 2021) (McClellan, Coalition) (listing wearable cardioverter-defibrillators and hearing aids as examples of non-implanted devices).

patients who use such devices. If the exemption is not expanded to these devices, owners of these devices will be unable to access data outputs for the same noninfringing purposes as owners of wholly or partially implanted devices.

*Passive Monitoring.* In 2015, the passive monitoring limitation was included to address concerns that increased requests for data outputs could impact a device’s battery life and effectiveness.<sup>778</sup> Proponents argue that this limitation prevents patients from accessing data outputs on certain devices, such as those that store data locally rather than transmit it wirelessly.<sup>779</sup> As an example, proponents point out that “older [CPAP] models store data only on an SD card” and contend that retrieving medical data from the SD card “does not have any negative effects on the machine” because manufacturers “already contemplated” that patients may need to upload data from an SD card.<sup>780</sup> Proponents also assert that the limitation leaves patients “unable to experiment with alternative and perhaps more efficient or effective ways to access their medical data” from devices.<sup>781</sup> Additionally, proponents contend that the limitation “forces patients to enable wireless capabilities to access [the] data, which makes their data and devices more vulnerable to intrusion from third parties.”<sup>782</sup>

Opponents assert that the removal of the passive monitoring limitation would provide unauthorized access to the underlying software in medical devices, creating a risk that the software could be modified in harmful ways.<sup>783</sup> At the hearing, ACT’s representative asserted that non-passive monitoring is akin to “hacking the device,” which “puts patient safety at risk and really puts us at odds with what our regulators are asking us to do in these other environments.”<sup>784</sup> Opponents also argue that patients are not adversely affected by this limitation because patients “have other legal options to obtain their health data and to file complaints,” such as taking advantage of regulations under the Cures Act or filing complaints with the FDA.<sup>785</sup>

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<sup>778</sup> 2015 Recommendation at 401

<sup>779</sup> Coalition Class 9 Initial at 11; *see also* Coalition Class 9 Reply at 3.

<sup>780</sup> Coalition Class 9 Initial at 11; *see also* Coalition Class 9 Reply at 3 (“[M]any older models of CPAP machines store data exclusively on removeable SD cards and do not transmit data wirelessly, thereby making it impossible for the data from these machines to be accessed through passive monitoring of wireless transmissions.”).

<sup>781</sup> Coalition Class 9 Initial at 11.

<sup>782</sup> *Id.*

<sup>783</sup> *See* ACT Class 9 Opp’n at 5–6; Tr. at 534:21–535:09 (Apr. 8, 2021) (Reed, ACT).

<sup>784</sup> Tr. at 536:07–10 (Apr. 8, 2021) (Reed, ACT).

<sup>785</sup> ACT Class 9 Opp’n at 3. Proponents respond that because FDA guidelines “heavily encourage the use of TPMs to protect patient data in medical devices,” they remain likely to experience

Proponents disagree that non-passive monitoring techniques would affect the software in medical devices.<sup>786</sup> For example, they explain that requesting data outputs from a program on the device, reading data outputs off a telephone that collects patient data, and manually reading data off SD cards in CPAP machines, do not alter or implicate the device's software, as these activities only involve requesting and reading data outputs, respectively.<sup>787</sup> Additionally, proponents assert that the proposed expansion is crafted in such a way that accessing the firmware "for purposes other than accessing [patient] medical data" would constitute a violation of section 1201.<sup>788</sup>

The Register concludes that proponents have shown likely adverse effects on noninfringing uses from the current passive monitoring limitation. The record reflects that patients seek to access their medical data through non-passive means for the same purposes contemplated by the current exemption. The Register acknowledges opponents' concern that some methods of non-passive monitoring may involve access to medical device software code but believes that the proposed regulatory language addresses their concerns.

*Circumvention by Patients.* During the 2015 rulemaking, the Register recommended that the exemption be limited to circumvention undertaken by patients themselves, explaining that an expansion to allow circumvention by third parties could implicate the anti-trafficking provisions of sections 1201(a)(2) and (b).<sup>789</sup> Proponents urge the Register to expressly include language permitting third parties to circumvent TPMs on medical devices on behalf of patients wishing to access their data outputs.<sup>790</sup> According to proponents, the current exemption is limited to patients with a "degree in computer science," as a "vast majority" of patients do not have the knowledge needed to

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adverse effects within the next three years regardless of any alternatives to circumvention. *See* Coalition Class 9 Initial at 14–15; *see also* Coalition Class 9 Reply at 3–4 (noting that ACT failed to "provide any information detailing any examples, let alone statistics, regarding whether the Cures Act helps patients obtain TPM-protected data").

<sup>786</sup> Tr. at 552:05–16 (Apr. 8, 2021) (Zemoudeh, Coalition); *see also* Tr. at 544:07–17 (Apr. 8, 2021) (Zemoudeh, Coalition).

<sup>787</sup> Tr. at 544:07–17, 552:05–16 (Apr. 8, 2021) (Zemoudeh, Coalition); Coalition Class 9 Initial at 11; Coalition Class 9 Reply at 5; *see also* Coalition Class 9 Initial at 6–7 (listing examples of ways that SD cards in CPAP machines can be used to access data outputs without implicating the device's software). *But see* Tr. at 553:12–17 (Apr. 8, 2021) (Pearlman, Coalition) ("[T]here might be some circumstances in which there is overlap, that in order to get to the data, something else is inadvertently accessed even though it's not used for any purpose.").

<sup>788</sup> Tr. at 553:02–05 (Apr. 8, 2021) (Pearlman, Coalition); *see also* Coalition Class 9 Reply at 2.

<sup>789</sup> 2015 Recommendation at 401.

<sup>790</sup> *See* Hugo Campos Class 9 Pet. at 2; Coalition Class 9 Initial at 3.

circumvent their medical devices.<sup>791</sup> Additionally, proponents contend that expanding the limitation will “allow patients to share their data in a more direct way with family members or friends.”<sup>792</sup>

Opponents argue that third-party assistance “will cause developers of connected health devices to be in violation of their legal obligations to protect consumer safety and privacy.”<sup>793</sup> ACT explains that “[t]he FDA does not have a process to review third-party modifications of devices to ensure they operate safely.”<sup>794</sup> At the hearing, ACT’s representative asserted that third parties are not regulated by the FDA or the Office of the National Coordinator within the U.S. Department of Health and Human Services.<sup>795</sup> ACT further contends that this expansion would open the door for others “to access the proprietary codes of all medical and health monitoring devices.”<sup>796</sup>

The Register recommends removing the language requiring that circumvention be “undertaken by a patient” and replacing it with a requirement that circumvention be done “by or on behalf of a patient.” Although the anti-trafficking provisions in sections 1201(a)(2) and (b) prohibit the provision of circumvention “service[s],”<sup>797</sup> the Office has previously concluded that “there is at least a plausible argument that some forms of third-party assistance involving circumvention will not rise to the level of a prohibited ‘service’ in all instances.”<sup>798</sup> The Register is not, however, expressing any view as to whether particular examples of assistance do or do not constitute unlawful

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<sup>791</sup> Coalition Class 9 Initial at 11–12; *see also id.* at 11 (noting that the current exemption’s application is “incredibly slim”).

<sup>792</sup> *Id.* at 12; *see also id.* at 12–13 (describing the Nightscout project that provides a way for parents of children with diabetes to monitor glucose readings).

<sup>793</sup> ACT Class 9 Opp’n at 4–5. *But see* Coalition Class 9 Reply at 4 (“[E]xempting patient access to data from the prohibitions on circumvention will have no effect on manufacturer compliance with any of the types of regulations identified by [ACT]. If forms of data access run afoul of FDA regulations . . . granting the exemption will not change that.”).

<sup>794</sup> ACT Class 9 Opp’n at 5.

<sup>795</sup> *See* Tr. at 571:03–23 (Apr. 8, 2021) (Reed, ACT).

<sup>796</sup> ACT Class 9 Opp’n at 6. *But see* Coalition Class 9 Reply at 2, 4 (“The language of the proposed exemption does not refer to third parties circumventing TPMs outside of the narrow purpose of assisting medical device users to access their own data. Circumvention for those other purposes would still be prohibited by [section] 1201.”).

<sup>797</sup> 17 U.S.C. § 1201(a)(2), (b)(1).

<sup>798</sup> 2018 Recommendation at 224 (noting proponents’ argument that “third-party repair services are not primarily designed or marketed for the purpose of circumvention; rather circumvention of TPMs is merely ancillary to those services”); *see also* Section 1201 Report at 59 (concluding that there is “substantial uncertainty” on this issue).

circumvention services, and she cautions that these exemptions do not affect liability under the anti-trafficking provisions.

*Compliance with Other Laws.* This limitation was imposed in 2015 to address “serious concerns” raised by opponents that an overbroad exemption could result in significant health and safety concerns such as “device malfunction, degradation, or even damage.”<sup>799</sup> The Register also gave weight to comments by the U.S. Food and Drug Administration (“FDA”) that permitting circumvention “as a general matter could interfere with its regulatory authority over medical devices.”<sup>800</sup> In this proceeding, proponents assert that the “applicable law” language reflects policy considerations “unrelated to the protection of copyright law” that should be outside the scope of this rulemaking.<sup>801</sup> They further note that, because this proceeding can only create exemptions to section 1201(a)(1) of title 17, beneficiaries who circumvent in order to violate other laws will remain liable under those laws.<sup>802</sup>

ACT, by contrast, contends that other applicable laws “are not irrelevant to the process, but are critical safety measures resulting from extensive work with stakeholders and policymakers.”<sup>803</sup> It further argues that this limitation encourages parties to consider their compliance with other applicable laws or regulations and makes violations less likely.<sup>804</sup>

In light of the FDA’s past comments, the Office issued a letter inviting it to provide its views, if any, on the current request.<sup>805</sup> The FDA provided a letter in response stating that it takes no position on the “applicable law” limitation.<sup>806</sup> It requested, however, that

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<sup>799</sup> 2015 Recommendation at 398–99, 402.

<sup>800</sup> *Id.* at 399.

<sup>801</sup> Coalition Class 9 Initial at 13.

<sup>802</sup> *Id.* (“[I]f a patient accessing their medical data violates FDA regulations, that will continue to be true even if it is no longer a violation of copyright law.”); *see also* Tr. at 544:23–545:09, 572:18–24 (Apr. 8, 2021) (Zemoudeh, Coalition) (arguing that “there are penalties under other laws and regulations that are deterrent enough” and, because they are more tailored to medical issues, “that would be able to address the violations in a better way”).

<sup>803</sup> ACT Class 9 Opp’n at 4.

<sup>804</sup> *See* Tr. at 576:16–577:07 (Apr. 8, 2021) (Reed, ACT) (testifying “it would be a mistake to take [this limitation] out” because it reminds circumventing parties that they “still need to comply with these other things, so [they] have a duty to do a better job”).

<sup>805</sup> Letter from Regan A. Smith, Gen. Counsel and Assoc. Register of Copyrights, U.S. Copyright Office, to Mark Raza, Acting Chief Counsel, FDA (May 4, 2021).

<sup>806</sup> Letter from Suzanne B. Schwartz, Dir., Office of Strategic P’ships & Tech. Innovation, FDA, to Kevin R. Amer, Acting Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 2 (Aug. 13, 2021).

if that language is removed, the Office “clarify that nothing in the rule affects the application of other federal laws and regulations” and remind parties that the existing regulation applies only for the “sole purpose of lawfully accessing” specific medical device data.<sup>807</sup>

After considering this issue, the Register concludes that it is appropriate to remove this limitation. Opponents are correct in that the “open-ended nature” of the fifth statutory factor “permits broad consideration of a wide variety of factors.”<sup>808</sup> But, as proponents note, the Office has said that it “will generally decline to consider health, safety, and environmental concerns” in this proceeding,<sup>809</sup> absent unusual circumstances. Other government agencies are tasked with “enforc[ing] or cover[ing] gaps in their own health, safety, environmental, or other regulations,” and exemptions granted in this proceeding “provide[] no defense” against other laws and regulations.<sup>810</sup> And in this class, the agency with primary regulatory authority in this area, the FDA, does not oppose the removal of this limitation so long as the continued applicability of other laws is made clear.<sup>811</sup> The Register accordingly recommends removal of this limitation, and has recommended language noting that eligibility for this exemption is not a safe harbor from, or defense to, liability under other applicable laws. This language is similar to the Register’s recommended language for Class 13.

*ii. Statutory Factors*

The Register finds that the first statutory factor under section 1201(a)(1)(C), the availability for use of copyrighted works, favors the requested modification of the implanted devices, passive monitoring, and beneficiary provisions of the current exemption. Proponents persuasively establish that the proposed expansions would not adversely affect the availability of compilations of data outputs within medical devices or personal monitoring systems. While proponents seek to access compilations of data outputs, the Office notes that acquiring data from medical devices implicates section 1201 only where devices contain compilations of data outputs that are sufficiently

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<sup>807</sup> *Id.* (emphasis and internal quotations omitted).

<sup>808</sup> Section 1201 Report at 124.

<sup>809</sup> *See id.* at 125–26.

<sup>810</sup> *Id.*

<sup>811</sup> Letter from Suzanne B. Schwartz, Dir., Office of Strategic P’ships & Tech. Innovation, FDA, to Kevin R. Amer, Acting Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 2 (Aug. 13, 2021).

creative to be protected.<sup>812</sup> And proponents are interested in the individual outputs, rather than any creative aspects of their compilation.<sup>813</sup>

Similar to the 2015 rulemaking, the Register finds that the second statutory factor, the availability for use of works for nonprofit archival, preservation, and educational purposes, does not appear especially relevant based on the current record.<sup>814</sup>

Proponents only briefly address this factor by stating that “any educational use of data from a medical device will likely require circumventing TPMs.”<sup>815</sup>

The third statutory factor, which addresses scholarship and research, weighs slightly in favor of the exemption. Proponents contend that “[a]llowing patients to circumvent TPMs to access medical data from their devices will increase the availability of reliable self-reported patient data, which will in turn encourage additional observational studies on chronic illnesses.”<sup>816</sup> Proponents offer unrebutted testimony that nonprofit organizations currently aggregate self-reported patient data collected from implanted devices, which is shared with research groups to “refine or expand upon existing treatments.”<sup>817</sup> The requested modifications will expand the types of self-reported data available for such research projects.

Regarding the fourth statutory factor, the effect of circumvention of technological measures on the market for or value of copyrighted works, the Register determines that the expanded exemption is unlikely to have an adverse effect in this area, for substantially the same reasons discussed in 2015.<sup>818</sup> Proponents note that the exemption will have “no negative effect” on either the software operating the medical devices or the compilations of data outputs, as “patients will still purchase medical devices irrespective of their access to data and may even be more likely to do so if the data is readily accessible.”<sup>819</sup> ACT argues that the proposed exemption “negatively impact[s] the ability of app developers to successfully compete in the mobile health marketplace,”<sup>820</sup> but it does not detail how patients’ access to compilations of data outputs would affect competition among app developers or device makers. Additionally, the personal,

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<sup>812</sup> 2015 Recommendation at 392–394.

<sup>813</sup> *Cf. id.* at 395 (“[A]ny copyright protection extends only to the selection and arrangement of the data and not to the data itself, which is the focus of [proponents’] use.”).

<sup>814</sup> *See id.* at 398.

<sup>815</sup> Coalition Class 9 Initial at 15.

<sup>816</sup> *Id.*

<sup>817</sup> *Id.*

<sup>818</sup> *See* 2015 Recommendation at 398.

<sup>819</sup> Coalition Class 9 Initial at 16.

<sup>820</sup> ACT Class 9 Opp’n at 5–6.



noncommercial use of facts within the compilations of data outputs makes harm to the market unlikely.<sup>821</sup>

Regarding the fifth statutory factor, which allows for consideration of such other factors as the Librarian deems appropriate, the Register again credits the FDA's view that the proposed exemption is not "likely to significantly impact the safety or effectiveness of medical devices" and is not "likely to undermine or impede efforts to ensure an appropriate degree of cybersecurity for medical devices."<sup>822</sup> The FDA also believes that the proposed exemption does not "impair the ability of medical device manufacturers to comply with applicable regulatory requirements enforced by FDA," as originally suggested by opponents.<sup>823</sup> This factor accordingly does not weigh against granting the exemption. On the whole, therefore, the statutory factors favor granting the requested modifications.

### 3. NTIA Comments

NTIA agrees with the Register that an expansion of the current exemption is warranted, but disagrees with one aspect of the proponent's proposal. NITA does not recommend that the term "wellness device" be included within the exemption, noting that proponents only mentioned that term in the initial petition and did not explain how it differs from "medical device."<sup>824</sup> NTIA believes, however, that excluding the term "should not be seen as limiting the scope" of devices or corresponding monitoring systems that are covered under the exemption.<sup>825</sup>

In support of the other proposed expansions, NTIA notes that patient access to medical device data "would provide relief from the harm patients experience due to delayed access to their health data" and that several adverse effects would continue if the exemption were not granted.<sup>826</sup> NTIA agrees with the Register that expanding the exemption to include non-implanted medical devices would not alter the fair use

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<sup>821</sup> See Tr. at 544:06–07 (Apr. 8, 2021) (Zemoudeh, Coalition) (describing proposal as "just for access to data").

<sup>822</sup> Letter from Suzanne B. Schwartz, Dir., Office of Strategic P'ships & Tech. Innovation, FDA, to Kevin R. Amer, Acting Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 2 (Aug. 13, 2021). The FDA further asserted that the proposed exemption is "unlikely to undermine the cybersecurity of affected devices, other than as intentionally undertaken by the patient and as may impact only such patient's own device." *Id.*

<sup>823</sup> *Id.*

<sup>824</sup> NTIA Letter at 66.

<sup>825</sup> *Id.*

<sup>826</sup> *Id.* at 62–63.

analysis.<sup>827</sup> It also agrees that the “other applicable laws” language should be replaced with a statement that the “exemption does not obviate the need to follow other laws and regulations.”<sup>828</sup> Regarding non-passive monitoring, NTIA agrees with proponents that it is “often non-intrusive” and “appears unlikely” to compromise the safety and efficacy of medical devices.<sup>829</sup> Finally, NTIA agrees with the removal of the phrase “undertaken by a patient” to expand the reach of the exemption to patients “who do not have the technical expertise or tools to circumvent technological protection measures to nonetheless access their own data.”<sup>830</sup> NTIA, however, suggests that the exemption expressly provide that circumvention be “undertaken by or [on] behalf of a patient.”<sup>831</sup> As noted, the Register has not recommended such language in light of potential implications regarding the anti-trafficking provisions.

#### 4. Conclusion and Recommendation

After thoroughly considering the record, the Register recommends expanding the current exemption as requested by proponents. The new recommended language permits circumvention of non-implanted devices, does not require that circumvention be done solely via passive monitoring, removes the reference to other applicable laws, and clarifies that eligibility for this exemption does not preclude liability under other applicable laws. The proposed language also adopts proponents’ language that circumvention be undertaken “by or on behalf of” a patient. As explained above, third parties seeking to use this exemption are cautioned to consider whether their activities could give rise to liability section 1201(a)(2) or 1201(b), which are outside the scope of this rulemaking.

Accordingly, the Register recommends that the Librarian designate the following class:

**Literary works consisting of compilations of data generated by medical devices or by their personal corresponding monitoring systems, where such circumvention is undertaken by or on behalf of a patient for the sole purpose of lawfully accessing data generated by a patient’s own medical device or monitoring system. Eligibility for this exemption is not a safe harbor from, or defense to, liability under other applicable laws, including without limitation the Health Insurance Portability and**

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<sup>827</sup> *Id.* at 63

<sup>828</sup> *Id.* at 65.

<sup>829</sup> *Id.* at 64.

<sup>830</sup> *Id.* at 65.

<sup>831</sup> *Id.*

**Accountability Act of 1996, the Computer Fraud and Abuse Act of 1986,  
or regulations of the Food and Drug Administration.**

## *J. Proposed Class 10: Computer Programs – Unlocking*

### **1. Background**

#### **a. Summary of Proposed Exemption**

ISRI petitions to expand the existing exemption for unlocking, *i.e.*, circumvention of access controls on computer programs for the purpose of enabling a wireless device to connect to a different mobile network provider. Specifically, ISRI seeks to modify the existing exemption to (1) add a new device category for “Laptop computers (including Chromebooks),”<sup>832</sup> or (2) in the alternative, remove the enumerated device categories from the current exemption and permit unlocking of all wireless devices. For the latter request, ISRI proposes replacing the current exemption with the following 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 to a wireless telecommunications network and such connection is authorized by the operator of such network.<sup>833</sup>

The Office received comments supporting the proposed modifications from Consumer Reports, FSF, and several individuals.<sup>834</sup> The only opposition comment was filed by MEMA, which opposed expanding the exemption to permit unlocking cellular-enabled vehicles.<sup>835</sup>

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<sup>832</sup> ISRI Class 10 Initial at 5.

<sup>833</sup> ISRI Class 10 Initial at 9.

<sup>834</sup> Consumer Reports argued that the current exemption provides significant benefits for consumers and that “[t]he same considerations apply to other devices and appliances that depend for their functioning on a connection to a wireless network.” Consumer Reports Class 10 Reply at 2. FSF opined that requiring new exemption requests to permit unlocking of new device categories is “an unnecessary burden” that should be eased by permitting unlocking for “all works and all users.” FSF Class 10 Initial at 2. Most individual commenters expressed concerns about unlocking phones, which are already covered by the current exemption, but some also expressed the desire to unlock all wireless devices. *See, e.g.*, Frank Ward Class 10 Initial (asking the Office to “rule in favor of consumers’ rights over devices they have purchased”); Justin Morrow Class 10 Initial (“Can we please stop this practice of having locked down phones or any consumer electronics.”); Luis Sepulveda Class 10 Reply (asking “[i]f we don’t let traditional internet companies lock our computers to their service, why are we doing it for the wireless companies?”).

<sup>835</sup> MEMA Class 10 Opp’n (arguing that the record did not support an exemption covering motor vehicles and that the Office should ensure the final exemption “is limited and expressly excludes motor vehicles and motor vehicle equipment”).

For the reasons discussed below, the Register recommends granting proponents' request to expand the exemption to all wireless devices.

### b. Overview of Issues

As explained in prior rulemakings, devices that connect to a wireless telecommunication network may contain TPMs to prevent use on a different network, even if the telecommunications radios and other hardware in the device have the technical capability to operate on another network.<sup>836</sup> Wireless carriers may prevent devices from accepting a subscriber identity module ("SIM") card from a competing carrier, by requiring input of a special code from the original carrier to enable use of competing networks, or by locking a device to operate on a subset of the wireless frequencies over which it has the hardware to communicate.<sup>837</sup> Circumvention to "unlock" a wireless device for use on other networks can occur by inputting special codes or running software to exploit security vulnerabilities and remove the software lock.<sup>838</sup>

The Office has received petitions to permit cell phone unlocking since 2005. The Register recommended such exemptions in 2006, 2010, and 2012.<sup>839</sup> In 2015, the

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<sup>836</sup> 2018 Recommendation at 146; *see also* 2015 Recommendation at 138.

<sup>837</sup> 2015 Recommendation at 144–45. In the 2018 rulemaking, one proponent described the relevant TPM as a lock in the software on a device's baseband chip, which allows the device to communicate with a cellular network. 2018 Hearing Tr. at 139:1–11 (Apr. 23, 2018) (Wiens, iFixit). In this proceeding, proponents have referred to the baseband processor as the "modem," but the Office will use "modem" to refer to discrete modules containing a baseband processor that device manufacturers can incorporate to add cellular connectivity to their products. *See* Tr. at 918:17–21 (Apr. 21, 2021) (Kaufman, ISRI) ("Last cycle, it was referred to as the baseband processor. That is synonymous with the modem"); *but see also* ISRI Class 10 Post-Hearing Resp. at 1 n.4 (May 7, 2021) (citing *The Difference Between Chipsets, Modules, and Modems (End-Devices)*, NimbeLink (Aug. 16, 2019), <https://nimbelink.com/blog/difference-between-chipsets-modules-and-modems/> (drawing distinction between baseband processors/chips as smallest unit and "modems" as larger unit containing a module that in turn contains a chip)).

<sup>838</sup> 2015 Recommendation at 144–45; *see also* 2018 Hearing Tr. at 140:11–17 (Apr. 23, 2018) (Wiens, iFixit) (stating that circumvention involves "modifying a bit on [the] baseband"); Tr. at 918:17–24 (Apr. 21, 2021) (Kaufman, ISRI) (testifying that "the thing that prevents any device from being used on a carrier is a setting in the cellular modem itself," and users are "able to modify that setting by circumventing a TPM that basically modifies whatever bits of code to allow [the modem] to communicate with other carriers").

<sup>839</sup> 2006 Recommendation at 53; 2010 Recommendation at 163–64; 2012 Recommendation at 99–100. The class recommended in 2012 applied to only phones acquired by consumers within 90 days of the regulatory language going into effect, but Congress replaced the 2012 regulatory language with the 2010 language when it passed the Unlocking Consumer Choice and Wireless Competition Act. *See* Pub. L. No. 113-144, § 2(c), 128 Stat. 1751, 1751–52 (2014).

exemption was expanded to include tablets, mobile hotspots, and wearable devices.<sup>840</sup> In 2018, the exemption was further modified to remove the requirement that devices be “used,” *i.e.*, previously lawfully acquired and activated on a cellular carrier’s network.<sup>841</sup>

In the last two rulemakings, proponents have requested that the Librarian expand the current exemption to all wireless devices. In 2015, the Register determined that for some subset of wireless customers, unlocking such devices is likely noninfringing under section 117, and that “unlocking as a general matter is also likely to be a fair use.”<sup>842</sup> The Register declined, however, to recommend a proposal to include all “consumer machines” or “smart devices” in the class because she found that proponents had failed to provide sufficient information about the kinds of devices that would be included to permit consideration of any adverse effects on noninfringing use.<sup>843</sup> In 2018, the Acting Register again declined to expand the unlocking class to “all wireless devices” because proponents had “fail[ed] to make even a minimal showing that users of many types of wireless devices are similarly harmed by the inability to unlock them.”<sup>844</sup>

Proponents in this proceeding seek to add a new device category for laptop computers, or, in the alternative, to expand the exemption to cover all wireless devices. With respect to the former, proponents argue that laptops are increasingly being sold with cellular connectivity, such as 4G LTE and 5G, and that recyclers are beginning to obtain laptops that “are locked to a particular wireless carrier in the same manner as are wireless handsets, tablets, and other devices covered by the current exemption.”<sup>845</sup> Proponents suggest that while it is “not completely clear” how frequently laptops will be locked to particular carriers in the future, “it is likely that many of the same business and economic considerations that led cell phones and tablets to be locked to one carrier will impact cellular-connected laptops as well.”<sup>846</sup> To support the inference that locking is likely to be an issue for some cellular enabled laptops, ISRI points to the Department of Justice’s recent findings that the GSM Association, an association representing major cell carriers, took steps to “entrench[] network locking practices” when designing the standards for embedded SIMs in mobile-capable devices.<sup>847</sup>

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<sup>840</sup> 2015 Recommendation at 170–71.

<sup>841</sup> 2018 Recommendation at 162–63.

<sup>842</sup> 2015 Recommendation at 162.

<sup>843</sup> *Id.* at 167, 170.

<sup>844</sup> 2018 Recommendation at 156.

<sup>845</sup> ISRI Class 10 Initial at 6.

<sup>846</sup> *Id.* at 9.

<sup>847</sup> *Id.* (citing Ltr. from Makan Delrahim, Assistant Attorney General, U.S. Department of Justice Antitrust Division, to Timothy Cornell, Clifford Chance, GSM Association, *re: GSMA Business*

With respect to unlocking all wireless devices, proponents similarly argue that the range of wireless devices “continues to grow beyond laptops and the categories of devices covered by the current exemption,” and thus adverse effects are likely to occur if consumers are unable to unlock those devices.<sup>848</sup> ISRI’s written comments list drones, televisions, and Internet of Things (IoT) devices as potentially facing adverse effects;<sup>849</sup> ISRI describes these as “illustrative” examples.<sup>850</sup> ISRI also makes the broader argument that these and other wireless devices share the same cellular modem hardware and firmware, so the legal analysis (as well as need for an exemption) with respect to these devices is the same.<sup>851</sup>

## 2. Discussion

### a. Works Protected by Copyright

This class involves computer software running on wireless devices, which can include TPMs as part of the code itself. Proponents label the relevant copyrighted works for the entire class as “computer programs, in the form of firmware or software, that enable wireless mobile devices to connect to a wireless telecommunications network.”<sup>852</sup> The Register agrees that the relevant software constitutes a computer program as defined in section 101 and therefore finds that at least some works included in the proposed expanded class are protected by copyright.

### b. Asserted Noninfringing Uses

The 2015 and 2018 rulemakings considered three main arguments that unlocking wireless devices is a noninfringing use: (1) some methods of unlocking, such as inputting unlock codes, do not implicate a section 106 exclusive right; (2) section 117 privileges some forms of unlocking; and (3) “unlocking as a general matter” is likely to

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*Review Letter Request* at 11–12 (Nov. 27, 2019), available at <https://www.justice.gov/atr/page/file/1221321/download> (“DOJ GSMA Letter”).

<sup>848</sup> ISRI Class 10 Initial at 10. While ISRI concedes that it “does not yet have additional examples of carrier locking,” it argues that requiring analysis of individual device categories is “unrealistic and unworkable” given the rapid increase in wireless devices in the consumer marketplace. ISRI Class 10 Reply at 6.

<sup>849</sup> ISRI Class 10 Initial at 10–11.

<sup>850</sup> Tr. at 925:12–18 (Apr. 21, 2021) (Kaufman, ISRI).

<sup>851</sup> Tr. at 925:12–27:14 (Apr. 21, 2021) (Kaufman, ISRI) (describing the relatively small number of 5G cellular modems and arguing that “just like for phones and tablets, when you reuse the [5G] chip, the analysis for the TPM [i]s pretty likely going to be the same because there’s really no reason that the firmware associated with a given piece of hardware is going to be different”).

<sup>852</sup> ISRI Class 10 Initial at 5.

be a fair use.<sup>853</sup> Proponents argue that the legal basis for their unlocking requests is “identical or virtually identical” to their past arguments, and proponents incorporate by reference their previous contentions and the Office’s legal conclusions from the 2015 rulemaking.<sup>854</sup> Because the Register must ensure that the new proposed uses in connection with the proposed expanded exemption are likely to be noninfringing,<sup>855</sup> she considers anew whether these three grounds support the requested unlocking activity.

*i. No Prima Facie Infringement*

In the past four rulemakings, the Register has concluded that when unlocking requires “changing variables in the cellphone’s software in a manner that is intended by the software’s creator,” such activity is noninfringing.<sup>856</sup> Proponents have incorporated by reference their prior arguments discussing unlock codes,<sup>857</sup> but that evidence did not address the use of unlock codes in laptops or other wireless devices. Because the record does not make clear whether unlocking these additional devices would involve similar uses of unlock codes, the Register focuses her attention on whether other legal bases support finding the proposed activities likely noninfringing.

*ii. Section 117*

The Office has previously concluded that in some cases, unlocking may be noninfringing under section 117(a), which authorizes the owner of a copy of a computer program to make or authorize the making of another copy where doing so is “an essential step in the utilization of the computer program in conjunction with a machine.”<sup>858</sup> In 2015, the Register found “some evidence” that the owner of a wireless device qualifies as the owner of the copy of the device software for purposes of section 117(a), citing the Ninth Circuit’s decision in *Vernor v. Autodesk, Inc.*<sup>859</sup> and the Second Circuit’s decision in *Krause*

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<sup>853</sup> 2015 Recommendation at 159–64; 2018 Recommendation at 148–53.

<sup>854</sup> ISRI Class 10 Initial at 5.

<sup>855</sup> 2018 Recommendation at 148.

<sup>856</sup> *Id.* at 149 (concluding that use of unlock codes “does not involve reproducing the device software or creating a derivative work” and thus does not violate any section 106 rights); *see also* 2015 Recommendation at 160 (citing 2012 Recommendation at 90; 2010 Recommendation at 134).

<sup>857</sup> ISRI Class 10 Initial at 5 (ISRI “incorporates by reference the detailed arguments in its 2015 comments regarding tablet computers”); 2015 ISRI Class 12 Initial at 4–5 (discussing “commonly used devices locks,” including “model-specific code[s]” and “device-specific code[s]” that permit the devices to be used on other networks once inputted) (emphasis removed).

<sup>858</sup> 17 U.S.C. § 117(a); *see* 2012 Recommendation at 93, 2015 Recommendation at 160–62; 2018 Recommendation at 149–50.

<sup>859</sup> 621 F.3d 1102 (9th Cir. 2010).



*v. Titleserv, Inc.*<sup>860</sup> These cases provide different tests for determining when a software user is the owner, rather than the licensee of a copy of the software under section 117; collectively they “remain the two dominant approaches to the question of whether software is owned or licensed.”<sup>861</sup> The Register concluded in 2015 that users of the wireless devices in the class qualified as owners of software copies under either test, noting that the software is stored on the device itself, device owners have the right to use the device software indefinitely, and they have the right to discard or destroy the device (including its software).<sup>862</sup> She further found that reproduction or adaptation of device software to allow it to operate with a carrier of the user’s choice likely constitutes an “essential step” in the utilization of the program within the meaning of section 117(a).<sup>863</sup> The Acting Register reached the same conclusion again in 2018, observing that the relevant legal tests remained unchanged and that the section 117(a) analysis “did not depend on the relevant devices being used.”<sup>864</sup>

After review of the current record, the Register finds that owners of laptop computers are likely to be considered owners of the copies of the software running on those computers, including the software governing communication over cellular networks. As in 2018, there have been no significant changes in the case law altering or supplanting the tests from *Vernor* and *Krause*.<sup>865</sup> And the operative facts—that the software be stored on property owned by the user, that users have the right to use the software indefinitely, and that the owner has the legal right to destroy the device (and accompanying software)—are the same for lawfully owned laptops as they were for wireless devices previously considered under this test. Thus, the Register finds that owners of laptop computers are likely covered by section 117, which the Register has determined permits unlocking as a noninfringing act.<sup>866</sup>

The Register cannot, however, make the same finding with respect to all wireless devices on this record. While the Office’s prior section 117 analysis did not depend on the

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<sup>860</sup> 402 F.3d 119 (2d Cir. 2005).

<sup>861</sup> See 2015 Recommendation at 160–62.

<sup>862</sup> *Id.* at 161 (citing *Krause v. Titleserv, Inc.*, 402 F.3d 119 (2d Cir. 2005), and *Vernor v. Autodesk, Inc.*, 621 F.3d 1102 (9th Cir. 2010)).

<sup>863</sup> 2015 Recommendation at 162.

<sup>864</sup> 2018 Recommendation at 150.

<sup>865</sup> The only appellate case since 2018 to substantively address either test appears to be the Second Circuit’s decision in *Universal Instruments Corp. v. Micro Sys. Eng’g, Inc.*, where the court applied the test from *Titleserv* and concluded as a matter of law that the defendant owned the software copies at issue for purposes of section 117(a). 924 F.3d 32, 44 (2d Cir. 2019).

<sup>866</sup> 2015 Recommendation at 162 (“[I]f modifications to device software are necessary to make that device operate with a wireless carrier of the user’s choice, those modifications can be considered an essential step in the use of the device.”).

relevant devices, it did assume facts about what legal rights owners of the device had to use the devices and software.<sup>867</sup> Proponents have not provided sufficient evidence about ownership with respect to all wireless devices for the Register to determine whether the same facts, and thus the same conclusion, apply here. Proponents suggest that the shared quality of “inability to choose the mobile wireless communications provider for the device that they own and use or seek to recycle/resell” is sufficient to allow for a combined legal analysis,<sup>868</sup> but that ignores possible factual distinctions among devices. Some devices may employ software licensed for only a limited time, and some devices may come with additional restrictions on use from the software developer or device manufacturer. These distinctions affect the section 117 analysis, but proponents have not provided evidence allowing the Office to find that owners of all wireless devices are similarly situated for purposes of section 117. In the absence of such a showing, the Register cannot find that unlocking all additional wireless devices is likely noninfringing under section 117(a).

*iii. Fair Use*

*1) Laptops*

In prior rulemakings, the Register concluded that unlocking wireless devices such as phones, tablets, and mobile hotspots is likely to be a fair use.<sup>869</sup> After considering proponents’ request to expand the exemption to laptops, the Register concludes that the fair use analysis from the 2015 and 2018 rulemakings applies equally to laptops. As is true for unlocking cell phones and other devices covered by the existing exemption, unlocking laptops enables interoperability, involves circumvention of “highly functional” software code, only copies or alters as much of the copyrighted software work as necessary, and is unlikely to harm the market for the laptop’s software.<sup>870</sup> For substantially the same reasons as explained in the past two rulemakings, the Register thus concludes that unlocking laptops is likely a fair use.

*2) All Wireless Devices*

In the last two rulemakings, supporters of an exemption for unlocking all wireless devices provided insufficient supporting evidence to permit a fair use analysis. In 2015, the Office concluded that “unlocking as a general matter is also likely to be a fair use,”

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<sup>867</sup> See *id.* at 161 (giving weight to factors such as lack of time limits on use of installed software); 2010 Recommendation at 132–33 (finding that owners of phones whose carrier contracts limited certain uses or modifications of phone software may have different section 117 privileges).

<sup>868</sup> ISRI Class 10 Initial at 10.

<sup>869</sup> 2015 Recommendation at 162; 2018 Recommendation at 150–52.

<sup>870</sup> See 2015 Recommendation at 162–64.

but found it “impossible to evaluate” whether unlocking all “consumer machines” would facilitate noninfringing uses because of a threadbare record.<sup>871</sup> In 2018, the Office again was unable to conduct a fair use analysis because proponents provided “similarly scant” factual evidence and did “not discuss the application of the fair use factors in this context.”<sup>872</sup> In this proceeding, however, proponents have provided sufficient evidence to facilitate a fair use analysis. After considering proponents’ arguments and evidence, the Register concludes that proponents have met their burden to show that unlocking all wireless devices is likely a fair use.

At the outset, the Office determined in 2015 that “unlocking as a general matter is also likely to be a fair use,” and the 2015 analysis was not dependent on the specific devices being unlocked.<sup>873</sup> The purpose of unlocking, regardless of the specific device, is “to make functional adjustments to the device software to enable the operation of a device on the wireless network of the user’s choice.”<sup>874</sup> The nature of the copyrighted work being modified—firmware on cellular modems<sup>875</sup>—is “highly functional” and thus weighs strongly in favor of fair use.<sup>876</sup> The amount of the software used, whether viewed as “limited parts of the device’s operating system” or significant copying and modification of the firmware, “is necessary to engage an otherwise benign activity”—*i.e.*, allowing devices capable of operating on different cellular networks to do so.<sup>877</sup> And other than the unique instance of prepaid cell phones in 2015, the Register has never

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<sup>871</sup> 2015 Recommendation at 162, 164 (noting proponents had failed to show “whether unlocking would require creation of copies or derivative works . . . [or] whether permitting unlocking is likely to adversely impact the market for copyrighted works”).

<sup>872</sup> 2018 Recommendation at 152.

<sup>873</sup> 2015 Recommendation at 162.

<sup>874</sup> *Id.*

<sup>875</sup> Proponents argue, and the Register agrees, that the relevant copyrighted work to consider in the fair use analysis is the firmware running on a cellular modem. See ISRI Class 10 Initial at 5 (describing relevant copyrighted work as “computer programs, in the form of firmware or software, that enable wireless mobile devices to connect to a wireless telecommunications network”); 2018 Recommendation at 148 (Acting Register agreeing with proponents that “the relevant copyrighted works for the entire class are the computer programs running on the baseband processors in these devices”); see also 2018 Recommendation at 146 (crediting proponent testimony that “the relevant TPM as a lock in the software on a device’s baseband chip, which allows the device to communicate with a cellular network”).

<sup>876</sup> 2015 Recommendation at 163.

<sup>877</sup> *Id.*

been presented with evidence that unlocking results in harm to the market for a category of wireless device or its firmware.<sup>878</sup>

In this proceeding, proponents have provided sufficient evidence for the Register to conclude that the 2015 fair use analysis applies with equal force to unlocking all types of wireless devices. Proponents offer un rebutted evidence that 5G-enabled devices generally use one of a small number of modems, meaning that the firmware subject to the fair use analysis and the TPM being circumvented are identical across device categories that share a particular modem.<sup>879</sup> For example, proponents show that worldwide, there are 11 discrete 5G modems that device manufacturers can buy to integrate into their devices.<sup>880</sup> Most 4G and 5G chipsets in the United States are developed by Qualcomm, so unlocking all wireless devices implicates a limited number of modems from a single chipset vendor.<sup>881</sup> Proponents argue that manufacturers of

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<sup>878</sup> See 2015 Recommendation at 163–64 (raising concerns about prepaid cell phones and noting that otherwise “no opponent has suggested that the market for software used to operate cellphones or other wireless devices would be harmed by allowing those devices to be unlocked”) (emphasis added); 2018 Recommendation at 151–52 (considering fourth factor and finding no market harm from unlocking because concerns of subsidy theft are “not the result of an infringing product substituting for the manufacturer’s software in the marketplace” which is “the type of harm with which the fourth fair use factor ordinarily is concerned”).

<sup>879</sup> See ISRI Class 10 Post-Hearing Resp. at 1–2, Ex. A (May 7, 2021); Tr. at 925:12–27:14 (Apr. 21, 2021) (Kaufman, ISRI) (X55 modem “is being deployed in a wide range of use cases, including IoT, including drones, including virtual reality headsets” because modem is “packaged into some module that is sold by various IoT providers, and that module that has that modem then can be deployed for all of the different use cases that we mentioned”).

<sup>880</sup> See ISRI Post-Hearing Resp. Ex. H, *LTE, 5G & 3GPP IoT Chipset Report: Status Update January 2021* at 2, Global mobile Suppliers Association (Jan. 25, 2021), available at <https://gsacom.com/paper/chipset-report-january-2021-status-update/> (showing “29 commercially available 5G mobile processors/platforms and 11 commercially available discrete 5G modems from [] five semi-conductor companies”). In short, and as supported by proponent’s submissions, a chip is a processor capable of wireless communication, and a module is a slightly larger unit containing a chip and adding a few additional features such as memory and voltage regulation. See ISRI Class 10 Post-Hearing Resp. at 1 n.4 (May 7, 2021) (citing *The Difference Between Chipsets, Modules, and Modems (End-Devices)*, NimbeLink (Aug. 16, 2019), <https://nimbelink.com/blog/difference-between-chipsets-modules-and-modems/>).

<sup>881</sup> See ISRI Post-Hearing Resp. Ex. C, *5G Device Ecosystem Report March 2019*, Global mobile Suppliers Association (Mar. 2019), available at <https://gsacom.com/paper/5g-device-ecosystem-report-march-2019/> (showing most devices using Qualcomm’s Snapdragon chipset, with Balong supplying only chipsets for Huawei devices, and the Samsung Exynos chipset only used in Samsung’s devices sold in Europe and Asia). Huawei’s handsets are generally unavailable in the United States. See Addition of Entities to the Entity List, 84 Fed. Reg. 22,961 (May 21, 2019) (Department of Commerce final rule adding Huawei entities to Export Administration

cellular chipsets generally design a single modem to work with all cellular networks, allowing the chipsets to “be used in the greatest number of devices and on as many carriers across the globe as possible.”<sup>882</sup> And proponents argue it is unlikely that the market for the relevant copyrighted works—baseband firmware—will be harmed because “a unique feature of firmware is that there is not a separate market for firmware outside of the device that it is attached to, so there is no market substitute.”<sup>883</sup>

In light of unrebutted evidence that the same set of cellular modems, and thus the same firmware, are employed in a variety of wireless devices without distinction based on the type of device, the Register concludes that the 2015 fair use analysis applies to unlocking activities with respect to wireless devices generally. Regarding the first factor, making a locked cellular modem interoperate with other cellular networks, regardless of the specific device into which the modem is incorporated, amounts to “enabling interoperability with other software,” an activity that courts have found “is favored under the first factor.”<sup>884</sup> For the second factor, the “highly functional” nature of modem firmware does not differ based on whether the firmware is installed on a modem embedded in a phone or in a laptop.<sup>885</sup> For the third factor, unlocking would not use a

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Regulations’ Entity List). *See also* ISRI Class 10 Post-Hearing Resp. Ex. B (chart showing 4G and 5G laptops sourcing modems from Qualcomm and Intel); ISRI Post-Hearing Resp. Ex. F, *LTE, 5G and 3GPP IoT Chipsets: Status Update* at 5, Global mobile Suppliers Association (Nov. 2019), available at <https://gsacom.com/paper/5g-modems-chipsets-status-update-2/> (excluding 5G modems, globally in 2019 there were 24 commercial 4G LTE modems available from 6 vendors). Intel has announced it will not compete in the 5G modem business, making it likely that in the next three years most 5G cellular chipsets will be those from Qualcomm. *See Intel to Exit 5G Smartphone Modem Business, Focus 5G Efforts on Network Infrastructure and Other Data-Centric Opportunities*, Intel Newsroom (Apr. 16, 2019), <https://newsroom.intel.com/news-releases/intel-modem-statement/>.

<sup>882</sup> ISRI Class 10 Post-Hearing Resp. at 3–4 (May 7, 2021) (citing Tom Brant, *Lenovo Flex 5G Review*, PC Mag (Aug. 4, 2020), <https://www.pcmag.com/reviews/lenovo-flex-5g> (“the Flex 5G has a Qualcomm X55 modem, which can access nearly every cellular network available in the U.S. and many other countries, from 2G to 5G”).

<sup>883</sup> ISRI Class 10 Post-Hearing Resp. at 4 (May 7, 2021).

<sup>884</sup> 2015 Recommendation at 162. *See also* *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1203 (2021) (first factor favored fair use where defendant’s use of copyrighted software was “necessary for different programs to speak to each other” and “expand[ed] the use and usefulness” of smartphones).

<sup>885</sup> *See* 2015 Recommendation at 163. As proponents have shown, a particular cellular chipset, such as Qualcomm’s X55, can be incorporated into a wide array of disparate devices. *See* ISRI Class 10 Post-Hearing Resp. Ex. A (May 7, 2021) (showing X55 integration into modules, including Quectel RG500Q, marketed for uses in laptops, video surveillance, digital signage, routers, medical equipment, and augmented reality) (citing *New Products: RG500Q/RM500Q*,

different amount of the copyrighted firmware depending on the type of device; in all cases the amount of copyrighted firmware used is no more than “necessary to engage an otherwise benign activity” — allowing devices to interoperate with different cellular networks.<sup>886</sup> Regarding the fourth factor, while there is no evidence in the record that unlocking wireless devices is likely to decrease the value of copyrighted software within them, there is evidence that “unlocked [devices] (and the software they contain) are more valuable in the market than those that are locked — at least to the device owners.”<sup>887</sup>

The Register therefore finds that proponents have met their burden to demonstrate that unlocking wireless devices is likely to be a fair use.

### c. Causation

The Register finds that proponents have met their burden of showing that the current qualifying language limits their ability to make some noninfringing uses of wireless devices beyond the enumerated categories in the current exemption. Because the specifics of causation are intertwined with the adverse effects on proposed uses, in the next section the Register will address whether proponents have successfully established that the prohibition on circumvention is the cause of their asserted adverse effects.

### d. Asserted Adverse Effects

#### *i. Laptops*

ISRI argues that the current exemption has an adverse effect on users’ legitimate interest in unlocking laptops. ISRI acknowledges that it did not request to include laptops in the scope of the previous rulemaking but says that in the intervening three years recyclers “have now begun to obtain and need to recycle and/or resell laptops with such wireless connectivity, but have found that some of those devices are locked to a particular wireless carrier in the same manner as are wireless handsets, tablets, and other devices covered by the current exemption.”<sup>888</sup> At the hearing, ISRI testified that laptop consumers tend to recycle old models when they trade for a new version, and the recent

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RG510Q/RM510Q, Avnet, <https://www.avnet.com/wps/portal/apac/products/new-products/npi/aac-202002-quetel/> (product page for Quectel 5G module marketed as fit for uses such as “vehicle tracking,” “electricity meters,” “cash register[s],” “street lighting,” and “personal/pet tracker[s]”).

<sup>886</sup> See 2015 Recommendation at 163.

<sup>887</sup> *Id.* at 163–64; see also ISRI Class 10 Initial at 6 (“ISRI members report that an unlocked Chromebook device is often worth at least 6% to 8% more than a locked Chromebook”); ISRI Class 10 Reply at 5 (some donated laptops to schools that were carrier-locked could not be used and “as result, either went unused or were recycled”).

<sup>888</sup> ISRI Class 10 Initial at 6.

entry of 5G laptops in the market are the impetus for what ISRI expects will be a growing number of locked 4G-enabled laptops making their way into the hands of recyclers (who in turn seek to unlock them).<sup>889</sup>

Looking to the section 1201 statutory factors, the first factor—the availability for use of copyrighted works—favors extending the exemption to laptops. Because unlocked laptops are more valuable for resale,<sup>890</sup> an exemption for unlocking laptops will expand the availability of the copyrighted software within them by enabling them to continue their intended, functional use. There is no evidence in the record suggesting that unlocking laptops will decrease the availability of copyrighted works.

The second statutory factor, the availability for use of works for nonprofit archival, preservation, and educational purposes, and the third factor, the effect on criticism, comment, news reporting, teaching, scholarship and research, are neutral. Though unlocked laptops could serve as tools for these uses, that possibility does not materially affect this factor.<sup>891</sup>

For the fourth statutory factor, the effect of circumvention on the market for copyrighted works, there is no evidence in the record that permitting laptop unlocking will harm the market for copyrighted works.

Accordingly, the Register finds that proponents have demonstrated that absent an exemption, they are likely to be adversely affected in their ability to unlock laptop computers.

*ii. All Wireless Devices*

ISRI argues that the current prohibition harms owners of non-exempted wireless devices because of their “inability to choose the mobile wireless communications provider for the device that they own and use or seek to recycle/resell.”<sup>892</sup> It contends that, regardless of what particular wireless device a consumer owns, consumers and recyclers are adversely affected when they are not allowed to unlock their devices to “switch to a better or cheaper wireless carrier.”<sup>893</sup> ISRI further argues that owners of wireless devices

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<sup>889</sup> Tr. at 911:14–12:12 (Apr. 21, 2021) (Kaufman, ISRI); *see also* Tr. at 9:12:23–13:22 (Apr. 21, 2021) (Kaufman, ISRI) (testifying that laptops have not been the subject of this rulemaking because cellular-enabled laptops have surged in the market during the last three years).

<sup>890</sup> ISRI Class 10 Initial at 6.

<sup>891</sup> *See* 2015 Recommendation at 167–68; 2018 Recommendation at 154.

<sup>892</sup> ISRI Class 10 Initial at 10.

<sup>893</sup> ISRI Class 10 Post-Hearing Resp. at 5 (May 7, 2021).

of any kind “stand[] in the same position from a copyright law standpoint” as owners of devices covered by the current exemption.<sup>894</sup>

ISRI suggests that, over the next three years, the adverse effects caused by the inability to unlock all wireless devices will increase. ISRI has provided evidence that 5G cellular modules are now being marketed and sold for incorporation into a wide array of devices, ranging from pet trackers to point-of-sale machines in retail stores.<sup>895</sup> ISRI has also shown that 5G-capable devices are rapidly entering the market, with 33 devices announced in 2019 and 703 devices announced by 2021.<sup>896</sup> Because “the same modem is used across device categories,” ISRI argues that the same firmware and TPMs are implicated in devices sharing the modem, and that consumers suffer the same adverse effects if they cannot unlock devices sharing the modem.<sup>897</sup>

The Register concludes that proponents have provided sufficient evidence that, absent an exemption, owners of wireless devices of all types will face adverse effects on noninfringing use if they cannot unlock them. Device manufacturers are rapidly incorporating 5G modems into devices that have not previously been capable of using wireless networks.<sup>898</sup> And proponents have shown that the main 5G modem currently incorporated into 5G devices, Qualcomm’s X55 modem, is in some instances sold in a device locked to a particular wireless provider.<sup>899</sup> The Register finds this evidence

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<sup>894</sup> *Id.*

<sup>895</sup> *Id.* at 1–2 (providing evidence of 5G module developed for incorporation into “vehicle tracking,” “electricity meters,” “cash register[s],” “street lighting,” and “personal/pet tracker[s]”); ISRI Class 10 Post-Hearing Resp. Ex. A (May 7, 2021) (showing range of use cases discussing in marketing for modules incorporating Qualcomm’s 5G modem, including “business routers,” “4K/8K live streaming,” “consumer laptops,” and “smart factories”).

<sup>896</sup> ISRI Class 10 Post-Hearing Resp. at 1 (May 7, 2021) (citing *5G Device Ecosystem Report March 2019* at 1, Global mobile Suppliers Association (Mar. 2019), *available at* <https://gsacom.com/paper/5g-device-ecosystem-report-march-2019/> (identifying “seven announced form factors” including 5G phones, hotspots, and modules), *5G Ecosystem Report Executive Summary* at 2, Global mobile Suppliers Association (Apr. 2021), *available at* <https://gsacom.com/paper/5g-devices-april-2021-executive-summary/> (graph showing steady increase of announced and commercially available 5G products, with 703 5G devices announced by the end of March 2021, including phones, laptops, tablets, drones, head-mounted displays, and TVs)).

<sup>897</sup> ISRI Class 10 Post-Hearing Resp. at 2–3 (May 7, 2021).

<sup>898</sup> *See id.* at 1–2 (providing evidence of 5G module developed for incorporation into “vehicle tracking,” “electricity meters,” “cash register[s],” “street lighting,” and “personal/pet tracker[s]”).

<sup>899</sup> *See* ISRI Class 10 Initial at 8 (citing Andrew E. Freedman, *Lenovo Flex 5G Review: Solid Arm Laptop, but 5G Isn’t Ready*, TOM’S HARDWARE (July 28, 2020), <https://www.tomshardware.com/reviews/lenovo-flex-5g> (describing laptop using Qualcomm X55



sufficient to show that some wireless devices across a variety of categories are likely to be locked to a particular carrier over the next three years, and that owners of those devices will be adversely affected absent an unlocking exemption.

The analysis of the section 1201 statutory factors is similar to the analysis for laptops. If consumers can unlock any locked wireless device, unlocking “will expand the availability of the copyrighted software within them by enabling them to continue their functional use” instead of being discarded or sold for scrap.<sup>900</sup> The second and third factors—the availability for use on nonprofit purposes and impact on activities such as criticism and comment—are neutral for the reasons noted above. For the fourth factor, the Register determines that unlocking will not harm and may increase the value of the copyrighted works—firmware on wireless modules—because devices were initially sold locked will be more appealing to consumers as a result of their ability to interoperate with a consumer’s wireless network of choice.<sup>901</sup>

The fifth statutory factor allows the Register to consider other factors that may be appropriate, which may include issues such as “consumer choice and competition.”<sup>902</sup> Carrier locks have been debated in this rulemaking since 2006.<sup>903</sup> Though carriers have relaxed their policies in the last 15 years, proponents note that the Department of Justice has recently investigated potential anti-competitive behavior by the GSM Association (GSMA), which sets standards for cellular operations.<sup>904</sup> For example, the Department of

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modem, and how “[i]n the United States, Verizon’s 5G network is used exclusively for the laptop”); ISRI Class 10 Post-Hearing Resp. Ex. A (May 7, 2021) (showing numerous device categories that incorporate X55 modem)).

<sup>900</sup> 2018 Recommendation at 154 (analysis for 17 U.S.C. § 1201(a)(1)(C)(i)).

<sup>901</sup> See 2015 Recommendation at 168 (unlocking appears to have not harmed market for wireless devices, and “during the time that the exemption for cellphone unlocking has been in place, the market for cellphones (including their embedded software) has continued to expand rapidly”); 2018 Recommendation at 155 (no evidence of market harm from expanding unlocking to used devices); cf. ISRI Class 10 Initial at 6 (ISRI testimony that “an unlocked Chromebook device is often worth at least 6% to 8% more than a locked Chromebook”).

<sup>902</sup> See 2015 Recommendation at 168; 2012 Recommendation at 96 (giving weight to the “significant consumer interest and demand in using legacy phones on carriers other than the one that originally sold the phone to the consumer”); see also Section 1201 Report at 92 (noting “section 1201 was not intended to facilitate manufacturers’ use of TPMs to facilitate product tying or to achieve a lock-in effect”).

<sup>903</sup> See generally 2006 Recommendation at 48–53 (noting “undisputed” evidence “that mobile handset consumers who desire to use their handsets on a different telecommunications network . . . are often precluded from doing so” by carrier locks).

<sup>904</sup> ISRI Class 10 Initial at 9 (citing DOJ GSMA Letter); DOJ GSMA Letter at 1, 4 (citing receipt of business review request letter in July 2019 and noting that the Antitrust Division “had [already]

Justice found that in 2017, North American cellular carriers sought to require “more durable network lock[s]” in standards under development and used the GSMA group to create “a separate process, which was completely devoid of non-operator participation, to make the rule mandatory in North America.”<sup>905</sup> The Register finds that these concerns provide further support for the requested expansion.

The Register has considered the arguments raised by MEMA in opposition to this request, and concludes that they do not affect the statutory analysis. MEMA argues, essentially, that unlocking the cellular modem on cars could negatively affect other vehicle systems governing safety and emissions.<sup>906</sup> In doing so, MEMA echoes arguments from prior rulemakings opposing exemptions for the repair and modification of vehicles.<sup>907</sup> The Register has previously addressed these concerns by limiting the scope of the repair class to permit only “lawful” modification, which excludes situations where someone attempts to engage in “circumvention to achieve an illicit purpose.”<sup>908</sup>

The Register finds that the existing limitations in the unlocking exemption sufficiently address these concerns. The exemption is narrow, permitting circumvention “solely” to connect to a wireless network and requiring that connection to be authorized by the network operator.<sup>909</sup> Circumvention of cellular modem software in vehicles must be done “solely” for the purpose of network interoperability, and thus someone who intends to violate vehicle emissions or safety laws would not be covered. Because

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been investigating GSMA’s RSPv2 standard and the processes used to promulgate that standard as well as its proposed successor, RSPv3” due to “significant concerns that GSMA and its operator members used an unbalanced standard-setting process” with “self-dealing provisions designed to enhance or maintain the incumbent operators’ competitive position by entrenching network locking practices”).

<sup>905</sup> DOJ GSMA Letter at 6.

<sup>906</sup> MEMA Class 10 Opp’n.

<sup>907</sup> See 2015 Recommendation at 241–44 (summarizing opposition by automakers and transportation regulatory agencies to vehicle repair class on grounds such as “vehicle safety, energy policy (including fuel efficiency), the environment (including air pollution and emission of greenhouse gas pollutants)”; 2018 Recommendation at 214–15 (opposition to repair class covering vehicles include “concerns regarding vehicle safety, environmental impact, unauthorized access to private data, and compliance with regulations promulgated by other federal agencies”).

<sup>908</sup> 2015 Recommendation at 248; see also 2018 Recommendation at 215–16 (concerns raised regarding vehicle safety and pollution “d[id] not significantly affect the Acting Register’s calculus” to modify repair exemption that retained lawful modification requirement).

<sup>909</sup> 37 C.F.R. § 201.40(b)(5).

MEMA's concerns are addressed by the existing regulatory limitation, the Register concludes that the foregoing analysis is unaffected.<sup>910</sup>

### 3. NTIA Comments

As it has since 2012, NTIA supports modifying the unlocking exemption to cover all lawfully owned wireless devices.<sup>911</sup> It credits proponents' evidence that an increasing number of wireless devices are in the market and believes that an exemption for particular categories of devices is "both unnecessary and too inflexible."<sup>912</sup> NTIA also views this exemption as an opportunity for the Office to "make clear" that this proceeding is not a forum for arguments predicated on non-copyright concerns.<sup>913</sup>

As explained above, the Register agrees that the record for this class supports an exemption covering all wireless devices.

### 4. Conclusion and Recommendation

Based on the augmented record provided to the Office in this rulemaking, the Register concludes that proponents have met their burden to show that the statutory prohibition is likely to cause adverse effects on the ability to unlock wireless devices of any category. The statutory factors weigh in favor of expanding the exemption to all wireless devices, and no factors weigh against expansion. The Register finds it appropriate to modify the current unlocking exemption to cover all wireless devices.

The Register accordingly recommends that the Librarian designate the following class:

**Computer programs that enable 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.**

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<sup>910</sup> In the unanticipated event that MEMA identifies increased instances of unauthorized circumvention stemming from this expanded exemption, the Office would welcome report in the next rulemaking cycle in the event it is asked whether renewal of the exemption is appropriate.

<sup>911</sup> NTIA Letter at 68.

<sup>912</sup> *Id.* at 69.

<sup>913</sup> *Id.*; see also Section 1201 Report at 125 (noting that the Office will not "categorically" exclude non-copyright concerns from statutory analysis but will be "principally focused on the copyright concerns" implicated by proposed exemptions).

## *K. Proposed Class 11: Computer Programs—Jailbreaking*

### **1. Background**

#### **a. Summary of Proposed Exemptions**

Class 11 comprises two requests to expand the current exemptions for “jailbreaking,” which refers to “the process of gaining access to the operating system of a computing device . . . to install and execute software that could not otherwise be installed or run on that device, or to remove pre-installed software that could not otherwise be uninstalled.”<sup>914</sup> First, EFF seeks to clarify and expand the current exemption pertaining to jailbreaking smart TVs to include video streaming devices.<sup>915</sup> Second, SFC seeks to enable the installation of alternative firmware in routers and other networking devices.<sup>916</sup>

Because the petitions are separate but related, each is discussed separately within this class. For the reasons discussed below, the Register recommends that the proposed exemptions be granted.

#### *i. Video Streaming Devices*

In the 2018 rulemaking, the Office recommended, and the Librarian adopted, an exemption permitting the jailbreaking of voice assistant devices and renewed exemptions for smartphones, tablets and other portable all-purpose mobile computing devices, and smart TVs.<sup>917</sup> In the current proceeding, EFF seeks to clarify the scope and definition of smart TVs.<sup>918</sup> EFF proposes revising the exemption to clarify that it applies to:

[C]omputer programs on devices that are primarily designed to display software applications on a screen, including applications that stream video delivered via the Internet, where such devices connect to but are not physically integrated into a display.<sup>919</sup>

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<sup>914</sup> 2015 Recommendation at 172.

<sup>915</sup> See 37 C.F.R. § 201.40(b)(7); EFF Class 11 Pet. at 2.

<sup>916</sup> See Software Freedom Conservancy (“SFC”) Class 11 Pet. at 2.

<sup>917</sup> The jailbreaking exemptions are codified in separate regulatory subparagraphs. See 37 C.F.R. § 201.40(b)(6)–(8).

<sup>918</sup> See EFF Class 11 Pet. at 2.

<sup>919</sup> EFF Class 11 Initial at 2 (emphasis omitted); see also EFF Class 11 Reply at 1 (same). This language differs from the language that EFF proposed in its petition for a new exemption. See

EFF contends that it is “unclear whether th[e] [current] exemption includes hardware devices that enable the viewing of video streams, along with other software applications, when such devices are not physically integrated into a television.”<sup>920</sup> According to EFF, “[t]oday, devices designed to run video streaming apps can either be integrated into a television or available as a separate physical device, often a box or ‘stick’ that connects to a television.”<sup>921</sup> FSF filed a brief comment in support of the petition.<sup>922</sup> The petition was opposed by ACT,<sup>923</sup> DVD CCA and AACS LA,<sup>924</sup> and Joint Creators.<sup>925</sup>

*ii. Routers and Other Networking Devices*

SFC requests a new exemption to permit the circumvention of access controls on computer programs within “routers and other networking devices to enable the installation of alternative firmware.”<sup>926</sup> SFC contends that the exemption is needed “to enable owners of wireless routers and other networking devices to improve the reliability, functionality, and security of their devices by installing alternative operating

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EFF Class 11 Pet. at 2 (“[C]omputer programs on devices that are primarily designed to display software applications on a *television*, including applications that stream video delivered via the Internet, where such devices are not physically integrated into a *television*.”) (emphasis added). During the hearing, EFF explained that this change in wording was intended to encompass “a computer monitor” or devices that “could take an HDMI input.” Tr. at 863:18–864:08 (Apr. 21, 2021) (Stoltz, EFF); *see also* EFF Class 11 *Ex Parte* Letter at 3 (July 28, 2021) (describing the reason for replacing the word “television” in its subsequent comments).

<sup>920</sup> EFF Class 11 Pet. at 2.

<sup>921</sup> *Id.*

<sup>922</sup> FSF Class 11 Initial. The Office received two comments that discussed jailbreaking in general. *See* Arvind Puri Class 11 Initial; Anonymous Class 11 Reply. While the anonymous comment briefly discussed opposition to the “modification of ‘streaming devices’ as these have one intended purpose which connects a user to a subscription service,” no further details were provided. Anonymous Class 11 Reply.

<sup>923</sup> ACT Class 11 Opp’n.

<sup>924</sup> DVD CCA & AACS LA Class 11 Opp’n. DVD CCA & AACS LA opposed the proposed exemption “to the extent that it could be read to permit circumvention of DVD and Blu-ray players.” DVD CCA & AACS LA Class 11 Opp’n at ii.

<sup>925</sup> Joint Creators Class 11 Opp’n.

<sup>926</sup> SFC Class 11 Pet. at 2.

system software.”<sup>927</sup> FSF filed a brief comment in support of the petition.<sup>928</sup> The petition was opposed by ACT and Joint Creators.<sup>929</sup>

## b. Overview of Issues

### i. Video Streaming Devices

As the Office has noted in prior rulemakings, smart TVs often contain TPMs, such as encryption and administrative access controls, that “restrict access to the TV’s firmware.”<sup>930</sup> In the 2015 rulemaking, the Office recommended an exemption to allow jailbreaking of “computer-embedded televisions (‘smart TVs’),” concluding that the “prohibition on circumvention [was] preventing installation of legitimate third-party software applications that can enhance the smart TV’s functionality.”<sup>931</sup> For example, third-party applications can improve accessibility features, expand compatibility with peripheral hardware, and allow adjustments of visual elements such as aspect ratio.<sup>932</sup> The exemption was renewed in 2018.<sup>933</sup>

EFF now urges the Office to expand the exemption to specifically cover “video streaming devices” such as “the Roku line of products, the Amazon Fire TV Stick, and the Apple TV.”<sup>934</sup> EFF asserts that changes in the marketplace warrant the expansion, including that smart TV software is increasingly integrated into separate video streaming devices that connect to a television.<sup>935</sup> EFF contends that, except for their

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<sup>927</sup> SFC Class 11 Initial at 2. SFC refers to the software on wireless routers collectively as “‘firmware’ because it is installed in the router’s semi-permanent memory.” *Id.*

<sup>928</sup> FSF Class 11 Initial.

<sup>929</sup> ACT Class 11 Opp’n; Joint Creators Class 11 Opp’n. The Office received one comment that discussed jailbreaking in general. *See* Arvind Puri Class 11 Initial. While DVD CCA & AACS LA filed opposition comments for Class 11 overall, their comment appears to focus mainly on the proposed exemption pertaining to video streaming devices. *See generally* DVD CCA & AACS LA Class 11 Opp’n. During the hearings, however, DVD CCA & AACS LA expressed concern with the proposed exemption pertaining to routers and other networking devices. *See* Tr. at 894:07–895:04 (Apr. 21, 2021) (Ayers, DVD CCA & AACS LA).

<sup>930</sup> 2015 Recommendation at 203.

<sup>931</sup> *Id.* at 215.

<sup>932</sup> *Id.* at 215 (citing SFC 2015 Class 20 Supp. at 5–6).

<sup>933</sup> *See* 2018 Recommendation at 24–25.

<sup>934</sup> EFF Class 11 Pet. at 2.

<sup>935</sup> *Id.*

location, these devices “are functionally and architecturally identical to smart TVs,”<sup>936</sup> sometimes even running the same underlying software as the smart TV itself.<sup>937</sup> EFF notes that, similar to smart TVs, video streaming devices “are computing devices that run a variety of programs, including but not limited to programs that play video streams received over the Internet.”<sup>938</sup>

Opponents raise concerns that EFF’s proposed regulatory language could be read broadly to cover devices not discussed by EFF’s comments. Joint Creators argue that the language would encompass “all video transmission devices” rather than the “handful of specific uses, including uses of devices like Amazon Fire, Apple TV, and Roku,” cited in EFF’s comments.<sup>939</sup> Joint Creators contend that the “proposed class would arguably sweep in all ‘over-the-top set top boxes’ such as cable boxes and satellite service boxes, video game consoles, . . . disc players that transmit content to TVs,” and video game controllers.<sup>940</sup> DVD CCA and AACCS LA similarly assert that the proposed class “will swallow any device that connects to a TV for viewing content,” including a “DVD or Blu-ray player with streaming functionalities[,] . . . DVD and Blu-ray players, . . . DVRs, video game consoles, Kodi boxes, other casting devices, and even mobile phones.”<sup>941</sup> In response, EFF states that its language “covers only a narrow category of devices that is well understood in the marketplace: devices that run a variety of applications, with a primary purpose of streaming video from the Internet for display on a television screen, and which are not integrated into other types of devices such a Blu-ray players or game consoles.”<sup>942</sup>

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<sup>936</sup> EFF Class 11 Initial at 3; *see also* EFF Class 11 Reply at 1–2 (“These devices are functionally equivalent to the class granted in 2018 for smart TVs . . . except that they do not integrate a screen into the same device as the processor and network adaptor.”).

<sup>937</sup> *See* EFF Class 11 Initial at 3 n.4 (“‘Roku TVs’ are smart TVs made by numerous manufacturers that incorporate Roku hardware and software, providing apps, a voice assistant, and integration with some Apple devices. . . . Roku ‘streaming players,’ such as the Roku Premiere, run the same software and incorporate the same functionality but in a physically separate enclosure that connects to a display through an HDMI cable.”) (internal citations omitted).

<sup>938</sup> *Id.* at 3.

<sup>939</sup> Joint Creators Class 11 Opp’n at 2–3.

<sup>940</sup> *Id.* at 3 & n.6.

<sup>941</sup> DVD CCA & AACCS LA Class 11 Opp’n at 1, 6; *see also id.* at 6 n.10 (“Over-the-Top (‘OTT’) is also an elusive term, as it too refers to a broad and varied array of devices.”).

<sup>942</sup> EFF Class 11 Reply at 2; *see also* Tr. at 858:16–25 (Apr. 21, 2021) (Stoltz, EFF). In a subsequent *ex parte* meeting with the Office, EFF described the test as the “primary function” test. *See* EFF Class 11 *Ex Parte* Letter at 3 (July 28, 2021). Additionally, EFF states that “[s]et-top boxes that receive video from FCC-regulated multichannel video programming distributors such as cable or

Opponents also question the proposed language regarding a device’s “primary purpose.” DVD CCA and AACCS LA express concern about how that standard would apply to multifunctional devices and noted that a device’s primary purpose could evolve over time.<sup>943</sup> Joint Creators view the test as overly subjective, explaining that, for some individuals, the primary purpose of using a device, such as a Blu-ray player, is to access video streaming applications when they do not have a smart TV.<sup>944</sup>

EFF has stated throughout this proceeding that it intends the exemption to include only devices that physically connect to a television and whose primary purpose is streaming video from the internet. To the extent such devices are adversely affected by the prohibition on circumvention, the Register will recommend regulatory language that responds to opponents’ concerns about the operation and scope of the exemption.

*ii. Routers and Other Networking Devices*

SFC seeks to jailbreak an entirely new category of devices: routers and other networking devices.<sup>945</sup> SFC offers a number of reasons for seeking such access. First, it contends that “encryption schemes” and “administrative access controls (such as developer passwords)” are preventing users from installing alternative firmware, fixing security flaws, and enabling new functionality, among other noninfringing uses.<sup>946</sup> SFC notes that “manufacturer-supplied firmware is a ‘take it or leave it’ proposition, leaving consumers with limited options for deciding what tools to install or how the router is configured.”<sup>947</sup> Second, SFC argues that jailbreaking will enable users to continue using routers and other networking devices “[w]hen manufacturers stop providing updates,” thereby preventing the routers from becoming “increasingly vulnerable to attack by malicious parties, and . . . becom[ing] functionally obsolete prematurely as networking protocols advance and the devices become incompatible with current standards.”<sup>948</sup>

As with EFF’s proposal for smart TVs, opponents raise concerns that the proposed inclusion of the term “other networking devices” is “very broad” and could be

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satellite (devices that are generally leased from MVPDs rather than sold) are likewise not included because they primarily receive video from sources other than the Internet.” EFF Class 11 Reply at 4; *see also* EFF Class 11 *Ex Parte* Letter at 3 (July 28, 2021).

<sup>943</sup> Tr. at 860:07–21 (Apr. 21, 2021) (Ayers, DVD CCA & AACCS LA).

<sup>944</sup> Tr. at 861:13–862:12 (Apr. 21, 2021) (Williams, Joint Creators).

<sup>945</sup> SFC Class 11 Pet. at 2.

<sup>946</sup> *Id.*; *see also* SFC Class 11 Initial at 3–4 (discussing common examples of TPMs and TPMs used in specific routers); Tr. at 899:07–23 (Apr. 21, 2021) (Williamson, SFC) (discussing examples of TPMs relevant to the proposed exemption).

<sup>947</sup> SFC Class 11 Initial at 2.

<sup>948</sup> *Id.*



construed to “arguably sweep in anything with Wi-Fi.”<sup>949</sup> Specifically, DVD CCA and AACSLA note that “many devices now generate their own local [wireless] networks . . . in order to make it easy for a consumer to make a network connection with that device and to use a remote device to adjust other settings,” including, for example, “a game console that generates its own [network] in order to allow easy set up.”<sup>950</sup> While Joint Creators “do not object to repairing wireless routers to enable connections to internet networks,” they similarly argue that SFC’s proposed exemption is “vague and unbounded by practical limitations,”<sup>951</sup> and could sweep in “things like [virtual reality] headsets [and] other devices that can connect directly” to the internet due to the presence of a wi-fi chip.<sup>952</sup>

SFC responds that the proposed exemption is “absolutely not” intended to “sweep in just any device that has networking capabilities.”<sup>953</sup> SFC states that it would support an exemption that covers only “dedicated networking devices, including routers, switches, hubs, bridges, gateways, modems, repeaters, and access points.”<sup>954</sup> Opponents did not dispute the limiting explanation provided by SFC. Therefore, the Register will evaluate the proposed exemption as defined in this manner.

## 2. Discussion

### a. Works Protected by Copyright

With respect to the requirement that the relevant TPMs control access to copyrightable works, both proposed exemptions involve firmware that constitutes computer programs within the meaning of the Copyright Act.<sup>955</sup> Similar to the 2018 and 2015 rulemaking, the Register finds that at least some works included in the proposed exemptions are protected by copyright.

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<sup>949</sup> Tr. at 894:11–19 (Apr. 21, 2021) (Ayers, DVD CCA & AACSLA).

<sup>950</sup> Tr. at 894:21–895:04 (Apr. 21, 2021) (Ayers, DVD CCA & AACSLA).

<sup>951</sup> Joint Creators Class 11 Opp’n at 7.

<sup>952</sup> Tr. at 895:18–24 (Apr. 21, 2021) (Williams, Joint Creators).

<sup>953</sup> Tr. at 895:06–09 (Apr. 21, 2021) (Williamson, SFC).

<sup>954</sup> Tr. at 895:09–15 (Apr. 21, 2021) (Williamson, SFC).

<sup>955</sup> See 2018 Recommendation at 167; 2015 Recommendation at 172 n.1077; see also EFF Class 11 Initial at 6 (“The works at issue in this request are firmware and operating system programs installed on video streaming devices, which are subject to copyright.”); SFC Class 11 Initial at 4 (“All of the works in question are software applications protected by copyright . . .”).

**b. Asserted Noninfringing Uses**

*i. Video Streaming Devices*

EFF concedes that jailbreaking involves modifying the device software and thus implicates the derivative work right, but it argues that the activity is protected by fair use.<sup>956</sup> In EFF's view, the Register and Librarian "correctly concluded [in past rulemakings] that modifying the firmware in one's device in order to run lawfully acquired software is a fair use, falling squarely within Congress's intent to promote software interoperability."<sup>957</sup> Furthermore, EFF contends that "[t]he relevant law has not changed materially since the last rulemaking cycle,"<sup>958</sup> and that video streaming devices are "functionally identical to smart TVs for which jailbreaking exemptions have been granted in two previous rulemakings."<sup>959</sup>

In 2015, the Register concluded, based on the case law and submitted evidence, that "modifications to [smart TV] firmware to enable interoperability with third-party software are likely to constitute a fair use."<sup>960</sup> The Register reached this conclusion because the use was for the noncommercial and personal purpose of "enabling interoperability with other computer programs," the copyrighted material at issue was "functional," and the amount of the copyrighted material was of limited relevance, due in part to the small number of modifications made to enable jailbreaking.<sup>961</sup> The Register also found that market harm was unlikely because there was no evidence provided to support the claim that "jailbreaking . . . smart TVs w[ould] make it easier to gain unauthorized access to copyrighted content, or that it would otherwise undermine smart TVs as a platform for the consumption of expressive works."<sup>962</sup> After reviewing subsequent fair use case law, the Register finds that the 2015 analysis remains sound and is relevant for analyzing the parties' fair use arguments.

Regarding the first fair use factor, EFF asserts several arguments for why the purpose and character of jailbreaking favors its proposal, including that the "purpose of jailbreaking non-integrated smart TVs is identical to the purpose of jailbreaking

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<sup>956</sup> EFF Class 11 Initial at 6.

<sup>957</sup> *Id.*; see also 2018 Recommendation at 167–72; 2015 Recommendation at 188–189, 213–15; 2012 Recommendation at 72–74; 2010 Recommendation at 92–100.

<sup>958</sup> EFF Class 11 Initial at 6.

<sup>959</sup> *Id.* at 9.

<sup>960</sup> 2015 Recommendation at 213.

<sup>961</sup> *Id.* at 213–14.

<sup>962</sup> *Id.* at 214–15.

physically integrated smart TVs.”<sup>963</sup> Similar to its reasoning in 2018, EFF argues that the “analysis and modification of the functional aspects of software” for purposes of interoperability is a favored purpose under applicable precedent.<sup>964</sup> In response, opponent ACT contends that the “primary reason people want to jailbreak these devices has nothing to do with the reasons provided by the petitioner,” and has everything to do with “consumers unlock[ing] free content.”<sup>965</sup> Joint Creators also note that “[o]nce circumvented, even for the ostensible purpose of first installing a lawful application, nothing prevents a user from later installing infringing applications or applications that enable infringement on these devices.”<sup>966</sup>

As to the second fair use factor, EFF argues that the nature of the copyrighted work favors fair use where the copying of software is necessary to understand its functional aspects. It notes that the “firmware and operating system code on video streaming devices lie[] on the functional end of the spectrum.”<sup>967</sup> Regarding the third factor, EFF contends that it “favors fair use, or is neutral,” because when “jailbreaking video streaming devices, . . . the portion of the firmware that must be permanently modified to accomplish a jailbreak is a very small proportion of the overall code.”<sup>968</sup>

Discussing the fourth fair use factor, EFF argues that jailbreaking video streaming devices “does not foreclose sales of the device firmware,” as the firmware “is sold along with the devices themselves, and not separately.”<sup>969</sup> It contends that “[f]irmware

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<sup>963</sup> EFF Class 11 Reply at 4; *see e.g.*, EFF Class 11 Initial at 8 (quoting 2018 Recommendation at 170) (noting that users seek to jailbreak video streaming devices for privacy purposes, which “is a purpose for which circumvention may be warranted”).

<sup>964</sup> EFF Class 11 Initial at 7; *see also id.* at 7–8 (discussing the decisions in *Sega Enters. Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992), and *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000) and noting that the legislative history of section 1201 “encourage[s] interoperability”).

<sup>965</sup> ACT Class 11 Opp’n at 3; *see also id.* at 4 (“The ‘why jailbreak?’ search resulted in post after post focused exclusively on how to get free content.”).

<sup>966</sup> Joint Creators Class 11 Opp’n at 4.

<sup>967</sup> *See* EFF Class 11 Initial at 10 (citing *Sega*, 977 F.2d at 1526; *Connectix*, 203 F.3d at 605); *see also id.* (noting that the Register has previously concluded that “second factor favors fair use for jailbreaking,” as “bootloaders and operating systems are largely functional works” (citing 2018 Recommendation at 176; 2015 Recommendation at 188; 2012 Recommendation at 73; 2010 Recommendation at 96)).

<sup>968</sup> EFF Class 11 Initial at 11–12; *see also id.* at 11 (discussing how the CheckRa1n jailbreak and obtaining root access to an Amazon Fire TV Stick involve a small amount of code).

<sup>969</sup> *Id.* at 12; *see also* EFF Class 11 Reply at 6 (“Smart TV devices are not sold as bare metal waiting for a separate purchase of operating firmware; they are sold with a copy of the firmware, and the copyright holder receives compensation.”).

upgrades are not sold, but are made available to device owners as a free download,” and therefore “do[] not cause any proliferation of infringing copies, nor replace any sales.”<sup>970</sup> Furthermore, EFF asserts that “[j]ailbreaking has not harmed sales of similar devices,” noting that “revenues from sales of smart TVs (and their accompanying firmware) have risen steadily since 2014, before the Librarian first granted an exemption for jailbreaking them, . . . and are predicted to continue rising.”<sup>971</sup>

After considering the parties’ arguments and evidence, as well as the Office’s prior fair use analysis, the Register concludes that EFF’s requested exemption covers activities that constitute noninfringing fair use. While the 2015 analysis focused on software embedded within a smart TV,<sup>972</sup> the record does not suggest that the location of the software affects or alters its functions, and thus the relevant use. Regardless of where the software is located, EFF’s proposed use remains the same, and the nature of the software remains functional. Similarly, the software’s location does not appear to affect the portion used in jailbreaking, nor does it alter the Register’s prior finding that there is not a market for the software separate from the device itself.<sup>973</sup> While opponents argue that the proposed exemption could lead to unauthorized access to copyrighted works and to unapproved apps, as in 2015, “[n]o actual evidence was submitted to illustrate the claim that jailbreaking . . . will make it easier to gain unauthorized access to copyrighted content.”<sup>974</sup> The Register also reaches this conclusion based on the narrow construction of this class and its application to video streaming devices that physically connect to a television and whose primary purpose is streaming video from the internet. Because the Register concludes that the location of the software does not alter the Office’s previous fair use analysis, she finds that Class 11 describes a noninfringing fair use.

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<sup>970</sup> EFF Class 11 Initial at 12.

<sup>971</sup> *Id.* (citing H. Tankovska, *Smart TV market revenue in the United States from 2014 to 2025*, STATISTA (Aug. 27, 2020), <https://www.statista.com/statistics/781427/smart-tv-market-revenue-in-the-us/>); *see also id.* (explaining how “the ability to jailbreak may *increase* the market value of a video streaming device”).

<sup>972</sup> 2015 Recommendation at 213–15.

<sup>973</sup> *See id.* at 214–15.

<sup>974</sup> *Id.* Instead, opponents argue as a general matter that jailbreaking creates the opportunity for piracy. *See* ACT Class 11 Opp’n at 4–6 (making arguments about app piracy that are not necessarily tied to streaming devices and noting the security risks from jailbreaking); Joint Creators at 3–5 (raising concerns about “television service set-top boxes and Blu-ray disc players,” as well as discussing the sale of infringing devices rather than lawful streaming devices). ACT alludes to “countless online posts and tutorials about how to jailbreak streaming devices in order to get free access to unlimited video content,” but it does not provide examples of them. ACT Class 11 Opp’n at 4.

*ii. Routers and Other Networking Devices*

The Register concludes that SFC has carried its burden of demonstrating that circumventing access controls on routers and other networking devices is likely to enable noninfringing uses of that firmware.<sup>975</sup> It appears undisputed that the proposed exemption seeks to permit the installation of software, such as OpenWrt, that “is composed of software components licensed under” Free and Open Source Software (“FOSS”) terms.<sup>976</sup> These licensing terms permit anyone to “copy, modify, and redistribute their code.”<sup>977</sup> In such cases, the Register concludes that the uses SFC seeks to enable would be licensed and thus noninfringing. To the extent that jailbreaking of these devices involves modification of the firmware to enable interoperability with lawfully obtained applications, the activity is likely fair use under the same analysis provided above. The Register therefore finds that SFC has met its burden of demonstrating that jailbreaking routers and other networking devices is likely to be noninfringing.

**c. Causation**

The Register finds that EFF and SFC have met their burden of showing that the statutory prohibition on circumvention of access controls limits their ability to engage in the proposed uses. But for the prohibition, users likely could gain lawful access to the firmware for these purposes.<sup>978</sup>

**d. Asserted Adverse Effects**

*i. Video Streaming Devices*

EFF argues that the prohibition on circumvention adversely affects noninfringing jailbreaking of video streaming devices because “[w]ithout a clarification or expansion to non-integrated devices, the availability of privacy enhancements, user control, and enhanced functionality on those devices would be limited by operation of the DMCA to

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<sup>975</sup> The term “other networking devices” is limited to the narrowed scope of devices proposed by SFC, as discussed above.

<sup>976</sup> SFC Class 11 Initial at 3; *see also id.* at 4 (stating that the firmware on most routers and other networking devices is “built primarily” from FOSS components).

<sup>977</sup> *Id.* at 3–4.

<sup>978</sup> *See* EFF Class 11 Initial at 3–4 (stating that AppleTV devices contain cryptographic verifications preventing the running of non-approved applications and cryptographic checks that prevent modification or replacement of the operating system and that accessing the firmware on Roku and Amazon Fire OS requires modifying the access controls or firmware on the device); SFC Class 11 Initial at 3 (explaining that obtaining access to firmware requires circumvention of “encryption and cryptographic signing of firmware files, and access control measures”).

what the manufacturer chooses to provide.”<sup>979</sup> It asserts that without jailbreaking, users cannot add many significant and popular additions to video streaming devices, such as “replac[ing] the home screens generated by their streaming devices,” connecting video streaming devices to other hardware and input devices,<sup>980</sup> installing “an alternative operating system on their devices,” or “writing software that can run on multiple hardware platforms.”<sup>981</sup> It further argues that TPMs limit users’ control over their privacy, as users are prevented from installing virtual private networks (“VPN”s) and “encrypt[ing] their network communications.”<sup>982</sup>

Opponents argue that there are viable alternatives available to circumvention, and thus section 1201 does not adversely affect users seeking, for example, to change the device’s home screen or screen saver, connect a video streaming device to other hardware and input devices, or to control their privacy.<sup>983</sup> Joint Creators contend that “the identified uses can be accomplished through devices without access controls to prevent app installations that are readily available in the marketplace,”<sup>984</sup> while ACT states that there is “plenty of open source streaming capability that you can do without hacking a device.”<sup>985</sup>

According to EFF, these options are not adequate alternatives to circumvention for a number of specific non-infringing uses. Opponents do not specifically dispute EFF’s assertion that these proposed uses cannot be accomplished using manufacturer-provided functionality or firmware. For example, ACT and Joint Creators do not dispute that Apple TV does not allow the installation of third-party applications without jailbreaking or that Android-based devices and other devices still do not allow users to

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<sup>979</sup> EFF Class 11 Initial at 13.

<sup>980</sup> *Id.* at 13. EFF notes that users can utilize the nControl app, which “allows a user to connect a variety of game controllers and joysticks to an AppleTV,” can add a web browser to AppleTVs, which do not “come equipped with a browser,” add other programs to AppleTVs, including “support for an external broadcast TV tuner,” and installing AirMagic that “allows for remote control of an AppleTV from any device on a local network.” *Id.* at 13–14.

<sup>981</sup> *Id.* at 13–14; *see also* Tr. at 890:02–16 (Apr. 21, 2021) (Stoltz, EFF) (confirming that certain actions on video streaming devices require jailbreaking and circumventing access controls).

<sup>982</sup> EFF Class 11 Initial at 14; *see also id.* at 14 (“[A]lthough VPN apps are available in the Apple App Store, and even though the Apple TV uses the same basic networking code as other Apple devices, the access controls on the Apple TV do not allow the installation of a VPN.”); Tr. at 890:02–16 (Apr. 21, 2021) (Stoltz, EFF) (confirming that increasing privacy on video streaming devices requires jailbreaking and circumvention of access controls).

<sup>983</sup> *See, e.g.,* Joint Creators Class 11 Opp’n at 6.

<sup>984</sup> *Id.*; *see also* Tr. at 878:20–879:05 (Apr. 21, 2021) (Williams, Joint Creators); Tr. at 887:18–888:13 (Apr. 21, 2021) (Williams, Joint Creators).

<sup>985</sup> Tr. at 867:01–10 (Apr. 21, 2021) (Reed, ACT).

take certain actions on these devices.<sup>986</sup> EFF more specifically describes applications and programs, such as AirMagic and nControl, that cannot be installed without first jailbreaking a video streaming device.<sup>987</sup> And enabling certain accessibility features, such as “inverting the video to make the text more readable or altering the colors that are displayed on the screen to make them more readable to people with certain visual disabilities” cannot be done “at all on an Apple device without jailbreaking.”<sup>988</sup> The Register credits these arguments and finds that, at least for some third-party applications, there are not viable alternatives to circumvention.

Turning to the section 1201 statutory factors, the Register finds that the first factor, the availability for use of copyrighted works, favors the proposed exemption for substantially the same reasons as in the 2018 rulemaking. There, the Office concluded that “access controls prevent consumers from using third-party applications, so denying a jailbreaking exemption would significantly diminish the availability of those works,” and that “granting the exemption is unlikely to discourage use or development of devices or the copyrighted firmware needed to run them.”<sup>989</sup> Proponents have also persuasively established that the exemption will have neither positive nor negative effects “on the availability of copyrighted firmware and application software,” similar to mobile computing devices and applications, whose growth has continued “despite (or because of) the existence of a jailbreaking exemption.”<sup>990</sup>

Regarding the second statutory factor, the availability for use of works for nonprofit archival, preservation, and educational purposes, the Register finds that this factor is neutral. Similar to previous rulemakings, the Register concludes that based on the current record, “this factor is not directly implicated by the jailbreaking exemptions.”<sup>991</sup>

As to the third statutory factor, which addresses criticism, comment, news reporting, teaching, scholarship, and research, the Register finds that this factor slightly favors the proposed exemption. As in 2018, the Register concludes that “the current record suggests that jailbreaking may help further research of security flaws by allowing users

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<sup>986</sup> See Tr. at 879:12–880:19 (Apr. 21, 2021) (Stoltz, EFF).

<sup>987</sup> See Tr. at 890:04–891:01 (Apr. 21, 2021) (Stoltz, EFF); EFF Class 11 Initial at 13–14 (stating that the nControl app “allows a user to connect a variety of game controllers and joysticks to an AppleTV,” and the AirMagic program “allows for remote control of an AppleTV from any device on a local network”).

<sup>988</sup> Tr. at 891:22–892:05 (Apr. 21, 2021) (Stoltz, EFF).

<sup>989</sup> 2018 Recommendation at 174 (internal quotations omitted). See also 2012 Recommendation at 76 (similar); 2010 Recommendation at 101 (similar).

<sup>990</sup> EFF Class 11 Initial at 14; see also 2015 Recommendation at 216.

<sup>991</sup> 2018 Recommendation at 176 (citing 2015 Recommendation at 190; 2012 Recommendation at 77; 2010 Recommendation at 101).

to access a device’s ‘lower-level functionality’ to detect vulnerabilities.”<sup>992</sup> EFF provides evidence that the proposed exemption may allow users to research device security or vulnerability and, in turn, enhance security.<sup>993</sup> Additionally, the Register agrees with EFF’s argument that the exemption “will not have a significant impact” on criticism, comment, news reporting, teaching, scholarship, or research.<sup>994</sup> According to EFF, “all of the software that can be installed on a jailbroken device can also be installed on a smart TV for which an exemption is already available (and for which no objections were filed in this rulemaking cycle).”<sup>995</sup>

Based on the record as a whole, the Register concludes that the fourth statutory factor, the effect of circumvention of technological measures on the market for or value of copyrighted works, favors an exemption. With respect to the effect on the value of the device firmware, the same conclusions noted above regarding the fourth fair use factor, as well as the Office’s findings in the 2018 and 2015 rulemakings, are applicable here. In those rulemakings, there was “no evidence that the prior jailbreaking exemptions have harmed the market for firmware” in smartphones, voice assistant devices, smart TVs, or all-purpose mobile devices, and nothing in the record suggests that a different conclusion is warranted for video streaming devices.<sup>996</sup> Additionally, the Register concludes that based on the current record, expanding the current exemption to video streaming devices is unlikely to harm the market for copyrighted works that can be accessed through video streaming devices. The Register recognizes that piracy of streaming content is a highly significant concern, and acknowledges the prevalence of video streaming devices. Similar to the Register’s finding in the 2018 rulemaking, however, the evidence does not indicate that past jailbreaking exemptions have increased levels of piracy on devices within the current exemption, and neither ACT nor Joint Creators opposed the renewal petition for the existing exemption. It is also significant that, as noted in the 2018 rulemaking, streaming content providers typically control access to content “with TPMs separate from those protecting the firmware.”<sup>997</sup>

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<sup>992</sup> 2018 Recommendation at 177 (quoting 2015 Recommendation at 191).

<sup>993</sup> EFF Class 11 Initial Ex. A, at 1.

<sup>994</sup> *Id.* at 15.

<sup>995</sup> *Id.* at 15.

<sup>996</sup> 2018 Recommendation at 180; 2015 Recommendation at 191, 216; *see also* EFF Class 11 Initial at 15 (arguing that the proposed exemption is “likely to stimulate the market for such works by permitting developers to create new applications for the devices[,] . . . thus making these devices—together with their copyrighted firmware—more attractive to consumers”).

<sup>997</sup> 2018 Recommendation at 181; *see* EFF Class 11 Reply at 7 (citing 2018 Recommendation at 181 n.1121) (“[A]udiovisual content streamed from the Internet can be and often is subjected to separate technological protection measures that are outside the scope of this proposed class. In



ACT and Joint Creators suggest that jailbreaking would facilitate the installation of counterfeit apps and apps that enable unauthorized access to copyrighted content. Joint Creators argue that once a video streaming device is circumvented, “even for the ostensible purpose of first installing a lawful application, nothing prevents a user from later installing infringing applications or applications that enable infringement on these devices.”<sup>998</sup> They provide examples of lawsuits filed against distributors of “infringing devices and applications designed for Kodi and other platforms.”<sup>999</sup> Ultimately, Joint Creators contend that “[a]llowing the circumvention of a new category of devices that is specifically designed to stream copyrighted content to televisions would undermine the legitimate marketplace, confuse consumers as to which applications provide authorized access . . . and harm copyright owners.”<sup>1000</sup> Accordingly, Joint Creators urge that any expanded jailbreaking exemption “should *at least* include limitations similar to the existing exemption for voice assistants.”<sup>1001</sup>

ACT asserts that “[j]ailbreaking these devices to gain free access to content from unapproved apps threatens the market for App Association members innovating new means of developing and delivering content,” as “[t]rusted app stores serve as a vital foundation for the growing uses of apps across industries and enterprises.”<sup>1002</sup> Additionally, ACT contends that the installation of counterfeit apps or apps that enable unauthorized access to copyrighted content “threaten end-user confidence and can lead to customer data loss, interruption of service, revenue loss, and reputational damage. These threats have caused significant damage, and continue to pose substantial hazards, to app developers.”<sup>1003</sup>

The Register believes that two limitations address opponents’ market harm concerns.<sup>1004</sup> First, the current exemption, and the recommended regulatory language, are limited to where circumvention is accomplished for the “sole purpose of enabling interoperability” with lawful applications. Any activities that fall outside those permitted by the exemption, such as jailbreaking a video streaming device to install unlawful

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2018, the Register found the presence of separate TPMs on streaming media to be significant in determining that an exemption has no meaningful impact on infringement.”).

<sup>998</sup> Joint Creators Class 11 Opp’n at 4.

<sup>999</sup> *Id.*; see also *id.* at 4–5 (discussing past Notorious Markets for Counterfeiting and Piracy reports authored by the United States Trade Representative that highlight illicit streaming devices and Internet Protocol television (“IPTV”) apps).

<sup>1000</sup> *Id.* at 5–6.

<sup>1001</sup> *Id.* at 8; see 37 C.F.R. § 201.40(b)(8).

<sup>1002</sup> ACT Class 11 Opp’n at 5.

<sup>1003</sup> *Id.* at 6.

<sup>1004</sup> See Joint Creators Class 11 Opp’n at 4–6, 8; ACT Class 11 Opp’n at 5–6.

applications, are not covered by the exemption and will violate section 1201. Second, the Register will recommend regulatory language that jailbreaking must not be for the purpose of gaining unauthorized access to other copyrighted works. Because circumvention must be for the “sole purpose” of enabling interoperability, including this language does not substantively change the scope of the exemption.

Regarding the fifth statutory factor, the Register does not find any additional factors relevant to the asserted adverse effects in this proposed class.

Based on the record, the Register concludes that, to the extent the current smart TV exemption could be construed as excluding video streaming devices, users are adversely affected in their ability to jailbreak video streaming devices, or are likely to be so adversely affected during the next three years. The Register accordingly finds that proponents have carried their burden to demonstrate such effects.

*ii. Routers and Other Networking Devices*

SFC argues that the prohibition on circumvention adversely affects users’ abilities to legally install FOSS on routers and other networking devices. SFC asserts that without the proposed exemption for jailbreaking, users have “limited options for deciding what tools to install or how the router is configured.”<sup>1005</sup> Specifically, SFC contends that users cannot “improve the router’s performance, reliability, and security, expand its capabilities, and extend its useful life” by installing alternative firmware without circumventing TPMs.<sup>1006</sup> Additionally, it states that the TPMs within routers and other network devices “restrict access to FOSS components pre-installed on the devices by their manufacturers” and “prevent device owners from installing other licensed software on their devices.”<sup>1007</sup> Lastly, SFC alleges that without the proposed exemption, users cannot provide software updates once they are no longer provided by the device manufacturer.<sup>1008</sup>

Joint Creators “do not object to repairing wireless routers to enable connections to internet networks,” but argue that proponents have alternatives to circumvention.<sup>1009</sup> For example, Joint Creators argue that “if SFC is correct that installing an Open Wrt operating system completely replaces a router’s stock firmware such that none of the

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<sup>1005</sup> SFC Class 11 Initial at 2.

<sup>1006</sup> *Id.* at 2–3; *see also* SFC Class 11 Reply at 2 (same).

<sup>1007</sup> SFC Class 11 Initial at 4.

<sup>1008</sup> *Id.* at 5; *see also id.* at 5–6 (explaining how 418 network devices are still supported due to OpenWrt despite discontinuation by manufacturers).

<sup>1009</sup> Joint Creators Class 11 Opp’n at 7.

manufacturer's code continues to be used,"<sup>1010</sup> proponents could simply use a different device to avoid the need for circumvention.<sup>1011</sup> Joint Creators also contend that the proposed exemption is "sufficient[ly] cover[ed]" by sections 1201(g), 1201(i), and 1201(j) "to the extent security or privacy concerns are at issue."<sup>1012</sup>

In response, SFC disputes that there are adequate alternatives to circumvention. It notes that ACT "does not cite a single example" of extensive open-source options and that, in any event, "the availability of FOSS-friendly routers on the market is irrelevant" to the uses in which SFC seeks to engage.<sup>1013</sup> SFC further asserts that "even 'proprietary' router firmwares are built from FOSS components like the Linux kernel and BusyBox" and that "the authors of these components encourage modification and reuse via FOSS licenses."<sup>1014</sup> Lastly, SFC states that its privacy and security-related uses "are not adequately addressed" by sections 1201(g), 1201(i), and 1201(j).<sup>1015</sup>

The Register agrees with proponents and concludes that the alternatives set forth by ACT and Joint Creators are insufficient to accomplish the noninfringing purposes cited by SFC. Neither ACT nor Joint Creators contest the fact that SFC's proposed uses, which are noninfringing, cannot be accomplished using the manufacturer-provided firmware. Similarly, the Register reiterates her previous finding that "section 1201(f) does not unambiguously authorize jailbreaking by end users" and that there is a "general dearth

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<sup>1010</sup> *Id.*

<sup>1011</sup> *Id.* (citing 2010 Recommendation at 220 (rejecting a class to circumvent TPMs on subscription video streaming services that require specific operating system versions of hardware to watch material "because although a user might have been prevented from engaging in a noninfringing use of a work using a particular device, the user could engage in the same noninfringing use of the work using a different device")). The 2010 class cited by Joint Creators was an attempt "to be able to gain access to protected digital works on platforms of their choosing, rather than on the platforms or platform options offered by content providers." 2010 Recommendation at 214. Because SFC here seeks to install licensed software on lawfully owned hardware, the analysis is not analogous. The same is true for ACT's argument that some router manufacturers offer "extensive open-source options" and thus "[h]obbyists and tinkerers" should use those devices instead. See ACT Class 11 Opp'n at 3.

<sup>1012</sup> Joint Creators Class 11 Opp'n at 8.

<sup>1013</sup> SFC Class 11 Reply at 3.

<sup>1014</sup> *Id.* (citing SFC Class 11 Initial at 2 & n.1).

<sup>1015</sup> *Id.* at 4–5 (asserting that section 1201(g) does not "relate to" any of its proposed noninfringing uses, section 1201(i) has "narrow limits" that protect only the individual participating in circumvention, and section 1201(j) contains "limited exemptions" that only allow for correction of vulnerable components, when upgrading a single vulnerable component "typically requires upgrading related components, and most routers require updating the entire firmware as a package").

of case law on that question.”<sup>1016</sup> Nor are sections 1201(g), (i), and (j)—which address encryption research, protection of personally identifying information, and security testing respectively—likely to cover the full range of jailbreaking activities proposed here.

Turning to the section 1201 statutory factors, the Register finds that the first factor favors the proposed exemption. As in prior rulemakings, the Register finds that because “access controls prevent consumers from using third-party applications,” the inability to jailbreak devices with those controls “would significantly diminish the availability of those works.”<sup>1017</sup> Additionally, while SFC’s argument under the first factor is brief, they have provided evidence that the “proposed exemption is primarily focused on increasing device owners’ access to copyrighted works for use on their devices,” which opponents have not disputed.<sup>1018</sup>

The Register finds that the second statutory factor, looking to nonprofit archival, preservation, and educational purposes, is neutral. In previous rulemakings, the Register found that this factor was “not directly implicated by the jailbreaking exemptions,”<sup>1019</sup> and the Register reaches the same conclusion here.

The Register finds that the third statutory factor weighs slightly in favor of the exemption. Based on the current record, the proposed exemption may allow users to research, comment upon, and create new programs or firmware that can be used within routers and other network devices, as well as address any potential security vulnerabilities that may occur. Additionally, similar to past rulemakings, the Register finds that “the current record suggests that jailbreaking may help further research of security flaws by allowing users to access a device’s ‘lower-level functionality’ to detect vulnerabilities.”<sup>1020</sup> The Register’s conclusions are supported by SFC’s assertions that the proposed exemption will “promote research into the improvement of networking technology.”<sup>1021</sup> Specifically, SFC notes that “OpenWrt has been fundamental to a number of such research efforts” and that “[e]ach of these efforts depends upon

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<sup>1016</sup> 2018 Recommendation at 176; *see also* 2015 Recommendation at 181 n.1159; 2012 Recommendation at 71; 2010 Recommendation at 84–85.

<sup>1017</sup> 2018 Recommendation at 174 (quoting 2015 Recommendation at 190) (noting that “granting the exemption is unlikely to discourage use or development of devices or the copyrighted firmware needed to run” third-party applications).

<sup>1018</sup> SFC Class 11 Initial at 6 (citing 17 U.S.C. § 1201(a)(1)(C)(i)) (discussing the number of FOSS packages available to users).

<sup>1019</sup> 2018 Recommendation at 176; 2015 Recommendation at 190; 2012 Recommendation at 77; 2010 Recommendation at 101.

<sup>1020</sup> 2018 Recommendation at 177 (quoting 2015 Recommendation at 191).

<sup>1021</sup> SFC Class 11 Initial at 6 (citing 17 U.S.C. § 1201(i)(1)(C)(iii)).

researchers' ability to install an OpenWrt-based operating system onto consumer networking devices for the purpose of research and testing."<sup>1022</sup> Further, SFC argues that by installing alternative firmware like OpenWrt, "users gain timely security updates for not only late-model devices, but also for devices long-unsupported by their manufacturers, enhancing the security of their networks and extending the life of their hardware, potentially by many years."<sup>1023</sup>

The Register concludes that the fourth statutory factor supports granting the exemption. The record reflects that the proposed exemption "will not cause fewer devices to be sold," but could increase demands for routers and other networking devices.<sup>1024</sup> Additionally, "[t]here is no evidence that the prior jailbreaking exemptions have harmed the market for firmware in smartphones or all-purpose mobile devices," and nothing in the current record suggests that a different conclusion is warranted for routers or other networking devices.<sup>1025</sup> Instead, the record reveals that the proposed exemption would "promote the use of [alternative software] on a broader range of devices" and that this, in turn, would increase the value of manufacturer-supplied firmware, "as the research supported by FOSS firmware projects produces improvements to wireless technology generally."<sup>1026</sup> Furthermore, the record contains no evidence that there is a market solely for the firmware within routers or other networking devices.

Based on the foregoing analysis, the Register finds that users are adversely affected in their ability to jailbreak routers or other networking devices, or are likely to be so adversely affected during the next three years. Thus, the Register finds that the statutory factors favor the proposed exemption.

### 3. NTIA Comments

NTIA agrees with the Register that both exemptions are warranted. Regarding video streaming devices, NTIA notes that users of these devices are "undertaking nearly identical activities" and are "likely to have identical needs for circumventi[on]" as users

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<sup>1022</sup> *Id.* at 6–7.

<sup>1023</sup> *Id.* at 8.

<sup>1024</sup> *Id.* at 7; see also *id.* at 7 (citing Sebastian Anthony, *11 years on: Linksys cashes in on WRT54G popularity with overpriced WRT1900AC router*, EXTREME TECH (Jan. 16, 2014), <https://www.extremetech.com/computing/174875-11-years-later-linksys-cashes-in-on-wrt54gs-popularity-with-overpriced-wrt-1900ac-router>) (discussing that a router supported by OpenWrt was kept "on the market longer than nearly any other consumer router").

<sup>1025</sup> 2018 Recommendation at 180 (citing 2015 Recommendation at 191).

<sup>1026</sup> SFC Class 11 Initial at 7.

covered by the exemption for smart TVs.<sup>1027</sup> It also believes that the exclusion of DVD players and game consoles, as well as the recommended renewal of the current exemption, further support proponents' request.<sup>1028</sup>

NTIA diverges from the Register however, regarding how to implement the new proposed exemption. While NTIA suggests including video streaming devices as a separate device from "smart televisions," the Register believes that the substance of the request may be accomplished simply by defining the term "smart television" to include video streaming devices. The Register's recommended language is further discussed below.

Regarding routers and other networking devices, NTIA finds that the exemption is warranted in light of its limitation to firmware on lawfully acquired devices. It notes that, while the exemption is for a "somewhat different set of use cases," the noninfringing uses are "familiar" and focus on enhancing and improving device functionality.<sup>1029</sup> It also concludes that the proposed uses are "clearly noninfringing" given that users seek to load alternative FOSS software on the devices.<sup>1030</sup>

#### 4. Conclusion and Recommendation

For the reasons described above, proponents have satisfied their burden of showing that technological measures applied to video streaming devices and routers or other networking devices are having, or are likely to have, an adverse effect on noninfringing uses. The Register accordingly recommends adoption of exemptions authorizing the jailbreaking of both types of devices, with appropriate limitations.

First, the Register recommends adding language to the existing smart TV exemption to clarify that the exemption encompasses video streaming devices. To address copyright owners' concerns about scope, the Register adopts EFF's suggestion of a "primary purpose" limitation. The Register intends the new language to cover dedicated streaming devices such as a Roku TV or an Apple TV and to exclude other devices such as DVD players, Blu-ray players, and video game consoles that may be incidentally capable of streaming internet video, but are not primarily designed for such a use. Additionally, the Register intends to exclude cable and satellite set-top boxes that are leased from multichannel video programming distributors.<sup>1031</sup>

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<sup>1027</sup> NTIA Letter at 73. NTIA notes that video streaming devices and smart TVs "essentially perform the same functions [] and often run the same operating systems." *Id.*

<sup>1028</sup> *Id.*

<sup>1029</sup> *Id.*

<sup>1030</sup> *Id.*

<sup>1031</sup> *See* EFF Class 11 Reply at 4.

Second, the Register recommends creating a new exemption for routers and other networking devices. To address copyright owners' concerns, the Register has recommended language limiting the exemption to devices primarily used to enable network connectivity, such as routers, switches, hubs, bridges, gateways, modems, repeaters, and access points. The language is intended to exclude devices that are able to connect to a network, but are not primarily used by consumers as networking equipment. The exemption further excludes devices that are not lawfully owned by those seeking to jailbreak.

Finally, Joint Creators requested that both exemptions include limiting language that circumvention "not [be] accomplished for the purpose of gaining unauthorized access to other copyrighted works,"<sup>1032</sup> as was adopted during the 2018 rulemaking for certain other exemptions, including the exemption for jailbreaking voice assistant devices. The Register does not view this language as a substantive change. Because the current exemption requires that jailbreaking be for the "sole purpose" of enabling the use of "lawfully obtained" software, the existing smart TV exemption does not permit individuals to jailbreak streaming devices for piracy purposes. Nevertheless, the Register concludes that the addition of this language is appropriate to ensure clarity as well as consistency across exemption classes. The recommended language accordingly includes this language in both exemptions.

Accordingly, the Register recommends that the Librarian designate the following classes:

**(1) Computer programs that enable smart televisions to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smart television, and is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. For purposes of this paragraph (b)(10), "smart televisions" includes both internet-enabled televisions, as well as devices that are physically separate from a television and whose primary purpose is to run software applications that stream authorized video from the internet for display on a screen.**

**(2) Computer programs that enable routers and dedicated network 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 router or dedicated network device, and is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. For the purposes of this paragraph (b)(12),**

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<sup>1032</sup> Joint Creators Class 11 Opp'n at 7–8 (emphasis omitted); *see also* Tr. at 896:08–12 (Apr. 21, 2021) (Williams, Joint Creators).

**“dedicated network device” includes switches, hubs, bridges, gateways, modems, repeaters, and access points, and excludes devices that are not lawfully owned.**



*L. Proposed Class 12: Computer Programs—Repair*

**1. Background**

**a. Summary of Proposed Exemption**

Six organizations submitted five petitions for new or expanded exemptions relating to the diagnosis, maintenance, repair, and modification of software-enabled devices.<sup>1033</sup> Two petitions—one from EFF, the other from iFixit and Repair Association—seek to merge and expand the two existing exemptions to cover all types of devices and vehicles.<sup>1034</sup> These proponents also seek to permit “modification” of all devices. Three other petitions propose expanding the existing device exemption to cover other specific types of devices. Summit Imaging, Inc. (“Summit Imaging”) and Transtate Equipment Co., Inc. (“Transtate”) each petition to exempt circumvention of TPMs on software-enabled medical devices and systems for purposes of diagnosis, maintenance, and repair.<sup>1035</sup> Public Knowledge and iFixit jointly petition for “a new exemption to allow for circumvention of TPMs to repair video game consoles and replace damaged hardware.”<sup>1036</sup>

Comments in support of various proposals were submitted by the petitioners, as well as by ACA, FSF, and Kevin Kilkuskie.<sup>1037</sup> Opposition comments were submitted by ACT; the Advanced Medical Technology Association (“AdvaMed”); the Alliance for Automotive Innovation (“Auto Innovators”); DVD CCA and AACS LA; the Equipment Dealers Association, its regional affiliates (collectively, “EDA”), and Associated Equipment Distributors (“AED”); Joint Creators; the Medical Imaging & Technology Alliance (“MITA”); and Philips North America, LLC (“Philips”).<sup>1038</sup> Reply comments were submitted by the American Farm Bureau Federation (“AFBF”), ACA, Consumer Reports, MEMA, the Specialty Equipment Market Association (“SEMA”), and an

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<sup>1033</sup> See NPRM at 65,306–07.

<sup>1034</sup> EFF Class 12 Pet. at 2–3; iFixit & Repair Ass’n Class 12 Pet. at 2.

<sup>1035</sup> Summit Imaging Class 12 Pet. at 2; Transtate Class 12 Pet. at 2.

<sup>1036</sup> Public Knowledge & iFixit Class 12 Pet. at 2; Public Knowledge & iFixit Class 12 Reply at 4 (described as “a limited exemption to repair video game consoles with optical drives”).

<sup>1037</sup> ACA Class 12 Initial at 2; EFF Class 12 Initial; iFixit & Repair Ass’n Class 12 Initial; FSF Class 12 Initial at 2; Kevin Kilkuskie Class 12 Initial at 2; Public Knowledge & iFixit Class 12 Initial; Summit Imaging Class 12 Initial; Transtate Class 12 Initial & Exs. 1–29.

<sup>1038</sup> ACT Class 12 Opp’n; AdvaMed Class 12 Opp’n; Auto Innovators Class 12 Opp’n; DVD CCA & AACS LA Class 12 Opp’n; EDA & AED Class 12 Opp’n; Joint Creators Class 12 Opp’n; MITA Class 12 Opp’n; Philips Class 12 Opp’n. Auto Innovators is a combination of the Association of Global Automakers and the Alliance of Automobile Manufacturers. See Auto Innovators Class 12 Opp’n at 1.

anonymous participant.<sup>1039</sup> Finally, several individuals provided comments in support of the proposed exemption in an audience participation session during the public hearings.<sup>1040</sup>

### b. Overview of Issues

Although petitioners' various proposals overlap to some extent—for example, the proposed expansion to cover all software-enabled devices would also cover the more targeted expansions specific to video game consoles and medical devices and systems—the issues raised by participants can generally be organized into four categories: (1) all software-enabled devices; (2) vehicles and marine vessels; (3) video game consoles; and (4) medical devices and systems.

*All software-enabled devices.* Petitioners who seek an expansion to cover all software-enabled devices assert that such an expansion is warranted because the current device categories are “unnecessarily narrow and ambiguous in scope.”<sup>1041</sup> EFF states that a “scattershot approach” to defining a class limited to certain types of software-enabled devices “will fail to adequately alleviate the adverse effects on users” of the variety of devices that need repair.<sup>1042</sup> Both petitions propose that—in addition to diagnosis, maintenance, and repair—“modification” of devices should be permitted under the exemption.<sup>1043</sup> In response, opponents assert the proposed expansion to all devices is overbroad and that proponents have failed to develop a record that demonstrates sufficient commonalities among the various types of software-enabled devices.<sup>1044</sup> Opponents also object to the class including specific types of devices—namely, e-readers, video game consoles, disc players, and medical devices—asserting that the

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<sup>1039</sup> AFBF Class 12 Reply; Consumer Reports Class 12 Reply; MEMA Class 12 Reply; SEMA Class 12 Reply; Anonymous Class 12 Reply. Petitioners also submitted four reply comments. See EFF Class 12 Reply; iFixit & Repair Ass'n Class 12 Reply; Public Knowledge & iFixit Class 12 Reply; Transtate Class 12 Reply & Exs. 30–32.

<sup>1040</sup> See Tr. at 937:02–938:14 (Apr. 21, 2021) (Cade, Neb. Farm Bureau); Tr. at 946:24–948:21 (Apr. 21, 2021) (Reynolds, Colo. Ass'n of Biomed. Equip. Techs.); Tr. at 949:07–952:16 (Apr. 21, 2021) (O'Reilly, U.S. PIRG); Tr. at 953:04–955:03 (Apr. 21, 2021) (Gordon-Byrne, Repair Ass'n); Tr. at 955:17–960:09 (Apr. 21, 2021) (Roberts, SecuRepairs); Tr. at 960:18–962:15 (Apr. 21, 2021) (Schaffer); Tr. at 962:21–964:17 (Apr. 21, 2021) (Khanifar, Waveform).

<sup>1041</sup> iFixit & Repair Ass'n Class 12 Initial at 2.

<sup>1042</sup> EFF Class 12 Initial at 2.

<sup>1043</sup> EFF Class 12 Pet. at 2; iFixit & Repair Ass'n Class 12 Pet. at 2; see also FSF Class 12 Initial at 2 (noting that diagnosis and repairing hardware “increasingly requires modifying or replacing the software found on those devices”).

<sup>1044</sup> See DVD CCA & AACS LA Class 12 Opp'n at 4–8; Joint Creators Class 12 Opp'n at 2, 7–8; Philips Class 12 Opp'n at 2–4.

record is inadequate and that circumvention of TPMs on such devices carry unique risks for copyright owners.<sup>1045</sup> As for “modification,” opponents contend that this proposed use is so broad that it would encompass both noninfringing and infringing activities, in some cases implicating copyright owners’ exclusive right to prepare derivative works.<sup>1046</sup>

*Vehicles and marine vessels.* Although no petition specifically focuses on expanding the current vehicle repair exemption, two proposals suggest that the two existing repair exemptions be merged, which would effectively broaden the vehicle exemption by: (1) no longer limiting the class to “motorized land vehicles”; and (2) removing other limitations in the current vehicle exemption, including the requirement that users comply with other laws.<sup>1047</sup> In their initial comments, proponents elaborate that the current exemption for vehicles is too narrow because it only covers land vehicles and assert that operators of marine vessels face similar adverse effects.<sup>1048</sup> Opponents do not raise concerns specifically about marine vessels, but do object to removing language requiring compliance with other laws, also referred to as the “Illegality Limitation.”<sup>1049</sup> In addition, opponents propose circumscribing the existing vehicle exemption by redefining what constitutes “repair” as well as explicitly excluding third-party assistance and provision of tools.<sup>1050</sup> In reply, commenters supportive of the vehicle exemption stressed the importance of third-party assistance and access to tools.<sup>1051</sup>

*Video game consoles.* Video game consoles, like marine vessels, fall under the two umbrella proposals covering all software-enabled devices.<sup>1052</sup> In addition, Public Knowledge and iFixit submitted a standalone proposal to permit circumvention to repair video game consoles, specifically, console optical drives.<sup>1053</sup> Proponents contend that authorized repair services are inadequate, particularly for certain legacy consoles

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<sup>1045</sup> See Joint Creators Class 12 Opp’n at 2, 7–8; DVD CCA & AACS LA Class 12 Opp’n at 2–4; Philips Class 12 Opp’n at 3–4.

<sup>1046</sup> See ACT Class 12 Opp’n at 2, 5–6; DVD CCA & AACS LA Class 12 Opp’n at 1, 2–9; Joint Creators Class 12 Opp’n at 7–8.

<sup>1047</sup> See EFF Class 12 Pet. at 3; iFixit & Repair Ass’n Class 12 Pet. at 3; see also ACA Class 12 Initial at 1; ACA Class 12 Reply at 2–3.

<sup>1048</sup> See iFixit & Repair Ass’n Class 12 Initial at 8–10, 20; SEMA Class 12 Reply at 1.

<sup>1049</sup> Auto Innovators Class 12 Opp’n at 6–9; EDA & AED Class 12 Opp’n at 6–9.

<sup>1050</sup> See Auto Innovators Class 12 Opp’n at 2–6 (citing Auto Innovators Renewal Comment at 3–4); EDA & AED Class 12 Opp’n at 6–9, 12, Ex. B.

<sup>1051</sup> See AFBF Class 12 Reply at 4–6; ACA Class 12 Reply at 1–2; MEMA Class 12 Reply at 2–7.

<sup>1052</sup> See EFF Class 12 Pet. at 2; iFixit & Repair Ass’n Class 12 Pet. at 2.

<sup>1053</sup> Public Knowledge & iFixit Class 12 Pet. at 2; iFixit & Public Knowledge Class 12 Reply at 3.

that manufacturers no longer support.<sup>1054</sup> Opponents contend that circumvention of TPMs to repair consoles creates a risk of market harm for these devices that decisively tips the fair use and adverse effects analyses against granting an exemption.<sup>1055</sup> Further, they assert that adequate alternatives to circumvention exist such that an exemption is not warranted.<sup>1056</sup>

*Medical devices and systems.* The two proposals covering all software-enabled devices include some examples of medical devices.<sup>1057</sup> Separately, Summit Imaging and Transtate each submitted petitions to permit circumvention of TPMs on medical devices and systems for purposes of diagnosis, maintenance, and repair. Besides device software, these petitioners seek access to data files stored on medical devices and systems, including manuals and servicing materials.<sup>1058</sup> Although some manufacturers provide access to device software and servicing materials, proponents assert that the materials provided vary and in many cases are inadequate to execute repairs.<sup>1059</sup> Opponents object that the proposed uses, particularly when conducted by an unauthorized third-party servicer, are commercial in nature and would harm the market for medical devices and systems.<sup>1060</sup> Further, opponents argue that an exemption is unnecessary because adequate authorized repair services exist.<sup>1061</sup> Finally, they raise concerns that circumvention would undermine patient safety, create cybersecurity risks, and interfere with manufacturers' regulatory compliance obligations.<sup>1062</sup>

For the reasons discussed below, the Register recommends granting most of the proposed modifications, with certain limitations to address opponents' concerns.

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<sup>1054</sup> See Public Knowledge & iFixit Class 12 Initial at 2, 4–5; Public Knowledge & iFixit Class 12 Reply at 6.

<sup>1055</sup> See Joint Creators Class 12 Opp'n at 2–7; see also DVD CCA & AACCS LA Class 12 Opp'n at 11–20.

<sup>1056</sup> See Joint Creators Class 12 Opp'n at 3–5.

<sup>1057</sup> See, e.g., iFixit & Repair Ass'n Class 12 Initial at 18 (including examples of medical devices such as motorized wheelchairs, CPAP machines; hearing aids, and blood glucose monitors).

<sup>1058</sup> See Summit Imaging Class 12 Pet. at 2; Transtate Class 12 Pet. at 2–3.

<sup>1059</sup> See Transtate Class 12 Reply at 2–5.

<sup>1060</sup> See ACT Class 12 Opp'n at 4–5; AdvaMed Class 12 Opp'n at 2, 7–8; MITA Class 12 Opp'n at 3–4, 9, 17–18; Philips Class 12 Opp'n at 4, 7–10, 17.

<sup>1061</sup> See AdvaMed Class 12 Opp'n at 11; Philips Class 12 Opp'n at 2, 5–6, 14–15.

<sup>1062</sup> See ACT Class 12 Opp'n at 3–4; AdvaMed Class 12 Opp'n at 6, 9, 11–16; MITA Class 12 Opp'n at 5–7, 9–11, 17–18; Philips Class 12 Opp'n at 16–19.

## 2. Discussion

### a. Scope of the Proposed Class

The proposals to expand the repair exemption to cover all software-enabled devices, if adopted, would effectively subsume the device-specific proposals relating to video game consoles and medical devices and moot the need to separately evaluate these narrower proposals. Accordingly, as a threshold matter, the Register considers whether proponents have established a record that supports defining the class of works broadly by demonstrating that sufficient commonalities exist for the proposed uses across the full spectrum of software-enabled devices.

Petitioners argue that while there is a wide range of software-enabled devices, the proposed uses of these devices—diagnosis, maintenance, repair, and modification—are being adversely affected in the same way.<sup>1063</sup> They assert there are sufficient commonalities among the proposed uses and users of these devices that “no principled distinction” can be made to include some devices but not others. In support, proponents outline how the same types of TPMs restrict access to firmware and data in a variety of software-enabled consumer devices.<sup>1064</sup> In addition, they cite a few examples where TPMs inhibit repair of commercial and industrial systems, including facility management systems controlling commercial building access, supervisory control and data acquisition (SCADA) systems that facilitate operation of machinery, and PBX telephone systems.<sup>1065</sup>

Further, proponents point to drawbacks of the current exemption’s device-by-device approach. For one, they assert that limiting the exemption to devices that fall within particular categories neither adequately addresses the current variety of existing software-enabled devices nor keeps pace with the ever-expanding types of devices.<sup>1066</sup>

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<sup>1063</sup> See EFF Class 12 Initial at 13–14; iFixit & Repair Ass’n Class 12 Initial at 10; Tr. at 847:03–12 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1064</sup> See EFF Class 12 Initial at 13–14, 17–60; iFixit & Repair Ass’n Class 12 Initial at 17–18; *see also* iFixit & Repair Ass’n Class 12 Initial at 14–17 (cataloging software-enabled devices including various home appliances and home systems as well as power drills, battery gauges, and toolboxes); iFixit & Repair Ass’n Class 12 Reply at 6 (noting harm from inability to repair smart devices such as alarm clocks, lightbulbs, thermostats, washing machines, garage door openers, refrigerators, as well as vehicles and tractors); Tr. at 800:20–802:14 (Apr. 20, 2021) (Wiens, Repair Ass’n) (commenting on need to repair smart devices containing lithium batteries, computers, and computing peripherals).

<sup>1065</sup> See iFixit & Repair Ass’n Class 12 Initial at 19–20.

<sup>1066</sup> See iFixit & Repair Ass’n Class 12 Pet. at 2 (“Over the next three years, there will no doubt be new devices that don’t also fit cleanly into existing categories and wouldn’t fall neatly into new

As a result, proponents say that exemption advocates and the Copyright Office are triennially burdened with considering whether the repair exemption should be expanded to include a new or different type of *device* even where the *uses* remain the same.<sup>1067</sup> To illustrate, proponents observe that the current exemption covers smartphones, but not tablets, despite the fact that the firmware for both devices is “nearly identical” and the adverse effects on repair are the same.<sup>1068</sup>

A second drawback proponents suggest is that limiting the exemption to particular categories of devices can introduce ambiguity.<sup>1069</sup> For example, under the current exemption, proponents query whether a CPAP machine qualifies as a “home appliance” and whether eligibility to circumvent TPMs to repair an appliance hinges merely on whether it resides in a home kitchen or an office pantry.<sup>1070</sup>

Opponents object that a class covering all software-enabled devices is overbroad and that the record does not demonstrate that sufficient commonalities exist among the uses and users of various devices. DVD CCA and AACS LA comment that the legislative history’s requirement that “the rulemaking proceeding should focus on distinct, verifiable, and measurable impacts . . . render[s] proponents’ current request impossible, as this rulemaking could never handle the quantum of evidence that would be necessary to support an unbound exemption for all software-enabled devices.”<sup>1071</sup> Opponents note that, in 2018, the Acting Register declined to recommend a class covering “devices, generally” based on a “sparse” record; and they observe similar deficiencies in proponents’ current petitions.<sup>1072</sup> Joint Creators warn that “[d]ivorcing an exemption from the actual devices at issue would invite unforeseen harm,” noting that permitting

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categories that might be invented during this proceeding.”); *see also* EFF Class 12 Pet. at 2 (“Software-enabled devices are ubiquitous in modern life.”); FSF Class 12 Initial at 2 (noting “there are very few items on the market these days that do not come with some sort of software included”); iFixit & Repair Ass’n Class 12 Initial at 3–4; Tr. at 737:06–12, 737:25–738:06 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1067</sup> ACA Class 12 Initial at 2 (“Users should not have to apply for repair exemptions on a product-by-product basis where the principle of lawful repair is the same.”); iFixit & Repair Ass’n Class 12 Initial at 3–4; Tr. at 737:13–19 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1068</sup> iFixit & Repair Ass’n Class 12 Initial at 3.

<sup>1069</sup> *Id.* at 2–4; Tr. at 737:20–24 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1070</sup> iFixit & Repair Ass’n Class 12 Initial at 3–4; *see also* iFixit & Repair Ass’n Class 12 Pet. at 2.

<sup>1071</sup> DVD CCA & AACS LA Class 12 Opp’n at 5–6 (citing Commerce Comm. Report at 37); *see also* Philips Class 12 Opp’n at 3–4 (asserting the proposed class is “facially impermissible, as it is overly broad and fails to account for any of the unique characteristics of medical devices”).

<sup>1072</sup> DVD CCA & AACS LA Class 12 Opp’n at 6–7 (citing 2018 Recommendation at 191–92); Joint Creators Class 12 Opp’n at 7 (commenting that EFF provides the same examples as in 2018 and iFixit & Repair Ass’n do not discuss individual examples).

modification of all devices could be stretched to allow circumvention to engage in activities for which that the Library has denied exemptions, such as jailbreaking video game consoles.<sup>1073</sup> In the event that the Office recommends a broad class, opponents assert that certain devices—specifically, disc players and video game consoles—should be carved out.<sup>1074</sup>

In the 2018 rulemaking, the Acting Register noted that a class of works may be appropriate in scope “where the record establishes that users of such works are similarly affected by the prohibition on circumvention, and where . . . the class is further narrowed by reference to particular types of uses.”<sup>1075</sup> When the Office first considered a repair exemption for a broad class of software-enabled devices in 2018, the limited record during that proceeding could only support evaluation of a few device categories.<sup>1076</sup> As some devices were not discussed until the post-hearing stage of the proceeding, there was insufficient information to properly evaluate whether sufficient commonalities existed among different device types.<sup>1077</sup> In comparison, here, proponents have established a record of illustrative examples and analysis showing users being hindered by similar TPMs across a variety of consumer devices.<sup>1078</sup> Moreover, the type of copyrighted work, *i.e.*, the computer program to which proponents are seeking access, is generally similar across different devices—the Linux operating system.<sup>1079</sup>

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<sup>1073</sup> Joint Creators Class 12 Opp’n at 8; *see* Tr. at 747:15–750:05 (Apr. 20, 2021) (Williams, Joint Creators; Smith, U.S. Copyright Office) (discussing distinctions between categories of devices, in particular, video game consoles); Tr. at 759:06–760:06 (Apr. 20, 2021) (Reed, ACT) (noting that expanding the exemption could exacerbate an existing problem where even free software “is being pirated and an additional ad network is being installed underneath it”).

<sup>1074</sup> DVD CCA & AACCS LA Class 12 Opp’n at 7–8 (noting that proponents’ examples of e-readers and Wi-Fi-connected speakers do not provide the evidentiary basis to cover players that enable motion picture playback); Joint Creators Class 12 Opp’n at 9; Tr. at 752:12–24 (Apr. 20, 2021) (Ayers, DVD CCA & AACCS LA).

<sup>1075</sup> 2018 Recommendation at 289 (citing House Manager’s Report at 7 (suggesting that Register should look to whether the prohibition on circumvention affects the availability of works in different categories in the same way)).

<sup>1076</sup> *See* 2018 Recommendation at 189–94.

<sup>1077</sup> *See id.* at 194 n.1199.

<sup>1078</sup> *See* EFF Class 12 Initial at 3–60; iFixit & Repair Ass’n Class 12 Initial at 2–23; EFF Class 12 Reply at 2–3, 8–9; iFixit & Repair Ass’n Class 12 Reply at 3–8, 10–12.

<sup>1079</sup> *See* Tr. at 742:11–744:08 (Apr. 20, 2021) (Wiens, Repair Ass’n) (noting that TPMs on software-enabled devices are largely enabled not to protect the firmware, but the device itself from security vulnerabilities); *see also* Tr. at 739:05–741:07 (Apr. 20, 2021) (Gagliano, EFF; Smith, U.S. Copyright

Software-enabled consumer devices, besides predominating the rulemaking record, also share some common characteristics such that users of the proposed exemption are likely to be similarly situated. In the 2016 Software Study, the Office observed that “everyday products” containing embedded software share several traits including that (1) “they are consumer-grade”; (2) the “software within the product is often specifically created for a particular product to control that product’s basic operations”; (3) the software may be “ancillary to the non-software (*e.g.*, mechanical or electrical) components of the product”; (4) the software “may be distributed along with the product itself without payment of a separate charge or fee”; and (5) the software may not be “readily copied, thus presenting somewhat diminished concerns about widespread infringement.”<sup>1080</sup> Further, the Office observed the “ubiquity of copyrighted software in everyday products” and “evolving nature of the universe of these items.”<sup>1081</sup> This evolution has continued over the past five years, during which time the “use of embedded software in consumer products has grown rapidly, and with it the deployment of TPMs.”<sup>1082</sup> Given these commonalities, it seems likely that users of software-enabled consumer devices will be similarly affected by TPMs, so that it is appropriate to define the proposed class to encompass that category of products.

It is unclear, however, that commercial and industrial devices and systems share these commonalities. Proponents offer a few examples of TPMs preventing access to SCADA and commercial building systems, but it is not apparent from the record that users of commercial and industrial systems are similarly situated to users of consumer products. From the examples provided, it appears that some of these users had adequate alternatives to circumvention.<sup>1083</sup> It was also unclear whether the proposed uses would

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Office) (discussing the scope of the exemption being limited to “firmware or embedded software,” not other applications that may control the operation of a product); *see generally* Class 10 Computer Programs — Unlocking (finding that wireless devices integrate a limited number of modems that mostly employ chipsets from a single vendor).

<sup>1080</sup> U.S. COPYRIGHT OFFICE, SOFTWARE-ENABLED CONSUMER PRODUCTS 9 (2016), <https://www.copyright.gov/policy/software/software-full-report.pdf> (“Software Study”).

<sup>1081</sup> *Id.* at 5, 10, 12.

<sup>1082</sup> ACA Class 12 Initial at 2; *see also* iFixit & Repair Ass’n Class 12 Initial at 14–16 (noting that “shipments of smart home devices are increasing annually at a rate of up to 31%”).

<sup>1083</sup> For example, iFixit and the Repair Association cite a building owner being locked out of its facility management system after the only employee who had a password died; yet, the owner could still gain access albeit after resetting and reconfiguring the system instead of bypassing the TPM. *See* iFixit & Repair Ass’n Class 12 Initial at 19; Tr. at 744:15–747:04 (Apr. 20, 2021) (Wiens, Repair Ass’n; Smith, U.S. Copyright Office) (also discussing building automation system that caps the maximum number of key cards). The other example, involving Siemens’s practice of hard-coding passwords into their SCADA systems, proposes a workaround where users could



contravene negotiated licensing terms between commercial actors, which might affect the analysis of potential market harm.<sup>1084</sup> Indeed, the Software Study identified a distinction between “consumer-grade” and “industrial devices, the latter of which may be subject to contractual and licensing agreements between parties with similar bargaining power.”<sup>1085</sup> Without a more developed record concerning devices designed primarily for commercial and industrial use, the Register cannot properly evaluate the purported similarities to consumer devices or analyze the claimed adverse effects.<sup>1086</sup>

Opponents also object to including certain consumer devices that provide access to other expressive works, namely, disc players and video game consoles. Neither petition covering all software-enabled devices nor the comments submitted in support of those petitions address video game consoles in any detail. Public Knowledge and iFixit’s joint submissions, however, focus exclusively on repair of video game console optical drives.<sup>1087</sup> Because of the distinct record and unique issues pertaining to gaming consoles, the Register concludes that the proposal to repair console optical drives should be considered separately, as a subset of consumer devices.

In addition, the Register declines to collapse the separate exemptions for vehicles and other devices into a single exemption. The two existing exemptions each contain their own unique language and limitations, which commenters have separately petitioned to renew on the basis that there has been no material change in the facts, law, or other

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develop their own “patch” rather than wait for Siemens to address the hacking vulnerability. *See* iFixit & Repair Ass’n Class 12 Initial at 19.

<sup>1084</sup> *See* Tr. at 756:13–757:15 (Apr. 20, 2021) (Reed, ACT) (commenting that circumvention of TPMs could be disruptive to “licensing and right-sizing of the products” because users could avoid paying for additional licenses); *see also* Andy Greenberg, *The Hacked McDonald’s Ice Cream Machines — and Started a Cold War*, WIRED (Apr. 20, 2021), <https://www.wired.com/story/they-hacked-mcdonalds-ice-cream-makers-started-cold-war/> (describing a dispute involving developers of a device designed to facilitate maintenance and repair of commercial ice cream machines, the manufacturer, authorized distributors, and McDonald’s that implicates licensing and franchise agreements).

<sup>1085</sup> Software Study at 9.

<sup>1086</sup> *See* FTC, NIXING THE FIX: AN FTC REPORT TO CONGRESS ON REPAIR RESTRICTIONS 51 (May 2021), [https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing\\_the\\_fix\\_report\\_final\\_5521\\_630pm-508\\_002.pdf](https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf) (“FTC Report”) (“When deciding the scope of expanded repair rights, policymakers should think about whether the rights should be limited to consumer goods or include capital items. Given the complexity and variation among products, it seems unlikely that there is a one-size fits all approach that will adequately address this issue.”).

<sup>1087</sup> *See* Public Knowledge & iFixit Class 12 Pet. at 2; Public Knowledge & iFixit Class 12 Reply at 4.

circumstances.<sup>1088</sup> The Register will, however, consider whether the existing exemption for motorized land vehicles should be expanded to include marine vessels, for which proponents provide some support.<sup>1089</sup> The Register will also consider the proposal to remove the Illegality Limitation for vehicles, specifically whether this limitation is adversely affecting users' ability to make use of the current exemption.<sup>1090</sup>

For medical devices and systems, the Register concludes that the specific proposals for diagnosis, maintenance, and repair of these devices and systems should be evaluated separately for several reasons. First, most medical devices cited in the record are not "consumer devices" and vary in terms of their function, TPMs, and software licenses.<sup>1091</sup> Second, beyond firmware access, petitioners seek access to data files and servicing materials associated with medical devices and systems. Finally, participants have raised issues and submitted record materials, such as FDA reports and studies, that bear on whether medical equipment repair is being adversely affected by the prohibition against circumvention.

In sum, the Register will evaluate the following proposed classes for which sufficient commonalities exist: (1) computer programs in devices designed primarily for use by consumers, including video game consoles for the sole purpose of repairing optical drives; (2) computer programs in marine vessels; and (3) computer programs and data files in medical devices and systems.

### **b. Works Protected by Copyright**

Computer programs, including those contained in consumer devices, marine vessels, and medical devices and systems, are protected under the Copyright Act.<sup>1092</sup> In addition, some related data files stored on medical devices and systems, such as

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<sup>1088</sup> See ACA Vehicle Repair Renewal Pet.; AFBF Vehicle Repair Renewal Pet.; CTA Vehicle Repair Renewal Pet.; MEMA Vehicle Repair Renewal Pet.; SEMA Vehicle Repair Renewal Pet.

<sup>1089</sup> See iFixit & Repair Ass'n Class 12 Initial at 8–10; SEMA Class 12 Reply at 1; AFBF Class 12 *Ex Parte* Letter at 2 (Aug. 3, 2021).

<sup>1090</sup> See ACA Class 12 Initial at 1; iFixit & Repair Ass'n Class 12 Initial at 20–21; ACA Class 12 Reply at 2–3; iFixit & Repair Ass'n Class 12 Reply at 11–12.

<sup>1091</sup> See Summit Imaging Class 12 Pet. at 3 (imaging equipment and ventilators with TPMs including "user-specific login credentials or security keys, among other measures"); Transtate Class 12 Pet. at 3 (imaging, endoscopy, and life-support devices with TPMs including "encryption, embedded software, and challenge-response mechanisms, access codes, passwords, keys, or digital signatures").

<sup>1092</sup> 17 U.S.C. § 101 (definitions of "computer program" and "literary works"); see also 2018 Recommendation at 194; 2015 Recommendation at 218; Software Study at 2–3.

manuals and documentation, are copyrightable as literary works.<sup>1093</sup> The Register therefore finds that at least some works included in the proposed class are protected by copyright.

### c. Asserted Noninfringing Uses

Proponents' asserted noninfringing uses—diagnosis, maintenance, repair, and modification—overlap somewhat among the three refined classes. The terms “maintenance” and “repair” are defined in the current exemption for devices.<sup>1094</sup> In its comments, EFF defines “modification” as “to add new features, load the software of one’s choice, disable undesired functionality, or customize the operation of the device to one’s preferences.”<sup>1095</sup> Based on these definitions, the Register evaluates whether the proposed uses are likely noninfringing as to each class.

#### i. Consumer Devices

Proponents suggest that diagnosis, maintenance, repair, and modification of software-enabled devices are noninfringing activities permitted under the fair use doctrine and section 117.

##### 1) Fair Use

The Register first considers whether diagnosis, maintenance, and repair of software-enabled consumer devices is likely to be fair use, and separately whether modification of

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<sup>1093</sup> See U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 721.11 (3d ed. 2021) (“COMPENDIUM (THIRD)”); see also iFixit, *Medical Device Repair*, [https://www.ifixit.com/Device/Medical\\_Device](https://www.ifixit.com/Device/Medical_Device) (last visited Oct. 15, 2021) (database of repair manuals and support documentation for medical devices). Proponents assert that some data files, including error logs, and configuration files stored behind TPMs on medical devices may not be protected by copyright. See Summit Imaging Class 12 Initial at 2; Transtate Class 12 Initial at 5. Nonetheless, because some medical device and system data files may be protectable compilations provided they “feature[] an original selection and arrangement,” the Register will consider whether accessing these files is necessary to engage in the proposed noninfringing uses. *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 348 (1991); see 2015 Recommendation at 393–94 (concluding that some medical device data outputs, such as batch reports, might be copyrightable compilations); cf. 2018 Recommendation at 316–17 (concluding that aircraft data collected and organized as required by industry standards did not qualify as a copyrightable compilation).

<sup>1094</sup> See 37 C.F.R. § 201.40(b)(10); see also 17 U.S.C. § 117(d). These definitions are not part of the current exemption for vehicle repair.

<sup>1095</sup> EFF Class 12 Pet. at 3; EFF Class 12 Initial at 1.

those devices is likely to be fair use. Whether repair of video game consoles is likely to be fair use is also analyzed separately.

*Diagnosis, maintenance, and repair—consumer devices.* Citing the Office’s previous conclusions, proponents assert that the same fair use analysis applies consistently across a broader class of software-enabled devices.<sup>1096</sup> Under the first fair use factor, proponents assert that, irrespective of the type of device, “the purpose of repair is to restore a device’s functionality to its previous working state.”<sup>1097</sup> On the second factor, they observe that the “underlying copyrighted software is essentially functional rather than expressive where the software is not meant to be consumed as a creative work.”<sup>1098</sup> For the third factor, proponents argue that “use of the entire software work is reasonable when the purpose is repair” because it “often require[s] analysis of the full software program,” and “the ultimate product does not contain infringing copies.”<sup>1099</sup> Finally, proponents argue the fourth factor favors fair use because “there is no separable market for embedded software.”<sup>1100</sup> Rather, “[p]recluding consumers, and their repairpersons of choice, from fixing an ever-expanding category of smart devices in fact may negatively impact the value of these works when, as this Copyright Office noted, ‘repair supports—rather than displaces—the purpose of the embedded programs that control the device.’”<sup>1101</sup>

ACT objects that, given the scope of the proposed class, the uses do not permit a “blanket determination” on fair use.<sup>1102</sup> DVD CCA and AACS LA comment that “the ‘repair’ exemption does not extend to devices that provide access to other, expressive copyrighted works.”<sup>1103</sup> They assert that the Office’s previous decision to exclude video game consoles should apply equally to DVD and Blu-ray players because permitting

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<sup>1096</sup> See iFixit & Repair Ass’n Class 12 Initial at 12 (“The key point is that, from a noninfringement perspective, *newly presented devices are no different than those covered by existing exemptions*; the only change is the increasing prevalence of TPM-encumbered devices.”); iFixit & Repair Ass’n Class 12 Reply at 3–5 (citing Software Study at 33; 2018 Recommendation at 203–05); see also EFF Class 12 Initial at 14; Tr. at 736:25–737:05, 738:07–15 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1097</sup> iFixit & Repair Ass’n Class 12 Reply at 4 (citing *Storage Tech. Corp. v. Custom Hardware Eng’g & Consulting, Inc.*, 421 F.3d 1307 (Fed. Cir. 2005); *Sony Computer Entm’t v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000); *Sega Enters. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992)).

<sup>1098</sup> iFixit & Repair Ass’n Class 12 Reply at 5 (citing 2015 Recommendation at 234–35).

<sup>1099</sup> *Id.* at 5.

<sup>1100</sup> *Id.* (citing 2018 Recommendation at 204–05).

<sup>1101</sup> iFixit & Repair Ass’n Class 12 Initial at 12 (quoting Software Study at 40); see also iFixit & Repair Ass’n Class 12 Reply at 5 (suggesting that where a use is transformative, “copyright owners cannot claim market harm”).

<sup>1102</sup> ACT Class 12 Opp’n at 2.

<sup>1103</sup> DVD CCA & AACS LA Class 12 Opp’n at 1.

circumvention for any purpose will compromise the digital ecosystem and lead to piracy of expressive content, which will consequently harm the market for these players.<sup>1104</sup> Responding to these concerns, iFixit and the Repair Association argue that “even for software-enabled devices that contain, display, or perform expressive content,” the proposed uses do not harm the market for expressive works because the subject of the exemption is the firmware, and “in ensuring that devices remain operational, repair supports the market for [expressive] works.”<sup>1105</sup>

The Register agrees with proponents that diagnosis, maintenance, and repair of software-enabled consumer devices are likely to be fair uses where the purpose is to restore device functionality. Indeed, the Office previously recognized this in its Software Study, observing that device repair is generally noninfringing. While cautioning that “fair use analysis is ultimately a fact-specific inquiry” that can vary based on the type of device, the Office concluded that “properly applied, the fair use factors—together with the existing case law—should ensure that consumers, repair technicians, and other interested parties will be able to engage in most traditional repair . . . activities without fear of copyright infringement liability.”<sup>1106</sup> In 2018, the Acting Register found diagnosis, maintenance, and repair likely to be fair use for particular categories of devices, but declined to consider an exemption covering all software-enabled devices due, in part, to a sparse record and limited analysis of these devices.<sup>1107</sup> Here, proponents offer illustrative examples of a wide variety of devices.<sup>1108</sup> For the most part, opponents do not challenge this conclusion except to comment that circumvention of TPMs on devices that provide access to other expressive works may lead to piracy.<sup>1109</sup> The Register will consider that concern, and whether additional limitations on the proposed exemptions are appropriate, in the adverse effects analysis below.

*Repair of video game console optical drives.* Public Knowledge and iFixit assert that repairing video game consoles—specifically, accessing console software that controls device hardware to remove and replace an optical drive—is a fair use. Petitioners argue the first factor favors fair use because “[r]epair of a software-enabled good ‘may be a

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<sup>1104</sup> See *id.* at 11–16; Tr. at 753:23–754:10 (Apr. 20, 2021) (Ayers, DVD CCA & AACS LA).

<sup>1105</sup> iFixit & Repair Ass’n Class 12 Reply at 5.

<sup>1106</sup> Software Study at 39–41.

<sup>1107</sup> 2018 Recommendation at 191–94, 202–05.

<sup>1108</sup> See, e.g., iFixit & Repair Ass’n Class 12 Initial at 12, 17–18; Tr. at 800:20–802:14 (Apr. 20, 2021) (Wiens, Repair Ass’n).

<sup>1109</sup> See DVD CCA & AACS LA Class 12 Opp’n at 11–16.

avored purpose when directed at preserving the functionality of a device.”<sup>1110</sup> In addition, they note that the use is noncommercial because it is intended “to allow for continued personal use of a device.”<sup>1111</sup> On the second fair use factor, proponents stress that the “software controlling access between a motherboard and optical drive is functional, rather than creative.”<sup>1112</sup> Proponents assert the third factor likewise favors fair use because “[t]he amount of code accessed in the course of repairs is proportionally small,” and that, in any event, copying the entire program may be permitted “when used to facilitate repair.”<sup>1113</sup> Finally, proponents contend that there is “no known market” for the software that pairs console motherboards with optical drives, which has “no independent value.”<sup>1114</sup>

In opposition, Joint Creators contend that the analysis for video game consoles in previous rulemaking cycles should continue to apply—that is, console repair is not a fair use because it would “enable[] unauthorized access to and use of works distributed through consoles, including television programs, movies, and sound recordings,” and “the market for the firmware would deteriorate if it was compromised.”<sup>1115</sup> Although opponents concede that “hardware repair . . . might be non-infringing in some circumstances,” they express concern that “circumventing access controls on console firmware enables consoles to load and run infringing games and other content, regardless of the circumventor’s stated purpose.”<sup>1116</sup> Petitioners respond that opponents’ reliance on previous rulemakings is misplaced because the proposed use here is narrower than that addressed in past proposals and must be considered “on its own merits.”<sup>1117</sup>

For essentially the same reasons that the Register concludes that repair of software-enabled consumer devices is likely to be fair use, the Register finds that certain video game console repair is also likely fair use. Accessing console firmware for the limited purpose of repairing an optical drive to restore the console’s functionality is unlikely to affect the value of such software, for which there appears to be no independent market

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<sup>1110</sup> Public Knowledge & iFixit Class 12 Initial at 3 (quoting 2018 Recommendation at 196); Public Knowledge & iFixit Class 12 Reply at 6–7.

<sup>1111</sup> Public Knowledge & iFixit Class 12 Initial at 3.

<sup>1112</sup> *Id.* at 3.

<sup>1113</sup> *Id.* at 4 (citing 2015 Recommendation at 214); *see also* 2018 Recommendation at 198.

<sup>1114</sup> Public Knowledge & iFixit Class 12 Initial at 4.

<sup>1115</sup> Joint Creators Class 12 Opp’n at 5–6 (citing 2018 Recommendation at 205–06; 2012 Recommendation at 48).

<sup>1116</sup> *Id.* at 6.

<sup>1117</sup> Public Knowledge & iFixit Class 12 Reply at 6–7.

separate from the console itself.<sup>1118</sup> Opponents acknowledge that repair activity is in some cases noninfringing;<sup>1119</sup> and to the extent that users go beyond the “stated purpose” of repairing the optical drive, that activity is outside the scope of the proposed exemption.<sup>1120</sup> Because the record is devoid of evidence involving other types of console repair, the Register declines to consider whether repair of any other element of the console firmware or hardware is noninfringing. The Register will also consider, in addressing adverse effects below, whether imposing additional limitations on the proposed exemption to safeguard expressive works is appropriate.

*Modification, generally.* Proponents assert that “modification” of software-enabled devices is also fair use. In support, EFF conducts an individualized fair use analysis of modifications for eight separate devices, concluding that “the analysis for each example is identical in all key respects, demonstrating the uniformity of the issues across modifications and device types.”<sup>1121</sup> EFF argues the first factor favors fair use because the modifications are for personal, noncommercial uses that are transformative in nature, such as installing new features and increasing the utility of the device.<sup>1122</sup> On the second fair use factor, EFF observes that functional software is primarily factual, not expressive; and code that controls device functionality is minimally creative.<sup>1123</sup> For the third factor, EFF notes that the entirety of the work generally must be copied to allow for modifications because the firmware needs to be decrypted and analyzed to understand it and to identify the portions of the code to modify.<sup>1124</sup> Finally, addressing the fourth

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<sup>1118</sup> See *Sony Comput. Entm’t v. Connectix Corp.*, 203 F.3d 596, 603–08 (9th Cir. 2000); *Sega Enters. v. Accolade, Inc.*, 977 F.2d 1510, 1522–28 (9th Cir. 1992); Software Study at 41.

<sup>1119</sup> See Joint Creators Class 12 Opp’n at 6.

<sup>1120</sup> See Tr. at 788:22–795:07 (Apr. 20, 2021) (Sheehan, iFixit; Amer, U.S. Copyright Office; Burke, Public Knowledge; Williams, Joint Creators; Ayers, DVD CCA & AACCS LA) (discussing whether limitations on the scope of the proposal are sufficient to prevent piracy).

<sup>1121</sup> EFF Class 12 Initial at 15.

<sup>1122</sup> See *id.* at 14; *id.* at 17–19 (citing *Connectix*, 203 F.3d at 599, 609; *Sega*, 977 F.2d at 1522–23) (customizing digital camera functionality); *id.* at 22–24 (customizing cat litter box cleaning cycles); EFF Class 12 Initial at 27–29 (customizing printer firmware); *id.* at 32–34 (customizing programmer/debugger, including to install new features); *id.* at 38–39 (modifying camera gimbal and creating related educational materials); *id.* at 43–45 (customizing e-reader to enable use of additional screensavers, fonts, apps, and file types); *id.* at 49–50 (customizing robotic companion firmware to install new features); *id.* at 54–56 (modifying digital mobile radio to allow multichannel monitoring); see also Tr. at 760:16–762:21 (Apr. 20, 2021) (Gagliano, EFF).

<sup>1123</sup> See EFF Class 12 Initial at 14, 19 (citing *Connectix*, 203 F.3d at 603–05; *Sega*, 977 F.2d at 1524), 24, 29–30, 34–35, 40, 45–46, 51, 56–57.

<sup>1124</sup> See EFF Class 12 Initial at 14, 19–20 (citing *Authors Guild v. Google, Inc.*, 804 F.3d 202, 221–22 (2d Cir. 2015); *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1167–68 (9th Cir. 2007); *Kelly v. Arriba*

fair use factor, EFF asserts there is no market harm because there is no market for the firmware separate from the device, and modification may actually result in increased sales of a device because of the availability of alternative firmware options.<sup>1125</sup> Separately, iFixit and the Repair Association also assert that device modification is noninfringing fair use, relying on their analysis for repair as applicable to modification.<sup>1126</sup>

Opponents object that “unqualified modification” as applied to a broad class of devices is so expansive that it defies a singular fair use determination.<sup>1127</sup> Because “modification” can have a different meaning depending on the device, opponents caution that some modifications could implicate a software owner’s derivative work right.<sup>1128</sup> And as with device repair, opponents argue that modification of software on devices that provide access to expressive content, even for facially benign reasons, could compromise digital ecosystem protections, leading to unauthorized access to and piracy of expressive works.<sup>1129</sup> Opponents also warn that “modification” could be interpreted to include jailbreaking video game consoles, a use that the Register has “repeatedly denied.”<sup>1130</sup>

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*Soft Corp.*, 336 F.3d 811, 820–21 (9th Cir. 2003); *Connectix*, 203 F.3d at 605–06; *Sega*, 977 F.2d at 1526; *Field v. Google*, 412 F. Supp. 2d 1106, 1120–21 (D. Nev. 2006)); *id.* at 25, 30–31, 35–36, 41–42, 46–47, 51–52, 57–58. For example, to modify some device firmware, a user must “view the original code in its entirety to identify the checksum value in the code so they can match it when installing the modified firmware.” *Id.* at 25.

<sup>1125</sup> *Id.* at 14–15, 20, 25–26, 31, 36, 41, 47, 52–53, 58; EFF Class 12 Reply at 5 (“Software-enabled devices are not sold as bare metal waiting for a separate purchase of operating firmware; they are sold with a copy of the firmware, and the copyright owner receives their compensation.”).

<sup>1126</sup> See iFixit & Repair Ass’n Class 12 Reply at 4–5 (citing *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 450 (1984); *Connectix*, 203 F.3d at 602, 603; *Sega*, 977 F.2d at 1527); Tr. at 767:25–768:08 (Apr. 20, 2021) (Sheehan, iFixit); see also Tr. at 754:24–756:03 (Apr. 20, 2021) (Burke, Public Knowledge) (noting that limited “modification for a functional purpose” may be necessary to perform a video game console repair); EFF Class 12 *Ex Parte* Letter at 1 (July 28, 2021) (noting its proposal “includes . . . modification in furtherance of repair”).

<sup>1127</sup> DVD CCA & AACS LA Class 12 Opp’n at 8–9 (faulting the “dearth of information” provided about modification as fatal to evaluating whether the proposed use is noninfringing); see also ACT Class 12 Opp’n at 2.

<sup>1128</sup> See DVD CCA & AACS LA Class 12 Opp’n at 8 (citing 2018 Recommendation at 210); Joint Creators Class 12 Opp’n at 8 (“[T]he modification language proposed allows for the creation of derivative works of software/firmware resident in every device or machine.”).

<sup>1129</sup> DVD CCA & AACS LA Class 12 Opp’n at 4, 9–11; Joint Creators Class 12 Opp’n at 8–9; Tr. at 753:03–13 (Apr. 20, 2021) (Ayers, DVD CCA & AACS LA) (noting that modification that “chang[es] the functionality of a device” could allow playback of pirated content).

<sup>1130</sup> Joint Creators Class 12 Opp’n at 8.



As in 2018, the Register cannot conclude that modification of software-enabled devices generally is likely to be fair use. Although she credits EFF for providing several examples of device modification and analyzing the fair use factors as applied to those proposed modifications, the term “modification” is insufficiently precise and encompasses activities so broad that the proposal resists a unified analysis across all devices. Unlike diagnosis, maintenance, and repair, which have been defined for software-enabled devices in this rulemaking partly by drawing on definitions in section 117,<sup>1131</sup> “modification” is undefined by statute.<sup>1132</sup> As opponents observe, it is not difficult to imagine modifications that would arguably infringe the derivative work right.<sup>1133</sup> And while it is true that the current exemption for repair of motor vehicles encompasses certain modifications, that language is expressly limited to “lawful modification of a vehicle function.”<sup>1134</sup> Proponents have offered no analogous language to cabin the scope of the modifications contemplated here.<sup>1135</sup> Accordingly, on the present record, the Register cannot conclude that modification generally constitutes a noninfringing use.

## 2) Section 117

Proponents offer section 117 as an alternative basis to conclude that diagnosis, maintenance, repair, and modification are noninfringing uses of software-enabled devices.<sup>1136</sup> EFF asserts that section 117(a)(1) “specifically protects adaptation when the ‘adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner.’”<sup>1137</sup> Proponents also rely on section 117(c), arguing that many repair-related activities—for example, entering a password, reading device values, or changing software settings—do not require

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<sup>1131</sup> See 37 C.F.R. § 201.40(b)(10); see also 17 U.S.C. § 117(d).

<sup>1132</sup> The term “modification” does, however, appear in the definition for “derivative work” as the type of change that, if original, constitutes a “derivative work.” See 17 U.S.C. § 101.

<sup>1133</sup> See 2015 Recommendation at 193–94 (denying jailbreaking proposal for e-readers); *id.* at 199–201 (denying jailbreaking proposal for video game consoles); 2012 Recommendation at 42–44, 47–50 (same).

<sup>1134</sup> See 2018 Recommendation at 197, 199 (emphasis added) (lawful modification of a vehicle function “does not extend to gaining unauthorized access to entertainment content”).

<sup>1135</sup> See 2015 Recommendation at 220–21, 224, 234–37, 239–44.

<sup>1136</sup> See EFF Class 12 Initial at 15 (citing Software Study at 35–38); iFixit & Repair Ass’n Class 12 Initial at 12–13. As noted above, Public Knowledge and iFixit make no argument that repair of optical drives in video game consoles is noninfringing under section 117.

<sup>1137</sup> EFF Class 12 Reply at 4 (quoting 17 U.S.C. § 117(a)(1)); see also iFixit & Repair Ass’n Class 12 Initial at 12–13.

making software copies “other than those that normally occur when turning on the device.”<sup>1138</sup>

In response, Joint Creators comment that “[t]o the extent firmware must be reproduced or modified for repair, Section 117 of the Copyright Act does not make the use at issue lawful.”<sup>1139</sup> They note that only the owner of a copy of a program is eligible for the section 117(a) exemption, and observe that software in devices such as video game consoles is licensed.<sup>1140</sup> As to section 117(c), opponents argue that there is insufficient evidence that devices can be restored to “normal functionality” after TPMs have been circumvented.<sup>1141</sup>

The Register affirms that, “[p]roperly construed, section 117 should adequately protect most repair and maintenance activities” for software-enabled devices.<sup>1142</sup> The rulemaking record, however, is insufficient to conclude that repair or modification of software-enabled consumer devices is likely covered under this section. With respect to section 117(a), “the inquiry into whether an individual qualifies as an ‘owner’ is fact-intensive.”<sup>1143</sup> Proponents focus on ownership of a *device*, but do not establish that the embedded *copy* of the copyrighted software is also owned. With respect to section 117(c), the Register observes that some “maintenance” and “repair” activities anticipated by the proposal likely fall under this statutory exemption. At the same time, section 117(c) covers a narrower range of activities than those proposed here; any uses that involve loading or accessing software that are not necessary to activate the machine likely would not be protected under the statute.<sup>1144</sup> Accordingly, the Register concludes that although some of the proposed uses may be noninfringing under section 117, the record lacks sufficient evidence to assess whether that section might serve as an alternative basis to conclude that diagnosis, maintenance, repair, and modification of software-enabled consumer devices, in general, is noninfringing.

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<sup>1138</sup> iFixit & Repair Ass’n Class 12 Initial at 13.

<sup>1139</sup> Joint Creators Class 12 Opp’n at 5.

<sup>1140</sup> See *id.* at 5–6 (citing license agreements for Nintendo Switch, Sony PlayStation, and Microsoft Xbox console firmware).

<sup>1141</sup> *Id.* at 6.

<sup>1142</sup> Software Study at 35–38 (internal quotations omitted).

<sup>1143</sup> 2018 Recommendation at 200–01 (citing *Krause v. Titleserv, Inc.*, 402 F.3d 119 (2d Cir. 2005); *Vernor v. Autodesk, Inc.*, 621 F.3d 1102 (9th Cir. 2010)); see also *Universal Instruments v. Micro Sys. Eng’g*, 924 F.3d 32, 44–45 (2d Cir. 2019).

<sup>1144</sup> See Software Study at 37–38.

*ii. Marine Vessels*

Proponents assert that diagnosis, maintenance, repair, and modification of software in marine vessels are noninfringing. Proponents do not offer a separate fair use analysis specifically for marine vessels because their position is that the same analysis applies across all device types, including land vehicles and marine vessels.<sup>1145</sup> In support, they note that three manufacturers make engines and diagnostic tools for both land vehicles and marine vessels.<sup>1146</sup> Opponents raise no specific objections that the proposed activities are not fair use as to marine vessels.

For essentially the same reasons outlined above for software-enabled consumer devices, and consistent with the 2015 and 2018 Recommendations concerning repair of land vehicles,<sup>1147</sup> the Register concludes that diagnosis, repair, and lawful modification of a vessel function are likely to be noninfringing fair uses of marine vessel software.

*iii. Medical Devices and Systems*

Proponents of an exemption covering medical devices and systems assert that accessing equipment software and data files for purposes of diagnosis, maintenance, and repair is fair use and noninfringing under section 117. Because proponents do not seek an exemption to modify medical devices or systems, or their software, the Register does not consider whether modification is noninfringing.

Regarding the first fair use factor, proponents argue that the proposed uses are intended “to make the devices useful for the purpose for which they are intended.”<sup>1148</sup> In addition, Transtate asserts that where original equipment manufacturers (“OEMs”) fail to provide servicing materials as required by the FDA for certain devices and systems, then accessing those materials via the equipment is a purpose that favors fair use.<sup>1149</sup> In response, opponents primarily argue that the first factor weighs against the fair use because the proposed activities are for a “commercial” purpose.<sup>1150</sup> They base this, in part, on the fact that petitioners are independent service organizations (“ISOs”) that derive a “commercial benefit” from medical equipment repair services.<sup>1151</sup> Proponents

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<sup>1145</sup> iFixit & Repair Ass’n Class 12 Initial at 8, 12.

<sup>1146</sup> *Id.* at 3, 9.

<sup>1147</sup> See 2018 Recommendation at 195–200; 2015 Recommendation at 234–37.

<sup>1148</sup> Summit Imaging Class 12 Initial at 5–6; see Transtate Class 12 Initial at 16.

<sup>1149</sup> See Transtate Class 12 Pet. at 3; Transtate Class 12 Initial at 16.

<sup>1150</sup> See AdvaMed Class 12 Opp’n at 7–8; MITA Class 12 Opp’n at 9; Philips Class 12 Opp’n at 7–8 (citing *Leadsinger, Inc. v. BMG Music Publ’g*, 512 F.3d 522, 530 (9th Cir. 2008) for the proposition that commercial uses are “presumptively . . . unfair”).

<sup>1151</sup> MITA Class 12 Opp’n at 9.

concede that the proposed uses “involve a commercial setting” and that equipment repair can be done for profit, but argue that this is not determinative on the first factor.<sup>1152</sup>

The Register agrees that opponents overstate the significance of the commercial purpose element to the fair use analysis. Commerciality is not fatal to a fair use determination; rather the Supreme Court has clarified that there is no “hard evidentiary presumption” against commercial uses and that such uses must be addressed through a “sensitive balancing of interests.”<sup>1153</sup> Here, the proposed activities are intended to restore a medical device or system’s functionality, not to commercialize the embedded copyrighted software and other servicing materials.<sup>1154</sup> The Register has previously concluded that diagnosis and repair are likely to be transformative uses.<sup>1155</sup> The Register accordingly concludes that proponents’ proposed use is likely transformative and so the first factor favors fair use.

On the second fair use factor, proponents assert that medical equipment computer programs and data files are “functional works” that are “used to support operation, mechanical, and electronic processes of the medical systems.”<sup>1156</sup> Opponents argue that medical equipment software is “creative” and its design involves substantial effort.<sup>1157</sup> Philips asserts that, in contrast to “functional” software embedded in video game consoles and vehicles, medical device software is of “comparatively much higher value

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<sup>1152</sup> Transtate Class 12 Reply at 11.

<sup>1153</sup> *Campbell v. Acuff-Rose*, 510 U.S. 569, 584–85 (1994) (quoting *Sony Corp. of Am. v. Universal City Studios*, 464 U.S. 417, 455 n.40 (1984)); see *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1204 (2021) (“[M]any common fair uses are indisputably commercial.”).

<sup>1154</sup> See Transtate Class 12 Reply at 11 (“Servicing the medical equipment owned by lawful possessors is primarily for public benefit, as access to materials required for servicing is imperative in treating patients, and is especially critical during a pandemic such as the current COVID-19 crisis.”), Ex. 5 (decl. of Kevin Melvin ¶ 7), Ex. 6 (decl. of John Kahler ¶ 16), Ex. 7 (decl. of Abigail Lane-Savage ¶¶ 17–19)).

<sup>1155</sup> 2015 Recommendation at 234–35.

<sup>1156</sup> Transtate Class 12 Initial at 17 (adding that “manuals are technical and contain data, namely information of the functions of the systems or devices and the operating specifications”) (citing *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 536 (6th Cir. 2004); *Sony Comput. Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596, 603 (9th Cir. 2000)); see Summit Imaging Class 12 Initial at 6 (citing same cases); Transtate Class 12 Reply at 11–12 (“The software itself is not dictated by any creative expression, but by the specific technical needs of the machine.”).

<sup>1157</sup> MITA Class 12 Opp’n at 9–10.

and complexity and invoke[s] patient safety and information security concerns.”<sup>1158</sup> Opponents further note that some medical device software is unpublished.<sup>1159</sup>

The Register finds that the second factor favors fair use. Even if proponents are correct that medical device software is highly complex and valuable, the second factor “calls for recognition that some works are closer to the core of intended copyright protection than others.”<sup>1160</sup> Here, the computer programs and data embedded in medical devices and systems are not used for their expressive qualities, but rather for their functional and informational aspects that enable users to control and understand the operation of the equipment.<sup>1161</sup> And even assuming some programs may be unpublished, that does not outweigh the functional nature of the works.<sup>1162</sup>

Proponents contend that the third fair use factor favors fair use because the amount used is necessary for the purpose of diagnosing, maintaining, and repairing medical devices and systems.<sup>1163</sup> Further, proponents assert that “[t]he servicing computer programs and data files involved can be but a small portion of the entire software package.”<sup>1164</sup>

Opponents challenge the assertion that the proposed uses only implicate a portion of the copyrighted works, suggesting that these activities would require use of the entirety of works stored on medical devices and systems, weighing against fair use.<sup>1165</sup> Even if that

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<sup>1158</sup> Philips Class 12 Opp’n at 8–9.

<sup>1159</sup> See AdvaMed Class 12 Opp’n at 8.

<sup>1160</sup> *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 586 (1994).

<sup>1161</sup> See *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1202, 1208–09 (2021); *Lexmark International, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 536 (6th Cir. 2004); *Sony Comput. Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596, 603 (9th Cir. 2000); see generally Class 9 Literary Works — Medical Device Data.

<sup>1162</sup> See 17 U.S.C. § 107 (“The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the [statutory] factors.”); *Harper & Row, Publishers v. Nation Enters.*, 471 U.S. 539, 554 (quoting S. REP. NO. 94-473, at 65 (1975)) (“[T]he unpublished nature of a work is ‘[a] key, though not necessarily determinative, factor’ tending to negate a defense of fair use.”).

<sup>1163</sup> Summit Imaging Class 12 Initial at 6 (“It is necessary to execute the computer programs and access the data files during servicing activities to understand system or device performance and . . . update the data files such as service logs.”); see also Transtate Class 12 Initial at 17.

<sup>1164</sup> Transtate Class 12 Initial at 17; see also Summit Imaging Class 12 Initial at 6; Transtate Class 12 Reply at 12.

<sup>1165</sup> See AdvaMed Class 12 Opp’n at 8; MITA Class 12 Opp’n at 10 (noting that circumvention “would expose the full range of programs, manuals, computer code, logs, and other intellectual property to public view”); Philips Class 12 Opp’n at 9 (“By circumventing Philips’ access controls, ISOs gain unauthorized access to Philips’ copyrighted advanced service software. ISOs

is true for some equipment, courts have nonetheless concluded that use of the entirety of a work is permissible where necessary to achieve a transformative purpose.<sup>1166</sup> As in previous rulemakings, the Register finds that this factor should be given little weight here because the use is necessary to accomplish the transformative purposes of diagnosis, maintenance, and repair.<sup>1167</sup> Accordingly, the Register finds the amount used is reasonable relative to the purpose of the use.

Considering the fourth fair use factor, proponents argue that the proposed uses would have a “minimal” effect on the market for or value of the copyrighted works because medical device and system software and data files are sold with the equipment and have no independent value separate from the devices.<sup>1168</sup> Specifically addressing device and system manuals, Transtate observes that “electronic manuals merely provide technical information,” which manufacturers “provided freely” in the past, suggesting that their use “ha[s] a demonstrated neutral effect on the market.”<sup>1169</sup>

Opponents dispute proponents’ characterization of market harm, commenting that there is a “standalone” market for medical device software.<sup>1170</sup> AdvaMed notes that “[s]ome software on medical devices is activated and maintained through a subscription model,” and other device software can “function on independent, unrelated computers.”<sup>1171</sup> Further, it argues that because some medical devices use embedded software that is owned by a software developer that licenses it to the device manufacturer, any maintenance of the software by an unauthorized user may contravene licensing terms.<sup>1172</sup> Finally, opponents warn that unauthorized repair, particularly if widespread,

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then copy and use those *entire copyrighted* works to service Philips systems more efficiently or modify Philips systems for commercial gain.”).

<sup>1166</sup> See *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1205 (2021) (“The ‘substantiality’ factor will generally weigh in favor of fair use where . . . the amount of copying was tethered to a valid, and transformative, purpose.”); *Sony Computer Entm’t v. Connectix Corp.*, 203 F.3d 596, 603–06 (9th Cir. 2000).

<sup>1167</sup> See 2018 Recommendation at 204; 2015 Recommendation at 235–36.

<sup>1168</sup> Summit Imaging Class 12 Initial at 6; Transtate Class 12 Initial at 17–18, Ex. 1 (decl. of Robert A. Wheeler ¶ 35); Transtate Class 12 Reply at 13–14.

<sup>1169</sup> Transtate Class 12 Initial at 18.

<sup>1170</sup> AdvaMed Class 12 Opp’n at 8.

<sup>1171</sup> *Id.* at 8. *But see* MITA Class 12 Opp’n at 10 (“Although there is no separate market for the medical imaging device software beyond the medical imaging devices containing that software, disabling of TPMs would damage the market for the medical imaging devices *and* the software contained therein.”).

<sup>1172</sup> See AdvaMed Class 12 Opp’n at 8–9.

“can result in patient injury, compromise patient privacy, and place valuable intellectual property at risk, all of which can harm the value of the copyrighted work.”<sup>1173</sup>

Consistent with findings in prior rulemakings and for the other types of software-enabled devices evaluated above, the Register credits proponents’ assertion that most medical device and system software and data files generally have no independent value separate from being used with the equipment.<sup>1174</sup> Although the record suggests that some system features on certain devices may be separately licensed through a subscription service, the purpose of the proposed uses is not to enable ongoing unauthorized access to enhanced features, but merely to restore functionality so the equipment performs as intended.<sup>1175</sup> Even where the software could be installed on another “standalone” computer, there is no indication that the software serves any function, or has any value, except for use with the medical device or system for which it was designed. With respect to opponents’ concerns about the proposed exemption being abused, if a user were to reproduce and retain additional copies of any copyrighted materials for use with other devices, or enable permanent access to subscription-only services, those activities would remain prohibited because they fall outside the scope of the proposed exemption. Overall, the Register concludes that diagnosis, maintenance, and repair of medical devices and systems is unlikely to harm the market for the embedded software and this factor favors fair use.

Taken together, the factors indicate that the proposed uses are likely to be noninfringing fair uses. In light of that conclusion, it is unnecessary for the Register to address proponents’ separate argument that the proposed activities are noninfringing under section 117.<sup>1176</sup>

#### **d. Causation**

The record shows that the statutory prohibition on circumvention of access controls limits users’ ability to diagnose, maintain, and repair software-enabled consumer devices, including repair of video game console optical drives. In addition, the prohibition impedes the ability to engage in the diagnosis, repair, and modification of a vessel function for marine vessels. Finally, the prohibition limits users’ ability to

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<sup>1173</sup> *Id.* at 9; MITA Class 12 Opp’n at 10–11; Philips Class 12 Opp’n at 10.

<sup>1174</sup> See 2018 Recommendation at 204–05; 2015 Recommendation at 236; Software Study at 41.

<sup>1175</sup> See 2018 Recommendation at 198–99 (concluding that although certain vehicle telematics and entertainment software “can have independent value, and may be accessed through subscription services,” where access is necessary to engage in vehicle repair, it is not likely to harm the market for the software).

<sup>1176</sup> Moreover, under the analysis above regarding consumer devices, the Register concludes that section 117 would not fully the cover the proposed uses here.

diagnose, maintain, and repair medical devices and systems. But for the prohibition, users likely could gain lawful access to the copyrighted computer programs and related data files, including medical device servicing materials, for noninfringing repair-related purposes.

**e. Asserted Adverse Effects**

Having concluded that certain repair-related activities are likely noninfringing as to the three classes identified above, the Register evaluates whether these activities are being adversely affected by the prohibition against circumvention.

*i. Consumer Devices*

The Register considers the adverse effects on repair activities for software-enabled consumer devices, in general, before analyzing the same for video game consoles, specifically. In doing so, the Register considers to what extent the legal and factual circumstances have changed since 2018, when similar proposed exemptions for software-enabled devices were denied, in part, because there was insufficient evidence that the proposed uses were being adversely affected.<sup>1177</sup>

*Software-enabled consumer devices, generally.* Proponents assert that as “[s]oftware is increasingly embedded in every imaginable type of product” and TPMs are more commonly deployed, “[t]his often has the undesirable effect—intended or unintended—of hindering diagnosis, maintenance, and repair, traditional uses of those products.”<sup>1178</sup> They argue that because the number of software-enabled devices protected by TPMs is growing at a rate that outpaces the triennial rulemaking, a broad access exemption for repair-related purposes is necessary to remove “legal uncertainty and the risk of harsh penalties.”<sup>1179</sup>

In support, proponents offer a few illustrative examples where the current device-by-device approach adversely affects users seeking to repair consumer devices.<sup>1180</sup> iFixit and the Repair Association note that while circumventing TPMs to repair smartphones is exempt under current regulations, doing so to repair tablets is not.<sup>1181</sup> In opposition, ACT asserts that adequate alternatives to circumvention exist, observing that many

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<sup>1177</sup> See 2018 Recommendation at 220.

<sup>1178</sup> iFixit & Repair Ass’n Class 12 Initial at 10.

<sup>1179</sup> *Id.* at 10, 15 (noting that shipments of smart home devices are “increasing annually at a rate of up to 31%” and the worldwide number of Internet of Things devices “is projected to increase to 43 billion by 2023”).

<sup>1180</sup> See EFF Class 12 Initial at 13–14, 17–60; iFixit & Repair Ass’n Class 12 Initial at 14–18; iFixit & Repair Ass’n Class 12 Reply at 6; Tr. at 800:16–802:14 (Apr. 20, 2021) (Wiens, Repair Ass’n).

<sup>1181</sup> iFixit & Repair Ass’n Class 12 Initial at 17–18.



devices are covered by damage warranties and certified repair options are sufficient.<sup>1182</sup> But proponents note that even where device manufacturers offer repair services, these services may be insufficiently timely, limited to specific types of repairs, or discontinued when a manufacturer goes out of business.<sup>1183</sup> Consequently, some users for whom repair, not replacement, of a specific device is essential are without options.<sup>1184</sup> In addition, proponents comment that the alternatives proposed by opponents are inadequate for “people with limited mobility and those in rural areas,” particularly with in-person services restricted during the COVID-19 pandemic.<sup>1185</sup>

In 2018, proponents were able to show that repair of smartphones and home appliances and home systems was being inhibited, but the record for other types of devices was “insufficient . . . to adequately identify and evaluate any asserted adverse effects on noninfringing uses.”<sup>1186</sup> Compared to 2018, proponents have developed a record of adverse effects on diagnosis, maintenance, and repair for a wider variety of consumer devices.<sup>1187</sup> Accordingly, the Register finds that the current rulemaking record is adequate to consider the statutory factors for the refined class.

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<sup>1182</sup> See ACT Class 12 Opp’n at 2, 5 (suggesting that users “who want to build their own solutions or fix their own devices have plenty of options available to them” and can choose between “closed and open-source systems,” including certified repair options like Apple Repair).

<sup>1183</sup> See iFixit & Repair Ass’n Class 12 Initial at 16 n.98 (citing a consumer complaint about unavailability of local authorized repair services); *id.* at 18 (citing Joe Keegan, *Why Can’t I Fix My Own Phone, Toaster, or Tractor?*, THE MARKUP (Oct. 20, 2020), <https://themarkup.org/ask-the-markup/2020/10/20/0-electronics-right-to-repair-ventilators-iphone>) (noting Apple’s authorized service providers perform only four types of iPhone repair: display, battery, speaker, and camera)); EFF Class 12 Reply at 8–9 (inadequacy of disc player repair alternatives); iFixit & Repair Ass’n Class 12 Reply at 7–8 (Wi-Fi-connected thermostat manufacturer neglected to timely address software bug “leaving many users in the cold without heat in the middle of winter”); Tr. at 764:23–767:18 (Apr. 20, 2021) (Sheehan, iFixit; Smith, U.S. Copyright Office) (discussing adequacy of authorized repair services).

<sup>1184</sup> See iFixit & Repair Ass’n Class 12 Initial at 18 (describing specialized repair services, not offered by manufacturer, to repair damaged devices to recover images and videos for personal or law enforcement purposes); iFixit & Repair Ass’n Class 12 Reply at 7.

<sup>1185</sup> iFixit & Repair Ass’n Class 12 Reply at 7; Tr. at 799:07–19 (Apr. 20, 2021) (Burke, Public Knowledge) (stressing importance of device repair when there are disruptions in supply chain for replacement devices).

<sup>1186</sup> 2018 Recommendation at 220.

<sup>1187</sup> See iFixit & Repair Ass’n Class 12 Initial at 14–15 (noting that the “average household contained eleven software-enabled devices” and “one in ten households is a smart home,” any of which “may be encumbered by a TPM”); Tr. at 800:20–802:14 (Apr. 20, 2021) (Wiens, Repair Ass’n); see also Soo Youn, *Ovens, Dishwashers and Washing Machines Are Breaking Down Like Never*

The first section 1201 statutory factor favors an exemption for consumer devices because the proposed uses “extend the useful life of the devices by facilitating repair and restoration of device functionality,” thereby increasing availability of device software for use.<sup>1188</sup> iFixit and the Repair Association comment that “[s]oftware can only be used when the device it enables functions,” so repairing broken devices makes “software lying dormant” available for use.<sup>1189</sup> In addition, EFF asserts that an expanded repair exemption will promote the creation of additional new works, that is, “videos and writings” discussing how to repair software-enabled devices.<sup>1190</sup> In opposition, ACT contends that allowing circumvention of TPMs will compromise protections on licensed software, which will “allow[] software competitors access to product codes, which is a disincentive to innovation.”<sup>1191</sup> DVD CCA and AACS LA suggest that the Register “look[] past the copyright in the code, and more fully consider[] the copyrights that the code is intended to protect” and how circumvention will harm investment in making new motion pictures.<sup>1192</sup> But there is no indication that permitting the proposed repair-centric uses, would disincentivize creation of either device software or other creative works.<sup>1193</sup>

The second and third statutory factors weigh slightly in favor of an exemption, as it would remove impediments to repairing devices for educational purposes. Proponents note that exempting repair activities will “enable hand-on-learning and research into the nature and function of devices.”<sup>1194</sup> DVD CCA and AACS LA view these factors as “inconsequential” to evaluating the proposals, and they assert that preserving disc players, unlike video game consoles, is not justified because disc players are inexpensive to replace.<sup>1195</sup> The Register agrees that these factors have limited relevance to the proposed uses, but nonetheless concludes that repair education and commentary are

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*Before. But There’s Nobody to Fix Them.*, WASH. POST (Oct. 22, 2020), <https://www.washingtonpost.com/road-to-recovery/2020/10/22/appliance-repair-services-pandemic/>; Louise Matakis, *Best Buy Made These Smart Home Gadgets Dumb Again*, WIRED (Nov. 12, 2019), <https://www.wired.com/story/best-buy-smart-home-dumb/>.

<sup>1188</sup> 2018 Recommendation at 221.

<sup>1189</sup> iFixit & Repair Ass’n Class 12 Reply at 10.

<sup>1190</sup> EFF Class 12 Initial at 16.

<sup>1191</sup> ACT Class 12 Opp’n at 5.

<sup>1192</sup> DVD CCA & AACS LA Class 12 Opp’n at 16–17 (citing analysis of video game consoles in 2012 Recommendation at 51).

<sup>1193</sup> See iFixit & Repair Ass’n Class 12 Reply at 10–11; EFF Class 12 Reply at 5–6.

<sup>1194</sup> iFixit & Repair Ass’n Class 12 Initial at 22; see EFF Class 12 Initial at 16.

<sup>1195</sup> DVD CCA & AACS LA Class 12 Opp’n at 17–19.

diminished by the current prohibition against circumvention, as users may be unwilling to risk liability to demonstrate repair-related activities.

Addressing market harm under the fourth statutory factor, ACT warns that “the potential damage to all software markets—mobile apps, enterprise software, and firmware—is significant if these exemptions are approved.”<sup>1196</sup> To illustrate how circumvention can lead to such harm, ACT notes that pirates are circumventing TPMs even on free smartphone apps and redistributing the apps with the pirate’s ad network installed on the pirated version.<sup>1197</sup> Offering similar piracy-related concerns, DVD CCA and AACS LA comment that “any repair exemption of independent code protecting the DVD or Blu-ray player threatens to disrupt the content protection ecosystem.”<sup>1198</sup> EFF observes that there is no opposition to a repair exemption for the “vast majority of devices.”<sup>1199</sup> Further, EFF notes opponents’ concerns about market harm are “speculative” and have not been borne out by “evidence of increased infringement” resulting from the existing jailbreaking and repair exemptions.<sup>1200</sup> With respect to disc players, proponents comment that circumvention of TPMs of the players alone would not permit unauthorized access to expressive works; rather, it may expose an encryption key that could be used to make a separate circumvention of TPMs on the discs, an activity that would not be covered by the proposed exemption.<sup>1201</sup> As to whether the exemption would harm the market for device firmware, proponents argue there is no market for firmware independent of the device because a user of the firmware “would need to own the hardware device for it to work.”<sup>1202</sup>

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<sup>1196</sup> ACT Class 12 Opp’n at 2; *see also* ACT Class 12 Opp’n at 5–6 (noting that “[l]icensed software is part of most products with digital content embedded in them” and permitting circumvention of TPMs protecting that software undermines “investment and distribution in existing products and future innovations”).

<sup>1197</sup> *See* Tr. at 759:06–760:06 (Apr. 20, 2021) (Reed, ACT).

<sup>1198</sup> DVD CCA & AACS LA Class 12 Opp’n at 19–20; *see also* Tr. at 771:24–774:08 (Apr. 20, 2021) (Amer, U.S. Copyright Office; Ayers, DVD CCA & AACS LA) (discussing how TPMs protecting firmware in disc players control access to cryptographic keys that can be used to decrypt content stored on discs); Tr. at 776:03–777:14 (Apr. 20, 2021) (Cheney, NTIA; Ayers, DVD CCA & AACS LA) (same).

<sup>1199</sup> EFF Class 12 Reply at 5.

<sup>1200</sup> *Id.* at 5–6; *see also* iFixit & Repair Ass’n Class 12 Initial at 22; Tr. at 762:10–21. (Apr. 20, 2021) (Gagliano, EFF).

<sup>1201</sup> *See* EFF Class 12 Reply at 6; Tr. at 763:21–764:22 (Apr. 20, 2021) (Sheehan, iFixit); *see also* Tr. at 784:18–785:17 (Apr. 20, 2021) (Gagliano, EFF) (observing that, despite Blu-ray encryption being “widely publicly available” since 2007, this has not diminished licensing and release of works on DVD and Blu-ray).

<sup>1202</sup> EFF Class 12 Reply at 5.

The Register finds that this factor does not disfavor an exemption because consumer device firmware generally does not have independent value separate from the device. Opponents' concerns that expanding the exemption to cover devices that permit access to other expressive works—including e-readers, disc players, and Wi-Fi connected speakers—would lead to infringement have not been substantiated.<sup>1203</sup> Similar concerns about exemptions creating a path to piracy were raised by opponents of current exemptions for devices and media that access expressive works, but evidence of infringement attributable to exemption misuse has not materialized. Indeed, the Register is recommending these exemptions be renewed, in part, because they received no meaningful opposition reflecting changed circumstances.<sup>1204</sup> Moreover, as noted above, opponents' concerns largely relate to the proposal to *modify* content-oriented devices.<sup>1205</sup> Because the Register declines to find that device modification in general is likely to be noninfringing, these concerns should be allayed if not moot. Nonetheless, the Register concludes it is appropriate to retain the definitions of “maintenance” and “repair,” as well as to require that circumvention not be “accomplished for the purpose of gaining unauthorized access to other copyrighted works.” These restrictions appropriately circumscribe the proposed uses and help to ensure that the exemption is not misused as a shield for piracy.

Turning to the fifth statutory factor, participants dispute whether the Office should consider the overlap of the proposed exemption with other laws and regulations. Opponents assert that device manufacturers use TPMs to comply with obligations concerning user privacy and safety as well as to protect trade secrets and other intellectual property.<sup>1206</sup> Proponents argue that the Register should decline to consider non-copyright related factors and should not condition the exemption on compliance with other laws or regulations.<sup>1207</sup> The Office has previously stated that “it will generally decline to consider health, safety, and environmental concerns” as part of the triennial proceeding, but that “granting of an exemption provides no defense to those

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<sup>1203</sup> See NPRM at 65,300; DVD CCA & AACS LA Class 12 Opp'n at 3–4, 7–8, 11–15.

<sup>1204</sup> See NPRM at 65,295–300 (recommending renewal of jailbreaking smartphones, tablets, and smart TVs; educational, accessibility, and other uses of motion pictures on DVD and Blu-ray discs; and repair of smartphones).

<sup>1205</sup> See DVD CCA & AACS LA Class 12 Opp'n at 9–11; Joint Creators Class 12 Opp'n at 9 (faulting the proposal to allow modification as “abstract”).

<sup>1206</sup> See ACT Class 12 Opp'n at 6; EDA & AED Class 12 Opp'n at 16–17.

<sup>1207</sup> See Consumer Reports Class 12 Reply at 2; EFF Class 12 Reply at 7–8; iFixit & Repair Ass'n Class 12 Reply at 11; Tr. at 768:17–24 (Apr. 20, 2021) (Sheehan, iFixit). Proponents also note environmental benefits to repair. See iFixit & Repair Ass'n Class 12 Initial at 22–23; Public Knowledge & iFixit Class 12 Initial at 6.

who use it as an excuse to violate other laws and regulations.”<sup>1208</sup> The Register adheres to that view here.

Also relating to the fifth factor, proponents observe that TPMs can have an anticompetitive effect on independent repair and self-repair.<sup>1209</sup> Related to proponents’ concerns, the Office takes notice of recent government initiatives to address anticompetitive conduct in the repair sector. In May 2021, the Federal Trade Commission issued a report to Congress on repair restrictions. The report discussed how TPMs are used by manufacturers to “impede repairs by individuals and independent repair shops” while noting that the section 117(c) repair exception and the current temporary exemptions to section 1201(a) indicate that repair restrictions are “not insurmountable.”<sup>1210</sup> Following the FTC Report, on July 9, the President issued an Executive Order encouraging the FTC to exercise its rulemaking authority to address “unfair anticompetitive restrictions on third-party repair or self-repair of items.”<sup>1211</sup> The Register concludes that these initiatives to address anticompetitive conduct provide further support for an expanded exemption for consumer device repair.

*Video game consoles.* The Office has scrutinized previous proposals involving circumvention of TPMs on video game consoles due to a close association between console TPMs and prevention of piracy.<sup>1212</sup> Opponents have raised similar concerns in this rulemaking, though the proposed exemption is narrower than past proposals because the proposed use is limited to repair of console optical drives.

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<sup>1208</sup> Section 1201 Report at 126 (citing 2015 Recommendation at 11); *see* 2018 Recommendation at 5 (summarizing that the Acting Register “did not accord significant weight to such considerations” in the 2018 proceeding and noting that despite “the seriousness of these issues, they generally are best addressed through other legal frameworks and by agencies with expertise in those areas”).

<sup>1209</sup> *See* Transtate Class 12 Pet. at 4; ACA Class 12 Initial at 2; EFF Class 12 Initial at 15; Kevin Kilkuskie Class 12 Initial; Summit Imaging Class 12 Initial at 3, 5; EFF Class 12 Reply at 5; iFixit & Repair Ass’n Class 12 Reply at 7–8, 11; Consumer Reports Class 12 Reply at 2; Tr. at 765:11–19 (Apr. 20, 2021) (Sheehan, iFixit).

<sup>1210</sup> FTC Report at 24–26.

<sup>1211</sup> Exec. Order No. 14,036 of July 9, 2021, 86 Fed. Reg. 36,987, 36,992 (July 14, 2021); *see also* 86 Fed. Reg. at 36,992 (encouraging FTC to exercise regulatory authority to address “any other unfair industry-specific practices that substantially inhibit competition.”); FTC, File No. 212 3126, Resolution Directing Use of the Compulsory Process Regarding Repair Restrictions (Sept. 2, 2021); FTC, File No. 211 0160, Resolution Directing Use of the Compulsory Process Regarding Abuse of Intellectual Property (Sept. 2, 2021).

<sup>1212</sup> *See* 2018 Recommendation at 205–06; 2015 Recommendation at 199–201; 2012 Recommendation at 42–44, 47; Tr. at 792:22–793:02 (Apr. 20, 2021) (Williams, Joint Creators).

Proponents assert that where an optical drive is not functioning, console firmware must be accessed to remove and replace the drive.<sup>1213</sup> Proponents claim this process requires circumvention of TPMs to “divorce” the old drive from and “marry” the new drive to the console motherboard.<sup>1214</sup> All participants agree that the console will not function properly if console TPMs are not restored after the drive repair is executed.<sup>1215</sup> While opponents question whether this can be accomplished and warn that an exposed console would facilitate video game piracy,<sup>1216</sup> proponents insist that restoring console TPMs is feasible.<sup>1217</sup> Opponents also assert that a repair exemption is unnecessary because console manufacturers “provide easy, reliable, and affordable repair services” — both under warranty and post-warranty — as well as “comprehensive online and offline support networks that help consumers to remotely troubleshoot issues.”<sup>1218</sup> Proponents contend that repair services for consoles have become “substantially less available” since the 2018 rulemaking, noting for example that Microsoft has discontinued support for certain pre-2016 consoles.<sup>1219</sup> Finally, opponents suggest circumvention is unnecessary

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<sup>1213</sup> See Public Knowledge & iFixit Class 12 Initial at 2–3.

<sup>1214</sup> *Id.* at 3.

<sup>1215</sup> See Tr. at 755:12–756:03 (Apr. 20, 2021) (Burke, Public Knowledge); Tr. at 783:17–784:15 (Apr. 20, 2021) (Amer, U.S. Copyright Office; Williams, Joint Creators); Tr. at 787:11–16 (Apr. 20, 2021) (Wiens, Repair Ass’n).

<sup>1216</sup> See Tr. at 777:25–778:23 (Apr. 20, 2021) (Reed, ACT) (asserting that replacing and flashing an Xbox drive can facilitate playing pirated content); Tr. at 782:01–783:03 (Apr. 20, 2021) (Williams, Joint Creators); Tr. at 794:20–24 (Apr. 20, 2021) (Ayers, DVD CCA & AACS LA); ESA Class 12 *Ex Parte* Letter at 2 (Aug. 12, 2021).

<sup>1217</sup> Public Knowledge & iFixit Class 12 Reply at 8–9 (noting that a console must be “re-locked” to function correctly and restore access to stored device data — “effective repair *requires* that the pre-repair and post-repair level of security remain identical”); *see also* Tr. at 774:11–775:25 (Apr. 20, 2021) (Burke, Public Knowledge); Tr. at 779:04–780:10 (Apr. 20, 2021) (Wiens, Repair Ass’n) (noting “the device isn’t repaired unless the copy protection is restored” which requires running “a software tool that pairs [an off-the-shelf] optical drive to the machine”); Chris Green, Comment to *Replacement Disc Drive won’t play games but will play movies*, iFIXIT (May 3, 2011), <https://www.ifixit.com/Answers/View/51505/Replacement+Disc+Drive+won't+play+games+but+will+play+movies> (recommending swap of controller board from original drive to new drive).

<sup>1218</sup> Joint Creators Class 12 Opp’n at 3–4; *see* Tr. at 792:12–18 (Apr. 20, 2021) (Williams, Joint Creators); Tr. at 802:25–804:03 (Apr. 20, 2021) (Williams, Joint Creators).

<sup>1219</sup> Public Knowledge & iFixit Class 12 Initial at 2, 4–5; Public Knowledge & iFixit Class 12 Reply at 6; Tr. at 789:04–791:02 (Apr. 20, 2021) (Sheehan, iFixit; Burke, Public Knowledge) (commenting that video game repairers “have storage rooms full of hundreds of consoles that they’ve been unable to fix for their customers, because without the ability to replace a broken optical drive on its own, the repairs are too costly, too risky, and the parts are too hard to find”); Tr. at 798:15–799:06 (Apr. 20, 2021) (Burke, Public Knowledge); Kyle Wiens, Op-ed, *Copyright Law is Bricking*

because users can replace both the malfunctioning optical drive and its paired motherboard with a functioning hardware combination.<sup>1220</sup> Proponents argue that the cost and difficulty in locating parts makes this an inadequate alternative compared to replacing only the optical drive.<sup>1221</sup>

The record indicates that circumvention is necessary to repair optical drives and that restoration of the same TPMs, including copy controls and authentication mechanisms, is possible and necessary to restore console functionality in accordance with its original or authorized specifications. Unlike in previous rulemakings, the proposed exemption is limited to a specific, recurring hardware issue. In addition, compared to 2018, proponents here have identified some consoles for which manufacturer repair services are neither available nor adequate.<sup>1222</sup> For these reasons, the Register concludes that there are potential adverse effects to consider under the section 1201 statutory factors.

Regarding the first statutory factor, proponents assert that the inability to execute hardware repairs diminishes the availability for use of the console firmware.<sup>1223</sup> Looking beyond the firmware to the video games, opponents assert that “[u]nauthorized repair will undermine the security of consoles, thereby threatening the ecosystems that consumers currently enjoy” and potentially harming the availability of games.<sup>1224</sup> Proponents respond that the availability of video games is also adversely affected by an unrepaired console, and that an exemption for repair “will give users enduring, lawful access to content that they have legally purchased and licensed from creators, while also enabling them to legally purchase and play new content on their repaired console.”<sup>1225</sup> The Register agrees with proponents that this factor favors an exemption because, provided that all TPMs are restored, console repair is more likely to increase availability of works for use than it is to deter video game developers from creating new works.

Considering the second and third statutory factors together, while they are of limited relevance to the proposal, the Register finds that they weigh slightly in favor of an exemption, as the proposed uses may benefit console preservation and, to a lesser extent, education about consoles. Opponents argue that “repair of consoles is not in

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*Your Game Console. Time to Fix That*, ARS TECHNICA (Dec. 12, 2020), <https://arstechnica.com/tech-policy/2020/12/copyright-law-is-bricking-your-game-console-time-to-fix-that/>.

<sup>1220</sup> See Joint Creators Class 12 Opp’n at 5 & n.14; ESA Class 12 *Ex Parte* Letter at 2 (Aug. 12, 2021).

<sup>1221</sup> See Tr. at 789:04–791:02 (Apr. 20, 2021) (Sheehan, iFixit; Burke, Public Knowledge).

<sup>1222</sup> Compare 2018 Recommendation at 219–20, with Public Knowledge & iFixit Class 12 Initial at 2–5.

<sup>1223</sup> Public Knowledge & iFixit Class 12 Initial at 5.

<sup>1224</sup> Joint Creators Class 12 Opp’n at 6.

<sup>1225</sup> Public Knowledge & iFixit Class 12 Reply at 9; Tr. at 787:24–788:16 (Apr. 20, 2021) (Wiens, Repair Ass’n); Tr. at 953:24–954:04 (Apr. 20, 2021) (Gordon-Byrne, Repair Ass’n).

furtherance of archiving, preserving, or educating people about video games,” is “frequently a commercial enterprise,” does not provide commentary on video games, and that any research only relates to repair, “not any broader topic.”<sup>1226</sup> The Register agrees that the connection between repair and these other uses is tenuous, but nonetheless agrees with proponents that repair may provide some educational value about how optical drives function within gaming consoles.<sup>1227</sup>

On the fourth statutory factor, opponents assert there is no reason for the Register to deviate from previous rulemakings where “console-specific concerns about potential market harm” weighed against exemptions.<sup>1228</sup> As one example, opponents point to a recent criminal indictment against a hacking group that created circumvention tools for certain consoles, which allowed users to access libraries of unauthorized copies of video games.<sup>1229</sup> Proponents agree that concerns about video game piracy are valid, but argue that opponents have made no showing that permitting repair of console optical drives, specifically, would increase piracy.<sup>1230</sup> Moreover, proponents assert that there is no independent market for console firmware and that repair of consoles will actually increase the market for games played using discontinued or older consoles.<sup>1231</sup>

The Register appreciates opponents’ legitimate concerns over video game piracy, but it is unclear how the targeted repair activities proposed here would further such activity. Indeed, the criminal piracy cited by opponents appears to involve console modification, which is outside the scope of the proposal.<sup>1232</sup> Overall, this factor does not disfavor an exemption because restoration of TPMs following repair diminishes the piracy risk,

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<sup>1226</sup> Joint Creators Class 12 Opp’n at 6.

<sup>1227</sup> Public Knowledge & iFixit Class 12 Initial at 5; Public Knowledge & iFixit Class 12 Reply at 9–10.

<sup>1228</sup> Joint Creators Class 12 Opp’n at 6–7 (quoting 2018 Recommendation at 206); *see* Tr. at 747:20–748:03, 749:18–25 (Apr. 20, 2021) (Williams, Joint Creators); Tr. at 793:03–20 (Apr. 20, 2021) (Williams, Joint Creators) (commenting that limiting language does not address “big picture concerns that the 1201 statute really set a marketplace expectation for typical consumers” that, when altered, results in market harm).

<sup>1229</sup> *See* Joint Creators Class 12 Opp’n at 3.

<sup>1230</sup> Public Knowledge & iFixit Class 12 Reply at 9–10; Tr. at 755:12–756:03 (Apr. 20, 2021) (Burke, Public Knowledge); Tr. at 953:20–953:24 (Apr. 20, 2021) (Gordon-Byrne, Repair Ass’n).

<sup>1231</sup> Public Knowledge & iFixit Class 12 Initial at 6; Public Knowledge & iFixit Class 12 Reply at 10.

<sup>1232</sup> *See* Indictment, *U.S. v. Louarn*, No. CR20-127 (Aug. 20, 2020), ECF 1 (outlining criminal piracy allegations involving modification of consoles using USB ports and MicroSD ports, not consoles with optical drives); Matthew Gault, *Nintendo Threatens Repair Shop for Advertising Switch Mod Chip Installs*, VICE MOTHERBOARD (June 18, 2020), <https://www.vice.com/en/article/7kpxbb/nintendo-threatens-repair-shop-for-advertising-switch-mod-chip-installs>.



console firmware has little if any independent value outside of the device, and restoring more consoles to functionality may increase the potential market for video games.

The Register finds no additional factors raised by participants about repair of video game consoles relevant to her determination.

After weighing the statutory factors, the Register concludes that the prohibition on circumvention of TPMs is causing, or is likely to cause, adverse effects on the noninfringing diagnosis, maintenance, and repair of software-enabled devices designed primarily for use by consumers. Carrying forward the language of the existing exemption, the Register concludes the definitions of “maintenance” and “repair” appropriately focus these activities on the restoration of device functionality, including restoring TPMs that serve other beneficial purposes such as protecting user privacy, security, and safety. In addition, the Register concludes that the distinct record for repair of video game consoles, and the unique concerns raised by circumvention of TPMs on those devices, warrant a more limited exemption.

*ii. Vehicles and Marine Vessels*

As noted above, the Register has determined that the exempt activities for land vehicles—diagnosis, repair, and lawful modification of a vehicle function—are also likely to be noninfringing for marine vessel. The Register proceeds to evaluate whether the prohibition on circumvention is adversely affecting these noninfringing uses for marine vessels. In addition, she considers whether the limitation in the current vehicle exemption that requires users to comply with other laws is adversely affecting users’ ability to engage in noninfringing uses.<sup>1233</sup> For the following reasons, the Register concludes the vehicle exemption should be expanded to include marine vessels and that the language requiring compliance with other laws should be removed.

Proponents assert that users of marine vessels are adversely affected in the same manner as users of land vehicles, in particular, tractor owners. iFixit and the Repair Association explain that boat dealers that service these marine vessels “are often located far from where the vehicles are used and the manufacturers will not sell their diagnostic software to the owners themselves.”<sup>1234</sup> Consequently, at least some vessel users do not have

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<sup>1233</sup> Some opposition comments also propose changes to the existing vehicle exemption that would restrict its scope. See EDA & AED Class 12 Opp’n at 7–9. The Register declines to consider changes that would limit the scope of the proposed exemption, which should have been submitted in opposition to the renewal petitions. To the extent that comments are relevant to proponents’ request to remove the Illegality Limitation, the Register considers them here.

<sup>1234</sup> iFixit & Repair Ass’n Class 12 Initial at 8; see also AFBF Class 12 *Ex Parte* Letter at 2 (Aug. 3, 2021) (noting that “‘farming’ may include crop cultivation in a marine environment through water-based transport and machinery”).

adequate access to repair options and diagnostic information.<sup>1235</sup> Proponents further observe that the same manufacturers of land vehicle engines also manufacture marine vessel engines, so that excluding marine vessels from the exemption is “a distinction without a difference.”<sup>1236</sup> In support, SEMA notes that it is “aware of an engine tuning product that is legal under the DMCA exemption for land vehicles but has been challenged for its application in boats given the current Class 12 limitation.”<sup>1237</sup> No opposition comments address or object to extending the exemption for land vehicle repair to marine vessels. Because the Register credits the similarities between marine vessels and land vehicles, and finds no reason to deviate from the adverse effects analysis in the previous recommendations for land vehicles,<sup>1238</sup> she concludes that the current prohibition against circumvention is or is likely to adversely affect diagnosis, repair, and lawful modification of a vessel function for marine vessels.

Turning to the requirement that users comply with other laws and regulations when circumventing TPMs to repair vehicles, iFixit and the Repair Association assert that any exemption “should not be conditioned on compliance with non-copyright-related laws and regulations.”<sup>1239</sup> Opponents respond that proponents’ arguments are the same that the Office rejected in previous rulemakings, and that proponents fail to provide evidence of changed circumstances that warrant reconsideration.<sup>1240</sup>

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<sup>1235</sup> See iFixit & Repair Ass’n Class 12 Initial at 9, 20 (noting that “[f]requently, the electronic engine installed in ships does not have a diagnostic gauge or display mounted in the control panel” and “[t]his real-time engine diagnostic information is essential for engine operators”).

<sup>1236</sup> *Id.* at 9.

<sup>1237</sup> SEMA Class 12 Reply at 1.

<sup>1238</sup> See 2018 Recommendation at 212–16; 2015 Recommendation at 240–44, 248.

<sup>1239</sup> iFixit & Repair Ass’n Class 12 Pet. at 3 (“The DMCA is not a catch-all extra punishment for violation of EPA regulations or breach of contract, and an exemption . . . does not immunize people from punishment for violating other laws and regulations.”); see also ACA Class 12 Initial at 1 (“[T]he exemption has never been shown . . . to interfere with a vehicle’s safety and environmental controls.”); Tr. at 836:02–15 (Apr. 20, 2021) (Sheehan, iFixit) (suggesting the limitation “compounds liability”).

<sup>1240</sup> See Auto Innovators Class 12 Opp’n at 6–8; Tr. at 750:15–751:11, 839:14–840:09 (Apr. 20, 2021) (Rosenbaum, Auto Innovators). Citing the 2018 Recommendation, Auto Innovators offers the following reasons to justify retaining the limiting language: (1) the limitation is not impeding legitimate vehicle repair as “other laws” still apply regardless of the exemption; (2) proponents have not shown “any incremental impact on noninfringing repair activities” from DMCA enforcement of this limitation; (3) the limitation is consistent with language found in other permanent and temporary exemptions; and (4) there is concern that removing the limitation could “will cause confusion and mislead automobile owners regarding whether they must comply with other laws.” See Auto Innovators Class 12 Opp’n at 8–9.

The Register has received requests to remove similar references to other laws from the exemptions pertaining to medical device data (Class 9) and security research (Class 13). In those classes, the Office received comments from the FDA and DOJ, the federal agencies tasked with enforcement of the relevant regulatory schemes. Those offices advised the Office that they would not object to removal of the challenged language.<sup>1241</sup> They concluded that it is unnecessary to condition eligibility for the exemption on compliance with other laws, as the latter will continue to apply regardless of whether the user is exempted from liability under section 1201. The Register agrees with those views, and accordingly has recommended removing the “other laws” language from Classes 9 and 13, and replacing it with a clarifying statement that eligibility for the exemption is not a safe harbor or defense to liability under other applicable laws. The Register concludes that the same reasoning is applicable in this class, and therefore is recommending a similar change to the regulatory language here.

*iii. Medical Devices and Systems*

Finally, the Register considers whether the prohibition against circumventing TPMs on medical devices and systems to access computer programs and data files, including equipment manuals, is adversely affecting the repair of those devices and systems. Proponents describe the use of various TPMs as an effort by OEMs “to try to prevent or hinder access to the software tools and other programs and data files in which they claim copyright needed for the diagnosis, repair, and maintenance of medical devices.”<sup>1242</sup> To illustrate the adverse effects on repair, proponents point to instances where medical facilities have been unable to use equipment due to inadequate repair options, particularly during the COVID-19 pandemic.<sup>1243</sup> They assert that where users,

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<sup>1241</sup> Letter from Suzanne B. Schwartz, Dir., Office of Strategic P’ships & Tech. Innovation, FDA, to Kevin R. Amer, Acting Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 2 (Aug. 13, 2021); DOJ Class 13 Reply at 5.

<sup>1242</sup> Summit Imaging Class 12 Pet. at 3; *see* Transtate Class 12 Pet. at 2–3 (noting that OEMs use “TPMs such as encryption, embedded software, and challenge-response mechanisms, access codes, passwords, keys, or digital signatures” to restrict access to device software and “manuals and technical data . . . being provided via electronic media, sometimes as data files installed on the medical systems or devices”); Tr. at 949:12–950:10 (Apr. 21, 2021) (O’Reilly, U.S. PIRG).

<sup>1243</sup> *See* Summit Imaging Class 12 Initial at 3–4; Transtate Class 12 Initial at 11 & Ex. 21 (citing Lauren Goode, *Right-to-Repair Groups Fire Shots at Medical Device Manufacturers*, WIRED (May 19, 2020), <https://www.wired.com/story/right-to-repair-medical-equipment-ifixit/>); *see also* Joe Keegan, *Why Can’t I Fix My Own Phone, Toaster, or Tractor?*, THE MARKUP (Oct. 20, 2020), <https://themarkup.org/ask-the-markup/2020/10/20/0-electronics-right-to-repair-ventilators-iphone> (reporting on a biomedical technician unable to repair ventilators in the Strategic National Stockpile); Adi Robertson, *Right-to-Repair Advocates Say Hospitals Need New Rules to Keep Equipment Working*, THE VERGE (July 9, 2020), <https://www.theverge.com/2020/7/9/21318551/right->

specifically ISOs, have engaged in circumvention to repair medical devices and systems, manufacturers have alleged violations of section 1201.<sup>1244</sup>

Opponents assert that adequate alternatives to circumvention nullify the basis for an exemption. AdvaMed comments that “[r]obust service and repair offerings already exist through OEMs and authorized ISOs” and “[o]wner or lessee users of medical devices can also have their staff become authorized . . . through training programs and undertaking certain [FDA reporting] obligations.”<sup>1245</sup> Similarly, Philips comments that it “provides ISOs with access to . . . materials that allow them to setup and service Philips’ medical imaging systems, but restricts them from accessing more advanced unlicensed features and service functionalities.”<sup>1246</sup> Proponents acknowledge that certain OEMs provide equipment owners and ISOs with some access to software and servicing materials, but contend that this access is often not sufficient to diagnose, maintain, and repair the equipment.<sup>1247</sup> For example, Transtate comments that “basic” repair “documentation and software is not available on all medical systems,” and even where it is provided, “many systems” are not properly configured or “require[] the purchase of thousands of dollars in hardware per engineer” to service the equipment.<sup>1248</sup> Moreover, proponents assert authorized repair options are inadequate to provide timely, cost-effective service, which can be essential to avoid negative patient outcomes.<sup>1249</sup> In

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to-repair-hospital-equipment-rules-third-party-pirg-survey; U.S. PIRG, HOSPITAL REPAIR RESTRICTIONS (July 2020), <https://uspirgedfund.org/reports/usp/hospital-repair-restrictions>.

<sup>1244</sup> See Summit Class 12 Pet. at 2; Transtate Class 12 Pet. at 4; Summit Imaging Class 12 Initial at 2; Tr. at 806:09–808:13 (Apr. 20, 2021) (Kerwin, IAMERS); Tr. at 952:05–16 (Apr. 21, 2021) (Smith, U.S. Copyright Office; O’Reilly, U.S. PIRG).

<sup>1245</sup> AdvaMed Class 12 Opp’n at 2, 10–11; see also MITA Class 12 Opp’n at 3; Tr. at 825:06–827:22 (Apr. 20, 2021) (Reed, ACT) (confirming that TPMs limit access to some device manuals to authorized servicers).

<sup>1246</sup> Philips Class 12 Opp’n at 5–6 & Ex. A (decl. of Jacqueline Dickson ¶¶ 2–11) (describing Philips’ customer service intellectual property policies, including the access levels for different types of authorized users).

<sup>1247</sup> See Summit Class 12 Initial at 3; Transtate Class 12 Initial at 8, 14; Transtate Class 12 Reply at 4–5.

<sup>1248</sup> Transtate Class 12 Reply at 4–5, 8 n.24; see also Summit Imaging Class 12 Initial at 3; Tr. at 812:14–813:03 (Apr. 20, 2021) (Inacker, Transtate); Tr. at 948:07–21 (Reynolds, Colo. Ass’n of Biomed. Equip. Technicians); Isaac Scher, *Hospitals Need Ventilators to Keep Severe COVID-19 Patients Alive. They Might Not Be Able to Fix Them Without Paying the Manufacturer \$7,000 per Technician.*, BUS. INSIDER (June 3, 2020), <https://www.businessinsider.com/ventilator-manufacturers-dont-let-hospitals-fix-coronavirus-right-to-repair-2020-5>.

<sup>1249</sup> See Summit Imaging Class 12 Initial at 3–4 (commenting that because medical providers “cannot troubleshoot and conduct repairs promptly” due to a lack of access to “software and files

addition, proponents comment that manufacturers in some cases no longer provide repair support for older equipment that can still be used by medical facilities to provide treatment.<sup>1250</sup>

Relevant to the first section 1201 statutory factor, proponents assert that the prohibition on circumventing TPMs restricts the availability for use of medical device software and manuals in which OEMs are claiming copyright.<sup>1251</sup> Opponents respond that “medical device software is broadly licensed and available” to providers, although TPMs may limit “what aspects of the device software may be viewed and copied.”<sup>1252</sup> Philips comments that it makes available all the copyrighted material “needed to permit basic repair and servicing” of its devices, and asserts that the “copyright-protected options and features” that proponents seek are “beyond essential repair and servicing.”<sup>1253</sup> Further, it asserts that copyrighted software on older devices that have received an “End of Service” designation should not be accessible for the proposed uses because “the equipment is no longer safe and effective to operate.”<sup>1254</sup> While the Register acknowledges opponents’ safety concerns and will address those below, she concludes that this factor favors an exemption because the prohibition on circumvention makes medical equipment software and manuals less available for use in noninfringing diagnosis, maintenance, and repair.

Regarding the second and third statutory factors, MITA asserts that the “commercial nature” of petitioners’ interest runs contrary to the nonprofit nature of the purposes outlined in these factors.<sup>1255</sup> Although repair of medical devices and systems that are no longer supported by OEMs arguably preserves the availability for use of the

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needed to service their equipment,” repair is delayed and medical equipment remains out of service, leading to “negative patient outcomes” — an issue exacerbated by the COVID-19 pandemic); Tr. at 805:18–806:06 (Apr. 20, 2021) (Kerwin, IAMERS) (commenting that rural and regional hospital facilities are underserved by OEMs in terms of cost and timeliness of repair); Tr. at 807:23–808:04 (Apr. 20, 2021) (Kerwin, IAMERS) (observing a price differential of \$150-200 per hour for ISO repair compared to \$600-800 per hour for OEM repair with a four-hour minimum); Tr. at 818:13–819:01 (Apr. 20, 2021) (Sheehan, iFixit) (noting delays in servicing wheelchairs and ventilators).

<sup>1250</sup> See Summit Imaging Class 12 Initial at 2; Transtate Class 12 Initial at 6; Transtate Class 12 Reply at 5.

<sup>1251</sup> Summit Imaging Class 12 Initial at 2–3; Transtate Class 12 Initial at 2, 4–5; Transtate Class 12 Reply at 4–5.

<sup>1252</sup> MITA Class 12 Opp’n at 3.

<sup>1253</sup> Philips Class 12 Opp’n at 15.

<sup>1254</sup> *Id.* at 15–16.

<sup>1255</sup> MITA Class 12 Opp’n at 3.

equipment’s software and servicing materials, the Register finds these factors not especially relevant to the determination.

On the fourth factor, opponents warn that permitting circumvention “would severely harm” the market for and value of medical equipment software because it would give “full access” to entities requesting it “for purely commercial purposes.”<sup>1256</sup> Specifically, they contend that allowing circumvention “would expose intellectual property, including valuable know-how in addition to the copyrighted information, to competitors and the general public,” who could “view and replicate valuable innovations.”<sup>1257</sup> AdvaMed also expresses “concerns about accessing and activating software modules that are purchased or licensed separately following an additional purchase or subscription model,” noting that unauthorized access would harm the value of those works.<sup>1258</sup> Transtate responds that opponents’ focus on ISOs’ commercial motives is “misplaced” because the exemption would apply only to “lawful possessors of the medical devices and the third party servicers performing services requested by the lawful possessors.”<sup>1259</sup>

The Register concludes that the narrow proposed uses and additional limitations on the scope of these activities limit any potential market harm. To the extent a user is accessing the software and manuals to diagnose, maintain, or repair the device or system, those uses support rather than displace the embedded computer programs.<sup>1260</sup> As with other software-enabled devices, the functional software and manuals for medical devices and systems have no independent value separate from the equipment they operate or explain.<sup>1261</sup> Further, to appropriately circumscribe the proposed uses, the Register determines that the definitions of “maintenance” and “repair” used in the current exemption for devices should likewise apply to the proposal for medical devices and systems. This factor therefore does not disfavor an exemption.

Under the fifth statutory factor, the Librarian has discretion to consider additional factors she deems appropriate. Proponents argue that the public interest in deterring anticompetitive behavior favors the requested exemption. They assert that medical equipment repair “is dominated by OEMs who use . . . TPMs to hinder competition by

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<sup>1256</sup> Philips Class 12 Opp’n at 17.

<sup>1257</sup> MITA Class 12 Opp’n at 3

<sup>1258</sup> AdvaMed Class 12 Opp’n at 11.

<sup>1259</sup> Transtate Class 12 Reply at 9

<sup>1260</sup> See 2018 Recommendation at 203 (quoting Software Study at 40).

<sup>1261</sup> Indeed, one opponent acknowledges that “there is no independent market for the medical imaging device software beyond the devices themselves,” though also comments that the market for medical devices and integrated software together will be harmed by “loss of public confidence in the safety and efficacy of medical imaging.” MITA Class 12 Opp’n at 4.

ISOs.”<sup>1262</sup> Proponents argue that OEMs charge higher prices and that medical service providers must spend more to service their equipment than if they were able to engage in self-repair or have an ISO perform repairs on their behalf.<sup>1263</sup> ISOs have asserted antitrust claims in litigation against OEMs, with mixed results.<sup>1264</sup> Opponents respond that the rulemaking process should not be used as “a means of regulating competitive markets or promoting commercial outcomes.”<sup>1265</sup> Consistent with the discussion above, the Register concludes that an exemption to facilitate repair of medical devices and systems could help to address the broader competitive concerns recently highlighted by the Executive Branch.<sup>1266</sup> This factor provides further support for the proposed exemption.

Opponents assert that the potential consequences of unauthorized circumvention on patient safety should factor into if not decisively tilt the analysis against an exemption. Opponents comment that “unauthorized ISOs” present an acute risk to patient safety because, unlike OEMs, these organizations are not obligated to adhere to FDA Quality System Regulation (QSR) requirements.<sup>1267</sup> AdvaMed comments that it is “aware of at least 281 adverse events . . . from 2012 to 2017 associated with third party servicing.”<sup>1268</sup> Opponents further warn that some ISOs cross the line from “servicing” into “remanufacturing,”<sup>1269</sup> which the FDA has said “can have a significant impact on the

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<sup>1262</sup> Transtate Class 12 Pet. at 4; *see* Summit Class 12 Initial at 3; Transtate Class 12 Reply at 6.

<sup>1263</sup> Summit Imaging Class 12 Initial at 3; Transtate Class 12 Pet. at 4; Transtate Class 12 Initial at 10 & Ex. 18 (Medical Equipment Maintenance Market Report); Tr. at 806:15–807:10 (Apr. 20, 2021) (Kerwin, IAMERS); *see also* FTC Report at 40.

<sup>1264</sup> *Compare Philips N. Am., LLC v. Summit Imaging Inc.*, Case No. C19-1745JLR, 2020 WL 6741966, at \*6-7 (W.D. Wash. Nov. 16, 2020) (dismissing ISO antitrust counterclaims against OEM for monopolization and attempted monopolization, including theories based on refusal to deal and essential facilities), *with* Jury Verdict, *Red Lion Medical Safety Inc. v. GE Co. Inc.*, 2:15-cv-00308 (E.D. Tex. Apr. 26, 2017), ECF No. 165 (jury verdict finding OEM liable for anticompetitive conduct relating to servicing of anesthesia machines).

<sup>1265</sup> *See, e.g.*, Philips Class 12 Opp’n at 7–8.

<sup>1266</sup> *See* Exec. Order No. 14,036 of July 9, 2021, 86 Fed. Reg. 36987, 36992 (July 14, 2021); FTC Report at 40.

<sup>1267</sup> *See* AdvaMed Class 12 Opp’n at 10–12; MITA Class 12 Opp’n at 5–7; Philips Class 12 Opp’n at 17–19; Tr. at 813:25–815:04 (Apr. 20, 2021) (Reed, ACT) (noting that cost savings from ISO repair can be attributed to ISOs not having to comply with FDA QSR requirements).

<sup>1268</sup> AdvaMed Class 12 Opp’n at 12–15 (providing illustrative examples of unauthorized servicing); Tr. at 813:18–24 (Apr. 20, 2021) (Reed, ACT) (commenting that 1% of adverse incidents attributable to ISO repair from the FDA’s 2017 Medical Device Review (“MDR”) amounted to “40 deaths, 294 serious injury, 38,50021 patients and/or operators exposed to potential harm”).

<sup>1269</sup> *See* AdvaMed Class 12 Opp’n at 13; MITA Class 12 Opp’n at 3–5, 19–36.

safety and effectiveness of the device.”<sup>1270</sup> Opponents also assert that expanding access to medical devices and systems has the potential to introduce security vulnerabilities to the device and any facility network to which the device is connected.<sup>1271</sup>

As noted above, the Register generally does not consider other regulatory schemes as part of the adverse effects analysis because the focus of this proceeding is on copyright-related considerations. The Register notes, however, that the FDA submitted comments in this proceeding highlighting a 2018 report in which it “determined that the available evidence was insufficient to conclude whether or not there is a widespread public health concern relating to medical device servicing” and “did not justify imposing additional regulatory requirements on ISOs.”<sup>1272</sup> With respect to opponents’ concern about device “remanufacturing,” the Register again notes that “modification” is not part of the proposed exemption for medical devices; rather, the exemption requires the device to be restored to normal functionality and no changes be made to the firmware.<sup>1273</sup>

Accordingly, opponents’ concerns, while significant, do not provide a basis for denying the requested exemption.

After weighing the statutory factors, the Register concludes that the prohibition on circumvention of TPMs is causing, or is likely to cause, an adverse impact on the noninfringing diagnosis, repair, and maintenance of medical devices and systems.

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<sup>1270</sup> U.S. FOOD AND DRUG ADMIN., FDA REPORT ON THE QUALITY, SAFETY, AND EFFECTIVENESS OF SERVICING OF MEDICAL DEVICES 24 (May 2018), <https://www.fda.gov/media/113431/download> (“2018 FDA Report”).

<sup>1271</sup> See AdvaMed Class 12 Opp’n at 5–6; MITA Class 12 Opp’n at 5; Philips Class 12 Opp’n at 2, 18–19.

<sup>1272</sup> Letter from Suzanne B. Schwartz, Dir., Office of Strategic P’ships & Tech. Innovation, FDA, to Kevin R. Amer, Acting Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 3 (Aug. 13, 2021) (citing 2018 FDA Report at 23); see also *id.* at 3 (Aug. 13, 2021) (citing U.S. FOOD & DRUG ADMIN., STRENGTHENING CYBERSECURITY PRACTICES ASSOCIATED WITH SERVICING OF MEDICAL DEVICES: CHALLENGES AND OPPORTUNITIES (June 2021), <https://www.fda.gov/media/150144/download>) (noting the FDA’s views that “[ISOs] may be well positioned to help identify and address security vulnerabilities” and that circumvention for repair-related purposes would not “necessarily and materially jeopardize the safety and effectiveness of medical devices in the United States with respect to cybersecurity”).

<sup>1273</sup> See Tr. at 819:10–822:07 (Apr. 20, 2021) (Bartelt, U.S. Copyright Office; Wiens, Repair Ass’n; Kerwin, IAMERS) (discussing how medical devices would be restored to compliance with OEM specifications); Tr. at 828:04–07 (Apr. 20, 2021) (Inacker, Transtate) (“[F]or a medical device, after TPM circumvention, the data remains on the device. The software remains intact. The device is left in its original state after the repair is complete.”).



*iv. Third-party assistance and tools*

Finally, a number of participants submitted comments addressing issues with third-party assistance and access to tools in furtherance of the proposed uses.<sup>1274</sup> These issues have been addressed in previous recommendations, the NPRM to this rulemaking, and Office policy studies.<sup>1275</sup> Because the legal circumstances have not materially changed, the Register adheres to the views expressed in the 2018 Recommendation and reiterated in the NPRM.<sup>1276</sup> Consistent with these views, and cognizant that the Librarian's authority under the statute to grant exemptions to the anti-circumvention provisions does not extend to the anti-trafficking provisions, the Register does not recommend modifying any language relating to third-party assistance or provision of tools.<sup>1277</sup>

### 3. NTIA Comments

NTIA recommends expanding the current exemptions for vehicles and certain devices by merging them into a single exemption that would permit circumvention “for the diagnosis, maintenance, and repair of all software-enabled devices, machines, and systems.”<sup>1278</sup> In addition, NTIA recommends allowing “lawful modification that is necessary for a repair or maintenance” and “modifications of software regarding the functionality of a device,” machine, or system.<sup>1279</sup> Concerning the scope of the class, NTIA observes that “in contrast to the record developed in 2018, . . . the current record reflects that all such devices share critical features with regard to repair.”<sup>1280</sup> NTIA

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<sup>1274</sup> See FSF Class 12 Initial at 1–2; iFixit & Repair Ass’n Class 12 Initial at 17–18; Summit Imaging Class 12 Initial at 4, 7; Transtate Class 12 Initial at 20–21; ACT Class 12 Opp’n at 6; AdvaMed Class 12 Opp’n at 12; Auto Innovators Class 12 Opp’n at 2–6; EDA & AED Class 12 Opp’n at 6–7, 12; Joint Creators Class 12 Opp’n at 4 n.9; Philips Class 12 Opp’n at 10, 15, 19 n.75; ACA Class 12 Reply at 1–3; AFBF Class 12 Reply at 4–6; EFF Class 12 Reply at 9–11; iFixit & Repair Ass’n Class 12 Reply at 9–10; MEMA Class 12 Reply at 2–7; Transtate Class 12 Reply at 7–9; Tr. at 769:11–24, 810:02–22, 831:22–832:16, 845:01–12 (Apr. 20, 2021) (McHargue, AFBF); Tr. at 840:19–842:19 (Apr. 20, 2021) (Rosenbaum, Auto Innovators); Tr. at 856:23–846:04 (Apr. 20, 2021) (Sheehan, iFixit); Tr. at 848:05–13 (Apr. 20, 2021) (Williams, Joint Creators); Tr. at 937:02–938:14 (Apr. 21, 2021) (Cade, Neb. Farm Bureau).

<sup>1275</sup> See NPRM at 65,299–300; 2018 Recommendation at 222–26; 2015 Recommendation at 239, 246–47; Section 1201 Report at 52–62; Software Study at 32–33, 36–38.

<sup>1276</sup> See NPRM at 65,300; 2018 Recommendation at 222–26.

<sup>1277</sup> The Office has expressed support for a statutory change to facilitate the provision of assistance to exemption beneficiaries in appropriate circumstances. See Section 1201 Report at 59–60.

<sup>1278</sup> NTIA Letter at 76, 84.

<sup>1279</sup> *Id.* at 76, 84.

<sup>1280</sup> *Id.* at 77; see also *id.* at 79 (noting examples provided by proponents of TPMs “curtailing repair or modification by entities other than the OEM or its authorized agents”).

concludes that the proposed uses of these devices are fair uses as well as noninfringing under sections 117(a) and 117(c).<sup>1281</sup> It finds opponents' piracy-related arguments unpersuasive because the exemption would not permit "unlawfully accessing or copying specific content."<sup>1282</sup> For similar reasons, NTIA suggests that the exemption should not make compliance with other applicable laws a condition of the exemption and "instead recommends adding an appropriate notice in the regulatory text."<sup>1283</sup>

The Register largely agrees with NTIA's support for expanding the exemptions to cover a broader swath of software-enabled devices and systems. But, as noted above, while many devices share commonalities, the Register observes distinctions in the present record among the various proposals and the types of devices, which warrant separate analyses and determinations. In addition, for the reasons explained above, the Register does not conclude that "modification" as a general matter is noninfringing.

Addressing third party assistance, NTIA recommends that the exemption expressly apply to both the device "owner" as well as "a third party authorized by the owner."<sup>1284</sup> In support, NTIA observes that this change would address harm arising from anticompetitive restrictions, as addressed in the Executive Order and FTC report discussed above.<sup>1285</sup> As noted, the Register finds that these Executive Branch initiatives constitute an additional factor favoring an exemption for repair-related activities. The Register, however, declines to recommend express language regarding third-party assistance because the legal circumstances concerning "whether vehicle or other repair services may run afoul of the anti-trafficking provisions when engaging in circumvention on behalf of customers" have not materially changed since 2018.<sup>1286</sup>

#### 4. Conclusion and Recommendation

After thorough consideration, the Office recommends expanding the two current exemptions for vehicle and device repair, and adding a third exemption specifically for medical device and system repair.

First, in recognition of the commonalities among uses and users across a diversity of software-enabled devices, the Register recommends expanding the exemption for certain

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<sup>1281</sup> See NTIA Letter at 80–82.

<sup>1282</sup> *Id.* at 83–84.

<sup>1283</sup> *Id.* at 82–84 (finding opponents' safety and privacy concerns unpersuasive).

<sup>1284</sup> *Id.* at 84.

<sup>1285</sup> *Id.* at 78 (citing Exec. Order No. 14,036 of July 9, 2021, 86 Fed. Reg. 36987 (July 14, 2021); FTC Report at 3, 6, 40); see also *id.* at 83 (finding opponents' safety concerns about third-party repair unpersuasive).

<sup>1286</sup> 2018 Recommendation at 225.

categories of devices to cover diagnosis, maintenance, and repair of any lawfully acquired device that is primarily designed for use by consumers. To address opponents' concerns that the exemption not be misused to gain unauthorized access to other copyrighted works beyond the device firmware, the Register carries forward the requirement that the circumvention is "not accomplished for the purpose of gaining access to other copyrighted works," as well as the existing definitions of "maintenance" and "repair."

With respect to video game consoles, the recommended exemption is limited to one specific type of repair—namely, repair of optical drives. To be clear, if a console does not contain an optical drive, it is not eligible under this exemption; and if circumvention is done to repair any part of a console other than the optical drive, that activity too falls outside the scope of the exemption. Narrowing the exemption for consoles in this manner appropriately balances the specific adverse effects experienced by users against opponents' legitimate concerns over links between console circumvention and piracy.

Second, the Register recommends that the existing exemption for land vehicles be expanded to cover marine vessels.

Finally, the Register recommends a new exemption allowing circumvention of TPMs restricting access to firmware and servicing materials on medical devices and systems for the purposes of diagnosis, maintenance, and repair. Like the consumer device exemption, the Register incorporates the definitions of "maintenance" and "repair" from section 117 into the proposal.

Accordingly, the Register recommends that the Librarian designate the following classes:

**(1) Computer programs that are contained in and control the functioning of a lawfully acquired motorized land vehicle or marine vessel such as a personal automobile or boat, commercial vehicle or vessel, or mechanized agricultural vehicle or vessel, except for programs accessed through a separate subscription service, when circumvention is a necessary step to allow the diagnosis, repair, or lawful modification of a vehicle or vessel function, where such circumvention is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. Eligibility for this exemption is not a safe harbor from, or defense to, liability under other applicable laws, including without limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency.**

**(2) Computer programs that are contained in and control the functioning of a lawfully acquired device that is primarily designed for use by consumers, when circumvention is a necessary step to allow the diagnosis, maintenance,**

or repair of such a device, and is not accomplished for the purpose of gaining access to other copyrighted works. For purposes of this paragraph (b)(14):

(i) The “maintenance” of a device is the servicing of the device in order to make it work in accordance with its original specifications and any changes to those specifications authorized for that device; and

(ii) The “repair” of a device is the restoring of the device to the state of working in accordance with its original specifications and any changes to those specifications authorized for that device. For video game consoles, “repair” is limited to repair or replacement of a console’s optical drive and requires restoring any technological protection measures that were circumvented or disabled.

(3) Computer programs that are contained in and control the functioning of a lawfully acquired medical device or system, and related data files, when circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device or system. For purposes of this paragraph (b)(15):

(i) The “maintenance” of a device or system is the servicing of the device or system in order to make it work in accordance with its original specifications and any changes to those specifications authorized for that device or system; and

(ii) The “repair” of a device or system is the restoring of the device or system to the state of working in accordance with its original specifications and any changes to those specifications authorized for that device or system.

*M. Proposed Class 13: Computer Programs—Security Research*

**1. Background**

**a. Summary of Proposed Exemption**

Proponents seek to expand a current exemption that permits the circumvention of access controls on computer programs for good-faith security research. The current exemption language encompasses:

(i) Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates, or is undertaken on a computer, computer system, or computer network on which the computer program operates with the authorization of the owner or operator of such computer, computer system, or computer network, 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.

(ii) For purposes of this paragraph (b)(11), “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 an 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.<sup>1287</sup>

Professor J. Alex Halderman, CDT, and U.S. Technology Policy Committee of the Association for Computing Machinery (“Halderman et al.”) filed a petition to eliminate several limitations in the existing exemption.<sup>1288</sup> These include the phrases “solely for the purpose of,” “the information derived from the activity is used primarily to promote the security or safety of,” and “not used or maintained in a manner that facilitates copyright infringement.” They also seek to eliminate the requirement that circumvention be limited to that conducted on a “lawfully acquired device or machine,” and that circumvention “not violate any applicable law.”<sup>1289</sup> SFC also filed a petition seeking to make explicit that the good-faith security research exemption covers “privacy issues (including flaws or functionality)” and to “permit[] the owner of the device to

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<sup>1287</sup> 37 C.F.R. § 201.40(b)(11).

<sup>1288</sup> Halderman et al. Class 13 Pet. at 3.

<sup>1289</sup> *Id.*

remove software or disable functionality that may expose personal information.”<sup>1290</sup> Comments supporting some form of the proposed expansions or clarification were filed by FSF, HackerOne, Rapid7, Consumer Reports, and GitHub. Comments opposing the proposed expansions or clarification were filed by ACT, BSA, DVD CCA and AACCS LA, Joint Creators, MEMA, and SIIA.

For the reasons discussed below, the Register recommends that the proposed exemption be granted in part and denied in part.

### **b. Overview of Issues**

Class 13 proponents generally observe that “security research plays a vital role in our cybersecurity architecture.”<sup>1291</sup> They argue that security research benefits the public by enabling researchers “to uncover security flaws and vulnerabilities and then alert consumers and notify companies of such concerns, and to develop new, secure versions of computer programs and software.”<sup>1292</sup> They also argue that, in some cases, researchers have declined to pursue beneficial security research, or have not reported their findings, due to fear of liability.<sup>1293</sup> Opponents of the proposed expansion, though agreeing that “[s]ecurity research is a critical and necessary part of innovation in digital products and services,” argue that the existing exemption is sufficient.<sup>1294</sup>

In the 2018 rulemaking, the Acting Register considered petitions to remove several of the limitations in the 2015 exemption, including expanding the exemption to software-enabled devices generally.<sup>1295</sup> The 2015 exemption had limited security research to specific categories of devices.<sup>1296</sup> In the 2018 proceeding, proponents argued that the

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<sup>1290</sup> SFC Class 13 Pet. at 2.

<sup>1291</sup> Halderman et al. Class 13 Reply at 5 (citing Halderman et al. Class 13 Initial at 8–11; HackerOne Class 13 Initial at 2; ACT Class 13 Opp’n at 3).

<sup>1292</sup> Halderman et al. Class 13 Pet. at 3. *See also* HackerOne Class 13 Initial at 2 (discussing “over 150,000 vulnerabilities” that have been found through security research); Halderman et al. Class 13 Initial at 33 (“Good-faith security research and testing are matters of national security policy.”); GitHub Class 13 Reply at 2 (“Important security work is done by all kinds of developers.”).

<sup>1293</sup> *See* HackerOne Class 13 Initial at 2 (“Nearly two-thirds of hackers say they have found bugs and chosen not to report them to the organization. Thirty-eight percent of hackers said this was due to ‘threatening legal language’ posted on the organization’s website regarding the discovery of potential vulnerabilities.”); Halderman et al. Class 13 Initial at 10.

<sup>1294</sup> ACT Class 13 Opp’n at 2.

<sup>1295</sup> *See* 2018 Recommendation at 283–84.

<sup>1296</sup> The 2015 exemption had been limited to (1) devices or machines primarily designed for use by individual consumers (including voting machines); (2) motorized land vehicles; and (3) medical

device limitations harmed security research by excluding a variety of software-enabled devices and systems in which there is a legitimate research interest. In the end, the Acting Register agreed that the device limitations should be removed, and also revised some of the language of the exemption to better track the statutory exemption for security testing in section 1201(j), including to allow circumvention to be undertaken on a “computer, computer system, or computer network on which the computer program operates” and “with the authorization of the owner or operator of such computer, computer system, or computer network.”<sup>1297</sup> The Acting Register declined to recommend the other proposed changes, concluding that the proponents had failed to demonstrate that they were adversely affected by the exemption’s limitations.

Class 13 proponents again request removal of these provisions. They generally argue that the existing exemption, though beneficial to security researchers, remains unclear as to whether certain research activities will in fact be free from liability under section 1201.<sup>1298</sup> Specifically, Halderman et al. point to provisions referred to as the “Access Limitation,”<sup>1299</sup> the “Use Limitation,”<sup>1300</sup> the “Lawfully Acquired Limitation,”<sup>1301</sup> and the “Other Laws Limitation.”<sup>1302</sup> They argue that the Librarian should remove each of these limitations in order “[t]o guarantee that researchers can continue to engage in beneficial,

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devices designed for whole or partial implantation in patients, as well as corresponding personal monitoring systems. *See* 2015 Recommendation at 319–20.

<sup>1297</sup> 2018 Recommendation at 313–14.

<sup>1298</sup> Halderman et al. Class 13 Initial at 4.

<sup>1299</sup> Halderman et al. Class 13 Initial at 5 (“The Purpose Limitation cabins the exemption to circumvention undertaken ‘solely for the purpose of good-faith security research,’ and that limit good-faith security research to accessing a computer program ‘solely for purposes of good faith testing, investigation and/or correction of a security flaw or vulnerability.’”).

<sup>1300</sup> *Id.* (requiring that “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”).

<sup>1301</sup> *Id.* (requiring that “circumvention be undertaken on a ‘lawfully acquired device or machine on which the computer program operates, or is undertaken on a computer, computer system, or computer network on which the computer program operates with the authorization of the owner or operator of such computer, computer system, or computer network’”).

<sup>1302</sup> *Id.* (requiring that “researchers ‘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’”).

noninfringing good-faith security research, and simplify the process for evaluating alleged violations.”<sup>1303</sup>

SFC expressed support for many of the arguments of Halderman et al.,<sup>1304</sup> but SFC’s petition and written comments solely address privacy-related research. SFC expresses concern that the existing security research exemption “does not protect the full gamut of socially valuable privacy research” and provides several examples that it thought would not be covered by the security research exemption.<sup>1305</sup> These include “installing legitimately obtained software on devices for the purpose of evaluating the device’s functionality, de-obfuscating and decompiling code in order to study it, and accessing protected memory spaces to evaluate the software within.”<sup>1306</sup> Accordingly, SFC requests that the Office recommend expanding the exemption to explicitly protect privacy research.

Opponents generally argue that the current limitations have enabled good-faith security research, that proponents did not demonstrate a sufficient basis for removing the limitations, and that the limitations should be retained as “common-sense ways of tailoring the exemption to attempt to cover only legitimate conduct.”<sup>1307</sup> Joint Creators, for example, argue that the existing temporary exemption, which it did not oppose, and section 1201(j) “already provide the shields from liability that legitimate researchers need to circumvent access controls to conduct security testing.”<sup>1308</sup> Similarly, BSA argues that despite supporting renewal of the existing exemption, with the limitation as recommended by the Acting Register and adopted by the Librarian in 2018, BSA is concerned that the Halderman et al. petition “seeks to eliminate *all* of these critical safeguards.”<sup>1309</sup>

## 2. Discussion

The Office begins by discussing the SFC petition. SFC requested that the Register clarify that the existing exemption “includes good-faith testing, investigation, and/or correction of privacy issues (including flaws or functionality that may expose personal

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<sup>1303</sup> Halderman et al. Class 13 Initial at 4. *See also* FSF Class 13 Initial at 2; HackerOne Class 13 Initial at 3–5; GitHub Class 13 Reply at 2–3. Rapid7 supports a portion of Halderman et al.’s petition, recommending that the exemption be expanded “to strike the ‘any applicable law’ provision, and clarify the ‘used or maintained’ provision.” Rapid7 Class 13 Initial at 2.

<sup>1304</sup> *See, e.g.*, Tr. at 463:11–464:14, 505:07–20 (Apr. 8, 2021) (Williamson, SFC).

<sup>1305</sup> SFC Class 13 Initial at 2–4.

<sup>1306</sup> *Id.* at 3.

<sup>1307</sup> Joint Creators Class 13 Opp’n at 3. *See also* ACT Class 13 Opp’n at 2.

<sup>1308</sup> Joint Creators Class 13 Opp’n at 2.

<sup>1309</sup> BSA Class 13 Opp’n at 2.



information) and permits the owner of the device to remove software or disable functionality that may expose personal information.”<sup>1310</sup> In its initial comments, SFC noted that “17 USC § 1201(i) addresses such end-user mitigations and is the more appropriate focus of any proposed expansion to those protections,” and suggested that the Office recommend legislation to revise section 1201(i).<sup>1311</sup> In reply comments and hearing testimony, petitioner SFC dropped its request for the expanded exemption to cover “disabling of functionalities.”<sup>1312</sup>

What remains of SFC’s petition is the request that the security research exemption be expanded to address privacy-related security research. In public comments, both the Computer Crime and Intellectual Property Section (CCIPS) at the Department of Justice and the cybersecurity and data analytics company Rapid7 opposed expanding the exemption to include privacy-related security research because, they both argued, the current exemption already covers such privacy-related security research.<sup>1313</sup> As Rapid7 noted, “[e]xposure of personal or sensitive information is a common security risk, and the object of many instances of security research is the discovery of flaws or functionality that may result in exposure of personal or sensitive information.”<sup>1314</sup> At the public hearing, SFC stated that it sees no need for expanding the exemption provided that the Register clarifies in her Recommendation that privacy-related security research is already covered.<sup>1315</sup> Opponents were asked if any disagreed with this understanding of the current exemption, and none voiced an objection.

In a post-hearing letter, the Office noted the apparent agreement among participants that SFC’s concerns could be addressed through a clarifying statement in the Recommendation rather than through a revision of the regulatory text. The Office requested that participants submit a joint letter confirming this understanding, or, if any disagreed, that they separately submit letters setting out any disagreements and proposing regulatory language to resolve the issue. All participants conferred, and all except for SIIA and Joint Creators signed a letter stating their shared view that “the existing exemption covers testing, investigating, and correcting security flaws or

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<sup>1310</sup> SFC Class 13 Pet. at 2.

<sup>1311</sup> SFC Class 13 Initial at 2.

<sup>1312</sup> See SFC Class 13 Reply at 4; Tr. at 516–17 (Apr. 8, 2021) (Williamson, SFC).

<sup>1313</sup> Rapid7 Class 13 Initial at 7–8 (“Deliberate but inadequate measures to delete or minimize personal or sensitive information is another security vulnerability with privacy implications. Security researchers widely recognize that the concept of ‘good faith research’ encompasses testing and investigation of such flaws to prevent exposure of personal or sensitive data.”); CCIPS Class 13 Reply at 5–6.

<sup>1314</sup> Rapid7 Class 13 Initial at 7.

<sup>1315</sup> Tr. at 517:13–16 (Apr. 8, 2021) (Williamson, SFC).

vulnerabilities comprising or related to the unauthorized disclosure or collection of personal information.”<sup>1316</sup> Neither SIIA nor Joint Creators submitted a separate letter.

The Office notes that the current exemption defines the limits of what can be researched broadly, covering “good-faith testing, investigation, and/or correction of a security flaw or vulnerability.”<sup>1317</sup> The exemption is not limited to specific subjects or issues within security flaws or vulnerabilities. Moreover, the exemption does not draw a distinction between vulnerabilities that the copyright owner authorized and those that were unauthorized. As Rapid7 noted, “deliberate design choices, such as weak default passwords or unencrypted communication channels, may result in exposure of personal information that creates security and privacy risks for device users.”<sup>1318</sup> Thus, the Register concludes that the existing exemption includes “testing, investigation, and/or correction of privacy issues (including flaws or functionality that may expose personal information)” within the scope of good-faith security research.<sup>1319</sup> Accordingly, expanding the exemption to expressly cover such research is unnecessary. The Register therefore does not recommend altering the current regulatory language to address this issue.

The Office turns now to the Halderman et al. petition. The proposal would remove several limitations from the security research exemption that proponents claim hinder good-faith security research by creating uncertainty about covered activities.

#### **a. Works Protected by Copyright**

The proposed class involves computer programs. There is no dispute among participants that these are copyright-protected works. Accordingly, the Register again finds that at least some works included in the proposed expanded class are protected by copyright.

#### **b. Asserted Noninfringing Uses**

The 2018 rulemaking identified fair use as the basis for finding good-faith security research to be likely noninfringing. As support for the proposed expansion, proponents argue that most security research involving computer programs does not implicate copyright law, but that when it does, the security research is a fair use.<sup>1320</sup> Accordingly, the proposed expansion is evaluated on this basis. In considering this issue, the Office notes that many of the proponents’ fair use arguments were evaluated, and accepted, by

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<sup>1316</sup> Joint Class 13 Post-Hearing Resp. at 1 (May 14, 2021).

<sup>1317</sup> 37 C.F.R. § 201.40(b)(11).

<sup>1318</sup> Rapid7 Class 13 Initial at 7.

<sup>1319</sup> See SFC Class 13 Initial at 2.

<sup>1320</sup> See Halderman et al. Class 13 Initial at 13–17.

the Acting Register in the 2018 rulemaking when recommending removal of the device limitation. In this proceeding, opponents did not respond to proponents' fair use arguments or dispute that the proposed uses are noninfringing; rather, opponents primarily argue that petitioners have failed to demonstrate adverse effects arising from the exemption language at issue. Though no opposition comments addressed fair use, the Register has an independent obligation to ensure that the proposed uses are likely to be noninfringing.

Overall, given that the security research industry's needs and practices with regard to software-enabled devices are much the same as they were in 2018, and that the case law likewise has not significantly altered the fair use analysis, the Register evaluates fair use in much the same way. Accordingly, the Register concludes that the proposed uses are likely to be a fair use.

*i. No Prima Facie Infringement*

Noting that the Register concluded in the past two rulemakings that "the computer programs at issue . . . are 'likely to fall on the functional rather than creative end of the spectrum,'" <sup>1321</sup> proponents assert that much good-faith security research is noninfringing because it deals with unprotectable elements of copyrighted computer programs. <sup>1322</sup> In support, proponents rely on *Sega* and *Connectix*, in which the Ninth Circuit noted that characteristics of computer programs can cut in favor of fair use. <sup>1323</sup> Those cases did not, however, announce a general principle that some elements of a computer program, such as object code, are not protected by copyright at all. Indeed, the court explicitly concluded that object code is protected by copyright. <sup>1324</sup> Moreover, even if proponents' argument were supported by case law, it would not cover all intended uses of the proposed exemption. Accordingly, proponents must provide an additional legal basis to support a finding that the proposed covered uses likely are noninfringing.

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<sup>1321</sup> *Id.* at 14 (quoting 2018 Recommendation at 296).

<sup>1322</sup> *Id.* at 13–14.

<sup>1323</sup> See *Sony v. Connectix*, 203 F.3d 596, 602 (9th Cir. 2000); *Sega v. Accolade*, 977 F.2d 1510, 519–20 (9th Cir. 1992), as amended (Jan. 6, 1993).

<sup>1324</sup> See *Connectix*, 203 F.3d at 602; *Sega*, 977 F.2d at 519–20. The recent Supreme Court decision in *Google LLC v. Oracle Am., Inc.* is not to the contrary. 141 S. Ct. 1183, 1197 (2021) (assuming but not deciding copyrightability of software at issue). Moreover, even though, as the Register has previously observed, computer programs are functional, it is not a given that even the second fair use factor (nature of the work) will weigh in favor of fair use. See, e.g., *Wall Data Inc. v. L.A. County Sheriff's Dep't*, 447 F.3d 769, 780 (9th Cir. 2006); *Cable/Home Commc'n Corp. v. Network Prods., Inc.*, 902 F.2d 829, 844 (11th Cir. 1990).

*ii. Fair Use*

The Register concluded in 2015 that it was likely a fair use to conduct security research on computer programs in three categories of devices: devices primarily designed for use by individual consumers (including voting machines); motorized land vehicles; and medical devices designed for whole or partial implantation in patients and corresponding personal monitoring systems.<sup>1325</sup> The Register found that the relevant uses “are likely to be transformative, including copying the work to perform testing and research;”<sup>1326</sup> that the device-controlling software at issue was likely to be largely functional in nature;<sup>1327</sup> that though reproduction of the computer program was likely to be substantial, which typically weighs against fair use, “the weight to be given to it under the circumstances is slight;”<sup>1328</sup> and “that any market harm resulting from independent researchers would be due to potential criticism resulting from the research, which is not considered a cognizable harm under” the fair use doctrine.<sup>1329</sup> In 2018, the Acting Register concluded that the analysis applied in much the same way to non-consumer devices in expanding the exemption to cover all software programs.<sup>1330</sup>

In support of the current proposed exemption, proponents contend that “the intended uses that the modifications would enable do not differ in any way material to the question of infringement” from the good-faith security research that the Office has previously found to be noninfringing.<sup>1331</sup>

Regarding the first fair use factor, the purpose and character of the use, proponents note that the Acting Register previously concluded that “many of the activities involved in security research are likely to be transformative . . . and do not ‘merely supersede[] the objects of the original creation.’”<sup>1332</sup> Proponents argue that “[n]one of the proposed modifications to the current exemption would materially affect the first factor analysis.”<sup>1333</sup> They further argue that removing the limitations “would merely eliminate the uncertainty” and “ensure that security researchers would not be chilled as they

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<sup>1325</sup> 2015 Recommendation at 300.

<sup>1326</sup> *Id.*

<sup>1327</sup> *Id.* at 301.

<sup>1328</sup> *Id.*

<sup>1329</sup> *Id.* at 302.

<sup>1330</sup> *See* 2018 Recommendation at 294–98.

<sup>1331</sup> Halderman et al. Class 13 Initial at 12 (citing 2015 Recommendation at 300).

<sup>1332</sup> *Id.* at 15 (quoting 2018 Recommendation at 294) (citing NPRM at 65,300–01) (internal quotation marks omitted).

<sup>1333</sup> Halderman et al. Class 13 Initial at 15.

engage in scientific dialogue, classroom teaching and other scholarship, activities long established in Section 107 to be transformative in nature.”<sup>1334</sup>

To the extent that the proposed expansions seek to facilitate scientific dialogue, teaching, and scholarship, the Register finds that the first fair use factor continues to weigh in favor of fair use for the proposed class of security research. As discussed below with respect to adverse effects, these uses are not materially different from those covered by the existing exemption. Consistent with the Office’s determinations in 2018 and 2015, the Register concludes that the proposed uses are likely to be transformative and do not merely substitute for the value of the copyrighted works.

For the second fair use factor, the nature of the underlying work, proponents note that in 2018 the Acting Register found that the covered uses were “focused on programs used to operate machines, devices, or systems” that “are likely to fall on the functional rather than creative end of the spectrum.”<sup>1335</sup> Proponents contend that the proposed uses under the expanded exemption “do not expand the realm of underlying programs subject to research” or “change the type or character of program subject to research.”<sup>1336</sup> The Register agrees that the second factor continues to favor fair use. Nothing in the record suggests that proponents seek to access copyrighted works of a different nature than those covered by the current exemption.

Regarding the third fair use factor, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, proponents note that the Acting Register in 2018 found that this factor did not weigh against fair use even though researchers may reproduce the entire computer program.<sup>1337</sup> Specifically, the Acting Register found that “[c]ourts have been willing to permit complete copying of the original work . . . where it is necessary to accomplish a transformative purpose” and stated that this factor is “not accorded significant weight where functional elements of a program cannot be investigated without some intermediate reproduction.”<sup>1338</sup> Again, proponents contend that the proposed expansion would not change this analysis and further claim that “[p]ublication of security research rarely contains any substantial portions of the original work.”<sup>1339</sup>

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<sup>1334</sup> *Id.*

<sup>1335</sup> *Id.* at 15–16 (quoting 2018 Recommendation at 295–96) (citing NPRM at 65,300–01).

<sup>1336</sup> *Id.* at 16.

<sup>1337</sup> *Id.* (citing 2018 Recommendation at 296).

<sup>1338</sup> 2018 Recommendation at 296 (alteration in original) (quoting and citing 2015 Recommendation at 301).

<sup>1339</sup> Halderman et al. Class 13 Initial at 16 (citing 2018 Felten & Halderman Class 10 Initial at 16).

The Register concludes that the third factor remains neutral as to the expanded exemption, as the analysis remains substantially the same as in 2018. Though the intended use is likely to reproduce a substantial portion, if not all, of the computer program as an intermediate step to security research, it is unlikely to use more than what is necessary for the research. Thus, the intended use is of a kind that courts have said does not significantly weigh against a finding of fair use.<sup>1340</sup>

For the fourth fair use factor, effect on the relevant market, proponents note that the Acting Register in 2018 also found that this factor favored fair use. They highlight the Acting Register's statements that opponents may not merely raise speculative concerns but rather need to identify a cognizable market harm, and that "customers being scare[d] . . . away from software providers due to vulnerabilities being exposed is precisely the type of reputational harm that the courts have held non-cognizable under the fourth factor."<sup>1341</sup>

Proponents, however, contend that the Acting Register "wrongly concluded" that the Lawfully Acquired Limitation plays a role in the fourth factor analysis.<sup>1342</sup> The limitation requires that good-faith security research be conducted on a lawfully-obtained device or machine, or on a computer, computer system, or computer network on which the computer program operates with the authorization of the owner or operator.<sup>1343</sup> Halderman et al. argue that "[t]he purpose of the market factor analysis is to protect real markets cognizable under copyright," and "consistency with other non-copyright law is not a relevant consideration toward whether security research on the software is infringing."<sup>1344</sup> Accordingly, they argue, the fourth factor would still favor fair use even if the Lawfully Acquired Limitation were removed from the security research exemption.

The Register rejects Halderman et al.'s argument that the Lawfully Acquired Limitation is irrelevant to the fair use analysis. As the Acting Register said in 2018 in retaining this limitation, "acquiring a device in violation of law would weigh heavily against a fair use finding, as it plainly is conduct that, were it to become widespread, would adversely affect the software copyright owner's potential market."<sup>1345</sup> Proponents have offered no persuasive legal or factual grounds for departing from that conclusion. The Register

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<sup>1340</sup> See 2018 Recommendation at 296.

<sup>1341</sup> Halderman et al. Class 13 Initial at 16–17 (alteration in original) (quoting 2018 Recommendation at 298) (citing NPRM at 65,300–01) (internal quotation marks omitted).

<sup>1342</sup> *Id.* at 17.

<sup>1343</sup> 37 C.F.R. § 201.40(b)(11)(i).

<sup>1344</sup> Halderman et al. Class 13 Initial at 17.

<sup>1345</sup> 2018 Recommendation at 298 (citing *Campbell v. Acuff-Rose Music*, 510 U.S. 569, 590 (1994)).

addresses proponents' specific concerns about the effect of the Lawfully Acquired Limitation in the discussion of potential adverse effects below.

Subject to this limitation, the Register again concludes that the fourth factor favors a finding of fair use. As in the two previous proceedings, the record contains no evidence that good-faith security research involving lawfully acquired devices or systems has, or will, supplant the market for computer programs. To the extent that vulnerabilities found through good-faith security research may hurt a copyright owner's reputation or discourage consumer activity, such a harm is not cognizable under copyright law.<sup>1346</sup>

After considering the arguments and the record in this class, the Register agrees with proponents that the intended uses do not materially alter the fair use analysis. Insofar as the proposed expansions relate to teaching and scholarship involving good-faith security research, the Register concludes that the activities are likely to constitute fair use.

### c. Causation

The Register has previously concluded that the prohibition on circumvention of access controls limits the ability of computer security researchers to make the noninfringing uses described above. During this proceeding, opponents of the proposed expansion have argued that proponents ignore ways in which computer programs may be available for good-faith security research despite TPMs. Opponents give the example of the "bug bounty" programs that software companies employ to incentivize individuals to identify and report flaws in their software.<sup>1347</sup> These programs, however, are limited in scope, and generally permit circumvention only in circumstances that the copyright owner approves. Proponent HackerOne reported a recent survey in which about two-thirds of hackers said that "they have found bugs and chosen not to report them to the organization," with about half attributing the lack of reporting to "threatening legal language" on the organization's website.<sup>1348</sup> Accordingly, the Register again concludes that the prohibition on circumvention is the cause of researchers' inability to make noninfringing uses of the covered works.

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<sup>1346</sup> *Campbell*, 510 U.S. at 592.

<sup>1347</sup> See ACT Class 13 Opp'n at 3. Class 13 proponent HackerOne also stated that it "has partnered with more than 1,700 customer programs to help find over 150,000 vulnerabilities and award more than \$82 million in bug bounties." HackerOne Class 13 Initial at 2.

<sup>1348</sup> HackerOne Class 13 Initial at 2.

**d. Asserted Adverse Effects**

*i. Current Limitations*

Proponents generally assert that all the limitations in the current exemption have the effect of chilling beneficial security research by creating uncertainty for researchers.<sup>1349</sup> The record for most of the challenged limitations is not materially different than it was in the 2018 cycle, and as the Acting Register noted then, “speculation alone is insufficient to demonstrate a likely adverse effect.”<sup>1350</sup>

**Access Limitation.** Proponents contend that the Access Limitation—which limits circumvention to that undertaken “solely for the purpose of good-faith security research” and defines such research as accessing a computer “solely for purposes of good faith testing, investigation and/or correction of a security flaw or vulnerability”<sup>1351</sup>—creates uncertainty that “may unnecessarily chill activity undertaken for security research purposes.”<sup>1352</sup> They argue that “security researchers hack not just for testing, investigation, or correcting flaws or vulnerabilities, but for a host of other reasons too.”<sup>1353</sup> These “other valid purposes” purportedly include “testing their own skills or advancing the field.”<sup>1354</sup> HackerOne cites a survey it conducted in 2019–2020 of 3,150 respondents from more than 120 countries, that found various reasons hackers choose to hack, including “[t]o be challenged,” “[t]o do good in the world,” and “[t]o show off.”<sup>1355</sup> GitHub likewise argues that hackers may wear many hats and “[s]o long as their activity is consistent with undertaking good-faith security research, it should not matter if a specific step be ‘solely’ focused on security—it can and should embrace activities that lead to stable computing environments because stable computing systems are consistent with ensuring secure computing ecosystems.”<sup>1356</sup>

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<sup>1349</sup> See generally Halderman et al. Class 13 Initial. See also HackerOne Class 13 Initial at 5; GitHub Class 13 Reply at 4–5; SFC Class 13 Initial at 5.

<sup>1350</sup> 2018 Recommendation at 303 (citing 1201 Report at 28; 2012 Recommendation at 8).

<sup>1351</sup> 37 C.F.R § 201.40(b)(11)(i)–(ii). Proponents generally refer to this as the “purpose limitation,” but to maintain consistency with its treatment in the 2018 Recommendation, the Office refers to it as the “access limitation.”

<sup>1352</sup> GitHub Class 13 Reply at 4. See also SFC Class 13 Initial at 5 (“By putting essential research techniques in legal jeopardy, the prohibition chills beneficial privacy research.”).

<sup>1353</sup> HackerOne Class 13 Initial at 4 (citing HACKERONE, THE 2020 HACKER REPORT 35 (2020), <https://www.hackerone.com/resources/reporting/the-2020-hacker-report>).

<sup>1354</sup> Halderman et al. Class 13 Reply at 6 (citing HackerOne Class 13 Initial at 4).

<sup>1355</sup> HACKERONE, THE 2020 HACKER REPORT 35, 51 (2020), <https://www.hackerone.com/resources/reporting/the-2020-hacker-report>.

<sup>1356</sup> GitHub Class 13 Reply at 4.



Halderman et al. further contend that the Access Limitation discourages researchers from sharing their work or pushing the boundaries of their field because they may be conducting security research “for other valid purposes” that exceed the limitation.<sup>1357</sup> In their view, uncertainty over the definition of “solely” “allows for malicious litigation against security researchers who—in addition to disclosing the results of their research to software developers—also attempt to inform the public about dangerous vulnerabilities in software.”<sup>1358</sup>

Proponents rely heavily on *Green v. U.S. Department of Justice*, in which a security researcher challenged section 1201 on First Amendment grounds.<sup>1359</sup> They point to a 2019 ruling in which the district court held that plaintiff had adequately pleaded an “as applied” First Amendment challenge and that that portion of the complaint could survive a motion to dismiss.<sup>1360</sup>

Opponents counter that the proponents’ argument for removal relies on “an unreasonable interpretation of the [Access] Limitation.”<sup>1361</sup> In particular, opponents argue that “[t]here is no evidence indicating this language exposes researchers to malicious litigation when they seek to study, develop solutions to, or inform the public about dangerous vulnerabilities in software, to engage in scientific dialogue or implement protective measures, or engage in academic peer review, classroom teaching, or to publish updates to the security community.”<sup>1362</sup> They also contend that proponents “have merely presented the same arguments as they did before, and provided an implausible reading of preliminary motions in the *Green* case. None of this warrants the Register revisiting this issue yet again.”<sup>1363</sup> Additionally, opponents claim that removing the Access Limitation would facilitate copyright infringement.<sup>1364</sup>

As in the 2018 proceedings, the Register is not convinced that the Access Limitation creates a reasonable risk of chilling good-faith security research. In the 2018 Recommendation, the Office explained that “the Access Limitation is not properly read

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<sup>1357</sup> Halderman et al. Class 13 Reply at 5–9.

<sup>1358</sup> Halderman et al. Class 13 Initial at 18.

<sup>1359</sup> 392 F. Supp. 3d 68 (D.D.C. 2019).

<sup>1360</sup> *See id.*

<sup>1361</sup> BSA Class 13 Opp’n at 4.

<sup>1362</sup> Joint Creators Class 13 Opp’n at 4 (citing Halderman et al. Class 13 Initial at 18, 21–22). *See also* SIIA Class 13 Opp’n at 5 (“We are aware of no case that would prevent petitioners from being able to inform consumers that a system is insecure so they can protect themselves . . .”).

<sup>1363</sup> DVD CCA & AACS LA Class 13 Opp’n at 3.

<sup>1364</sup> *See, e.g.*, ACT Class 13 Opp’n at 3; Joint Creators Class 13 Opp’n at 5; SIIA Class 13 Opp’n at 2; DVD CCA & AACS LA Class 13 Opp’n at 3, 5.

to prohibit teaching, academic dialogue, or scholarship involving information derived from good-faith security research.”<sup>1365</sup> It noted that “[s]uch activities ordinarily are expected to follow from research, and therefore they easily fit within the meaning of the regulatory language when read in its proper context.”<sup>1366</sup> CCIPS likewise stated that neither “the DMCA [n]or the existing language of the security research exemption violate[] the First Amendment,” and thus the Access Limitation need not be removed.<sup>1367</sup> Nothing in the *Green* case alters that conclusion. In fact, in July 2021, the court denied the plaintiff’s motion for a preliminary injunction, holding that he failed to demonstrate a likelihood of success on his First Amendment argument.<sup>1368</sup>

As the Register has said before, speculation alone is insufficient to establish adverse effects on noninfringing uses.<sup>1369</sup> Absent specific evidence that the Access Limitation is likely to chill otherwise protected security research, the Register cannot conclude that that language is likely to cause an adverse effect. Accordingly, the Register will not recommend removal of that provision from the exemption.

**Use Limitation.** Proponents contend that the Use Limitation<sup>1370</sup> discourages security research by requiring that research be done “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.”<sup>1371</sup> They argue that this “add[s] confusion to researchers’ ability to engage in valuable public discourse concerning cybersecurity policy that isn’t *per se* tied to improving the security of specific devices”<sup>1372</sup> and by potentially subjecting researchers to liability for infringement by third parties.<sup>1373</sup> For example, Halderman et al. argue that “[a] narrow reading might interpret ‘primarily’ to mean ‘only’—excluding conduct like engaging in scholarship which does not directly improve the security of devices, but rather contributes to scientific discussion.”<sup>1374</sup>

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<sup>1365</sup> 2018 Recommendation at 305; *see also* 2015 Recommendation at 310–11.

<sup>1366</sup> 2018 Recommendation at 306.

<sup>1367</sup> CCIPS Class 13 Reply at 5.

<sup>1368</sup> Mem. Op. at 32, *Green v. U.S. Dep’t of Justice*, No. 16-cv-1492 (D.D.C. July 15, 2021), ECF No. 51.

<sup>1369</sup> *See* Section 1201 Report at 28; 2018 Recommendation at 303; 2012 Recommendation at 8.

<sup>1370</sup> Proponents refer to this as the “security limitation,” which Halderman et al. treat as a subset of “use limitations” that also includes the Access Limitation, which they refer to as the “purpose limitation.” To remain consistent with the 2018 Recommendation, the Office does not adopt proponents’ terminology.

<sup>1371</sup> 37 C.F.R. § 201.40(b)(11)(ii).

<sup>1372</sup> Halderman et al. Class 13 Initial at 18.

<sup>1373</sup> Rapid7 Class 13 Initial at 6; Halderman et al. Class 13 Reply at 6–7.

<sup>1374</sup> *See, e.g.*, Halderman et al. Class 13 Initial at 21.

Additionally, proponents argue, the Use Limitation “discourages security researchers from sharing their results by preventing a researcher from claiming the exemption if a bad actor takes advantage of that researcher’s vulnerability announcement.”<sup>1375</sup> This, they claim is “especially concerning in light of efforts by some vendors to intimidate researchers who attempt to warn the public against using services with critical vulnerabilities.”<sup>1376</sup>

Halderman et al. offer the example of Voatz, a voting technology company that uses blockchain to store votes, which allegedly threatened litigation against researchers when the company “realized that publication of research would negatively impact their business because researchers had identified intractable critical vulnerabilities.”<sup>1377</sup> The researchers purportedly had “sought to comply with the firm’s disclosure policy, [and] conducted research within the bounds of the CFAA [Computer Fraud and Abuse Act][] and the temporary security research exemption to the DMCA.”<sup>1378</sup> The record does not indicate that a lawsuit was filed in connection with this matter. But proponents argue that the threat of possible litigation is enough to qualify as an adverse effect.<sup>1379</sup>

In response, opponents contend that proponents have merely recycled the arguments the Acting Register rejected in 2018 and that their claims of potential adverse effects are both speculative and dependent on implausible court interpretations of the Use Limitation.<sup>1380</sup> As with the Access Limitation, they argue that the Use Limitation is critical to balancing the interests of good-faith security researchers and copyright owners,<sup>1381</sup> and that removing the limitation would facilitate copyright infringement.<sup>1382</sup>

CCIPS also opposes removing the Use Limitation and argues that “the [Acting] Register’s 2018 clarification—that ‘this language refers to the researcher’s own use and maintenance of the information derived from the research,’ and that any facilitation

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<sup>1375</sup> HackerOne Class 13 Initial at 5.

<sup>1376</sup> Halderman et al. Class 13 Initial at 21-23 (arguing that “malicious litigation” has a chilling effect on researchers, who “may be circumspect in discussing their work or reluctant to inform the public about critical vulnerabilities in applications from social media to election infrastructure”).

<sup>1377</sup> *Id.* at 22.

<sup>1378</sup> *Id.*

<sup>1379</sup> See Tr. at 489:01–490:18 (Apr. 8, 2021) (Reid, Halderman et al.).

<sup>1380</sup> See BSA Class 13 Opp’n at 4–5; Joint Creators Class 13 Opp’n at 4; SIIA Class 13 Opp’n at 5.

<sup>1381</sup> DVD CCA & AACCS LA Class 13 Opp’n at 3, 5.

<sup>1382</sup> *Id.*

should be assessed using established principles of third party liability for infringement—largely addressed this concern.”<sup>1383</sup>

The Register agrees with opponents that the Use Limitation continues to serve a valuable purpose and that it does not impose adverse effects on noninfringing uses. As with the Access Limitation, the Register finds that proponents’ concerns are based on implausible interpretations of the Use Limitation. The Register reiterates the clarifications in the 2018 Recommendation. Specifically, the noninfringement language “refers to the researcher’s own use and maintenance of the information derived from the research,” and “evidence of third-party infringement is relevant to a researcher’s eligibility for the exemption only insofar as it supports a finding that the researcher’s use or maintenance of information constitutes contributory or vicarious infringement, or inducement of infringement.”<sup>1384</sup> Researchers need not worry about how third parties use the findings or publication of good-faith security research unless the researchers would be liable for facilitating copyright infringement under established standards of secondary copyright infringement.

In light of the foregoing, the Register again concludes that the Use Limitation is not likely to result in an adverse effect on good-faith security research.

***Lawfully Acquired Limitation.*** Proponents argue that the Lawfully Acquired Limitation creates significant uncertainty over potential liability, even where devices are obtained in an entirely legitimate manner. HackerOne, for example, raises concerns about software as a service that is accessed through a website: “Unfortunately, these researchers may not be able to find protection under Proposed Class 13 because they are not in lawful possession of the devices or machines that house the computer programs on which the websites are run.”<sup>1385</sup> Halderman et al. provided another example—that of devices, such as voting machines, upon which vendors place contractual restrictions preventing buyers from selling to third parties, including security researchers. Because contract law is governed by state laws, they argue, “[a] researcher’s potential for liability may depend on contract law within a specific state, leading to different outcomes depending on what state the security researcher resides in, what state the device was initially sold in, or the state in which the vendor operates or is incorporated in.”<sup>1386</sup> This, they contend, creates too much uncertainty for security researchers to receive pre-research clearance from their attorney.<sup>1387</sup>

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<sup>1383</sup> CCIPS Class 13 Reply at 5 (quoting 2018 Recommendation at 309).

<sup>1384</sup> 2018 Recommendation at 309–10.

<sup>1385</sup> HackerOne Class 13 Initial at 3.

<sup>1386</sup> Halderman et al. Class 13 Initial at 24.

<sup>1387</sup> *Id.*

Opponents generally contend that the Lawfully Acquired Limitation strikes the appropriate balance and that the record does not support removing it.<sup>1388</sup> Multiple commenters cited the 2018 rulemaking proceeding, which found insufficient evidence of adverse effects, and claimed that proponents have offered no new evidence.<sup>1389</sup> For example, Joint Creators state that “[i]n 2018, the Copyright Office rejected an identical request due to the absence in the record of any indication of this type of dispute and . . . there is no indication in Halderman’s 2020 petition that any disputes of the type described by proponents have materialized.”<sup>1390</sup> In particular, opponents argue that proponents rely on an “unreasonable” interpretation of the current exemption.<sup>1391</sup>

CCIPS likewise opposes removing the limitation on the same rationale it provided in 2018. It states the limitation still “serves the valid purpose of excluding research on devices obtained through theft or fraud, or conducted on other hardware or networks without permission of an owner or lawful operator.”<sup>1392</sup>

As with the Access Limitation and the Use Limitation, the Acting Register considered and rejected proponents’ arguments in 2018. In particular, as BSA notes, the Acting Register’s 2018 Recommendation carefully considered the argument that this limitation potentially chills security research and rejected the proponents’ assertion that the limitation was ambiguous.<sup>1393</sup> Nonetheless, to avoid any uncertainty, the Acting Register stated that the Lawfully Acquired Limitation “does not require that the circumventing party be the lawful owner of the device—or the software embedded within the device—only that the device be lawfully acquired.”<sup>1394</sup> The Register adheres to this conclusion and is not persuaded that the Lawfully Acquired Limitation has had any chilling effect on good-faith security research.

For software programs that are accessed through a website, the Register offers additional guidance. Proponents express concern that security researchers cannot lawfully acquire “the devices or machines that house the computer programs on which

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<sup>1388</sup> See ACT Class 13 Opp’n at 2; BSA Class 13 Opp’n at 2, 5; MEMA Class 13 Opp’n at 2 (arguing that the exemption is rooted in the Lawfully Acquired Limitation and that this is part of “a thoughtful and narrowly tailored exemption that permits good-faith security research” while being mindful of safety concerns related to circumvention of TPMs in vehicles).

<sup>1389</sup> See ACT Class 13 Opp’n at 2; Joint Creators Class 13 Opp’n at 5; MEMA Class 13 Opp’n at 2.

<sup>1390</sup> Joint Creators Class 13 Opp’n at 5. See also ACT Class 13 Opp’n at 2 (arguing that “petitioners have not proven actual harm to justify their removal”); BSA Class 13 Opp’n at 5.

<sup>1391</sup> BSA Class 13 Opp’n at 5.

<sup>1392</sup> CCIPS Class 13 Reply at 5.

<sup>1393</sup> BSA Class 13 Opp’n at 5 (quoting 2018 Recommendation at 303).

<sup>1394</sup> 2018 Recommendation at 303.

the websites are run.”<sup>1395</sup> The exemption, however, covers research that is “undertaken on a computer, computer system, or computer network . . . with the authorization of the owner or operator of such computer, computer system, or computer network.”<sup>1396</sup> It does not require that a researcher be the owner of the device or machine used to operate a website. Rather, a researcher seeking to conduct good-faith security research on such a program will satisfy the Lawfully Acquired Limitation if the researcher has authorized *access* to the website housing the program; the researcher need not physically acquire the devices or machines on which the website is run.

The Register accordingly concludes that the Use Limitation is unlikely to result in an adverse effect on good-faith security research, and therefore does not recommend its removal from the exemption.

***Other Laws Limitation.*** Proponents argue that the Other Laws Limitation, which requires that a covered act of circumvention “not violate any applicable law, including without limitation the Computer Fraud and Abuse Act of 1986,”<sup>1397</sup> chills noninfringing security research by “creating uncertainty through the introduction of extraneous legal regimes wholly unrelated to copyright.”<sup>1398</sup> In particular, they argue first that “laws governing ethical hacking are increasingly in flux”<sup>1399</sup> and that some laws, “like the CFAA[,] are enforced through nuanced prosecutorial discretion in order to distinguish between *technical* violations that are generally allowed and *malicious* violations that are usually prosecuted.”<sup>1400</sup> Second, they argue that the Other Laws Limitation forces the Copyright Office to weigh in on laws that are outside its expertise.<sup>1401</sup> And, third, proponents assert that the Other Laws Limitation provides a vehicle for copyright owners “to sue security researchers based on claims that have no actual basis in copyright law, but merely seek to leverage Section 1201 to intimidate critics or opponents.”<sup>1402</sup>

Additionally, proponents contend that security researchers often lack the resources to sufficiently evaluate all potentially applicable laws, such as the CFAA, state contract

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<sup>1395</sup> HackerOne Class 13 Initial at 3.

<sup>1396</sup> 37 C.F.R. § 201.40(b)(11)(i).

<sup>1397</sup> *Id.*

<sup>1398</sup> Halderman et al. Class 13 Initial at 12. *See also* Rapid7 Class 13 Initial at 3.

<sup>1399</sup> HackerOne Class 13 Initial at 3 (discussing, as an example, the CFAA).

<sup>1400</sup> Halderman et al. Class 13 Initial at 25 (citing U.S. DEP’T. OF JUSTICE, JUSTICE MANUAL, § 9-48.000 (rev. Jan. 2020), <https://www.justice.gov/jm/jm-9-48000-computer-fraud>).

<sup>1401</sup> *Id.* at 26.

<sup>1402</sup> *Id.*

laws, tax laws, and obscure foreign laws.<sup>1403</sup> As an example of an adverse effect, Professor Halderman stated at the public hearing that a junior colleague had been discouraged from pursuing a research project because of colleagues' concerns over potential legal violations that could trigger liability under section 1201.<sup>1404</sup> Rapid7 adds that the "increased and unnecessary burden falls heaviest on independent researchers without access to legal expertise or resources."<sup>1405</sup>

Rapid7 asserts that the Acting Register rejected removing the Other Laws Limitation in 2018 because the Office, agreeing with CCIPS, did not want to suggest that the temporary exemption could provide justification for violating other applicable laws.<sup>1406</sup> Rapid7, however, argues that the regulatory language can be revised to make clear that eligibility for the exemption does not provide a safe harbor from other laws.<sup>1407</sup> To avoid the bootstrapping of liability under section 1201, Rapid7 recommends removing from the exemption the requirement that an act of circumvention not violate any applicable law and replacing it with explanatory text that a protected use "may nevertheless incur liability under other applicable laws, including without limitation the Computer Fraud and Abuse Act of 1986, as amended and codified in title 18, United States Code."<sup>1408</sup> In reply comments, Halderman et al. state that "Rapid7's proposed modification with regard to the Other Laws Limitation would solve many of the issues with" that provision.<sup>1409</sup>

Opponents counter that the Other Laws Limitation "strikes the appropriate balance, and petitioners have not proven actual harm to justify [its] removal."<sup>1410</sup> Of particular concern, opponents say, is that without the Other Laws Limitation, some individuals might exploit the exemption as a defense for violating an applicable law.<sup>1411</sup> Opponents

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<sup>1403</sup> *Id.* at 25 ("Security researchers usually work for universities or other non-profit institutions, and thus cannot afford to hire sophisticated legal counsel that is qualified to opine on the applicability of various legal regimes including—but not limited to—the DMCA, the CFAA, the Wiretap Act, various federal and state level privacy laws, and every state's contract law."); Halderman et al. Class 13 Reply at 10 (arguing that not all security researchers are well supported and, regardless, the Other Laws Limitation should be removed to guard against discouraging good-faith security research).

<sup>1404</sup> Tr. at 441:19–442:19 (Apr. 8, 2021) (Halderman, Univ. of Michigan).

<sup>1405</sup> Rapid7 Class 13 Initial at 3.

<sup>1406</sup> *Id.* at 3–4.

<sup>1407</sup> *Id.* at 5.

<sup>1408</sup> *Id.*

<sup>1409</sup> Halderman et al. Class 13 Reply at 12.

<sup>1410</sup> ACT Class 13 Opp'n at 2. *See also* Joint Creators Class 13 Opp'n at 5.

<sup>1411</sup> *See, e.g.*, Tr. at 496:13-19 (Apr. 8, 2021) (Williams, Joint Creators).

also note that, in rejecting the proposed removal of the Other Laws Limitation in 2018, the Office cited the language in the permanent exemption for security testing in section 1201(j), which includes a similar condition.<sup>1412</sup>

CCIPS has advised the Office that, in contrast to its prior views, it now supports removing the Other Laws Limitation. In 2018, CCIPS said that “it ‘does not view the anti-circumvention provisions as the most appropriate or efficient means of imposing limits on security research’ beyond the scope of copyright concerns, and therefore ‘would not object to the removal of [the Other Laws Limitation] from the exemption, were it standing alone.’”<sup>1413</sup> It opposed removing the Other Laws Limitation, however, because of “the interplay and occasionally overlapping application of the DMCA and the CFAA” and concern that removal “might mislead researchers into believing that operating within the DMCA exemption would also provide an exemption from CFAA liability, which it does not.”<sup>1414</sup> But, while stating that good-faith security research still should not violate applicable laws,<sup>1415</sup> CCIPS states that it is “now persuaded that replacing the existing requirement that research not violate ‘any applicable law’ with alternative explanatory language would provide equally sufficient notice of the need to comply with applicable law.”<sup>1416</sup>

In particular, CCIPS shares proponents’ concern that the Other Laws Limitation deters beneficial security research in two ways. One is by imposing potentially substantial liability under section 1201 for an “inadvertent or minor violation[] of an unrelated law”<sup>1417</sup> that carries a much lower penalty, and possibly where prosecutorial discretion suggests enforcement is likely. The second way is by sweeping in foreign laws that may be obscure, inconsistent with U.S. law, or “administered or enforced in a manner inconsistent with U.S. standards.”<sup>1418</sup> CCIPS supports Rapid7’s approach for removing

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<sup>1412</sup> BSA Class 13 Opp’n at 5–6; Joint Creators Class 13 Opp’n at 6.

<sup>1413</sup> 2018 Recommendation at 311 (quoting Letter from John T. Lynch, Jr., Chief, Comput. Crime & Intellectual Prop. Section, Criminal Div., U.S. Dep’t of Justice, to Regan A. Smith, Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 5 (June 28, 2018), *available at* [https://cdn.loc.gov/copyright/1201/2018/USCO-letters/USDOJ\\_Letter\\_to\\_USCO.pdf](https://cdn.loc.gov/copyright/1201/2018/USCO-letters/USDOJ_Letter_to_USCO.pdf)).

<sup>1414</sup> Letter from John T. Lynch, Jr., Chief, Comput. Crime & Intellectual Prop. Section, Criminal Div., U.S. Dep’t of Justice, to Regan A. Smith, Gen. Counsel & Assoc. Register of Copyrights, U.S. Copyright Office at 6 (June 28, 2018) *available at* [https://cdn.loc.gov/copyright/1201/2018/USCO-letters/USDOJ\\_Letter\\_to\\_USCO.pdf](https://cdn.loc.gov/copyright/1201/2018/USCO-letters/USDOJ_Letter_to_USCO.pdf).

<sup>1415</sup> CCIPS Class 13 Reply at 3 (“To be clear, as part of the federal government’s chief law enforcement body, we remain steadfast in our view that those who undertake computer security research in good faith can and should abide by all applicable federal, state, and local laws.”).

<sup>1416</sup> *Id.*

<sup>1417</sup> *Id.*

<sup>1418</sup> *Id.* at 4.



the Other Laws Limitation and adding a clarifying statement, but with additional language to make clear that qualification for the exemption “is not a safe harbor or defense to liability under other applicable laws.”<sup>1419</sup>

As in 2018, the Register places considerable weight on the views of CCIPS on this question, given its role in enforcement of federal cybercrime laws.<sup>1420</sup> The Office finds it significant that the agency charged with such responsibility does believe it necessary to condition eligibility for the security research exemption on compliance with other legal provisions, which of course continue to apply in any event. The Register concludes that CCIPS and Rapid7 offer an effective approach for removing likely adverse effects on noninfringing security research while making clear that nothing in the exemption condones or excuses the violation of any other law applicable to an act of circumvention.

In recommending retaining the Other Laws Limitation in 2018, the Office also noted its general practice of tailoring exemption language to track the provisions of any analogous statutory exemption to the extent possible.<sup>1421</sup> As noted, section 1201(j) requires compliance with other laws as a condition of eligibility for the permanent security testing exemption.<sup>1422</sup> While the Office continues to believe that it is appropriate to look to the permanent exemptions in crafting temporary exemptions involving similar subject matter, there is no presumption in favor of adopting the statutory language. Indeed, as proponents noted, “Congress explicitly added the triennial rulemaking process to Section 1201 to allow the Office to adjust and rework exemptions based on changing circumstances and new technologies.”<sup>1423</sup>

Here, the record demonstrates that the Other Laws Limitation is likely to impose an adverse effect on noninfringing security research. And, for the reasons just discussed, that language can be removed without giving any suggestion that a security researcher is free to violate any other applicable laws when undertaking research that is exempt from section 1201 liability. The Register accordingly agrees with the combined approach proposed by Rapid7 and CCIPS. The regulatory language should be revised to make clear that this exemption does not provide a safe harbor from liability for violating other laws, but is not itself contingent upon adherence to other laws.

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<sup>1419</sup> *Id.* at 5.

<sup>1420</sup> 2018 Recommendation at 311.

<sup>1421</sup> *Id.*

<sup>1422</sup> 17 U.S.C. § 1201(j)(2).

<sup>1423</sup> Halderman et al. Class 13 Reply at 10 (citing 17 U.S.C. § 1201(a)(1)); *see also* CCIPS Class 13 Reply at 4 n.8 (noting that Congress designed the triennial review to “permit[] the language of exemptions to adapt to evolving technologies, market conditions, and legal landscapes”).

*ii. Statutory Factors*

The analysis of the proposed expansion under the section 1201 statutory factors differs slightly from the previous two cycles.<sup>1424</sup> The first statutory factor weighs in favor of the proposed expansion because the record demonstrates that granting the exemption would increase the availability of copyrighted works aimed at improving security vulnerabilities. Proponents have shown that removing the Other Laws Limitation is likely to reduce concerns about security research possibly falling outside the exemption solely because of the specter of an unrelated or obscure law.<sup>1425</sup> The second and third factors also support the proposed expansion, as the record indicates that it would increase security research in educational settings and for criticism, comment, teaching, scholarship, and research. Proponents also have demonstrated that the Other Laws Limitation has deterred noninfringing security research.<sup>1426</sup>

The Register finds that the fourth statutory factor also weighs in favor of granting the expansion, given that only the Other Laws Limitation is removed and the remaining limitations are retained. For the reasons noted above in the discussion of the fourth fair use factor, removing the Other Laws Limitation is unlikely to adversely affect the market for or value of computer programs.<sup>1427</sup> For the fifth factor, the Register finds significant CCIPS's concerns about the Other Laws Limitation being applied in a manner that could convert section 1201 into a vehicle for penalties that are disproportionate to the law that is implicated.

Based on the foregoing, the Register finds that proponents have met their obligation to show that the Other Laws Limitation is causing an adverse effect on users' ability to conduct noninfringing security research, or is likely to cause such an adverse effect in the next three years. The Register does not find any actual or likely adverse effect from the Access, Use, or Lawfully Acquired limitations challenged by proponents.

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<sup>1424</sup> Cf. 2018 Recommendation at 312 ("The application of the first four statutory factors to the proposed expansion is substantially the same as the analysis in 2015.").

<sup>1425</sup> Previously, this factor weighed in favor of the exemption because "removal of the Device Limitation would broaden the universe of programs upon which such works may be based." 2018 Recommendation at 312.

<sup>1426</sup> This is a similar application of the second and third factors as in 2018, when the Acting Register concluded "that the Device and Controlled Environment Limitations have prevented researchers from undertaking research projects outside the scope of the current exemption, and that they have deterred researchers from involving students in projects that could expose them to legal risk." 2018 Recommendation at 312.

<sup>1427</sup> This is also similar to the application of the fourth factor in 2018. See 2018 Recommendation at 312 ("[G]ranteeing the expansion, while retaining the other limitations discussed, is unlikely to adversely affect the market for or value of copyrighted computer programs.").

### 3. NTIA Comments

NTIA addresses the SFC proposed exemption and the Halderman et al. proposed exemption separately. Regarding SFC's proposal to cover privacy-related research in the exemption, NTIA agrees with the Register that no such expansion is necessary because "the current exemption already covers the privacy-related research activities referenced in the participants' post-hearing May 14, 2021 letter."<sup>1428</sup> NTIA recommends that the Register's Recommendation and the final rule make clear that privacy research is covered by the exemption. NTIA also urges that the Recommendation and final rule make clear that the privacy-related research "activities referenced in the participants' post-hearing letter do not encompass the totality of privacy-related research activities that are permitted with the good-faith security research exemption."<sup>1429</sup> The Register agrees that covered activities are not limited to those expressly referenced by participants in the post-hearing letter.

For the Halderman et al. petition, NTIA generally supports the proposal, consistent with its views in the 2015 and 2018 proceedings.<sup>1430</sup> Regarding the Other Laws Limitation, NTIA supports removing the provision for many of the same reasons discussed above. Specifically, "NTIA emphasizes that an exemption granted under this rulemaking does not obviate the need to comply with any other laws and regulations"<sup>1431</sup> and recommends removing the language so as not to "export[] potential liability under the DMCA to any other legal regime."<sup>1432</sup> Moreover, NTIA argues that removing this limitation would avoid "pull[ing] significant non-copyright law and policy considerations into this rulemaking process."<sup>1433</sup> It recommends adding text at the end of the exemption that "Good faith security research that qualifies for the exemption under paragraph (a) may nevertheless incur liability under other applicable laws, including without limitation the Computer Fraud and Abuse Act of 1986, as amended

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<sup>1428</sup> NTIA Letter at 87 (citing Joint Class 13 Post-Hearing Resp. (May 14, 2021)).

<sup>1429</sup> *Id.*

<sup>1430</sup> *Id.* at 88–89 ("NTIA continues to believe that supporting an inclusive security research exemption that provides certainty to security researchers will ultimately lead to more good-faith security research and serve the public interest in significant ways.").

<sup>1431</sup> *Id.* at 94.

<sup>1432</sup> *Id.* (citing CCIPS Class 13 Reply at 4; Letter from David J. Redl, Assistant Sec'y for Commc'ns & Info. & Adm'r, Nat'l Telecomms. & Info. Admin., U.S. Dep't of Commerce, to Karyn A. Temple, Acting Register of Copyrights and Dir., U.S. Copyright Office, at 78–79 (Sept. 25, 2018) ("2018 NTIA Letter")).

<sup>1433</sup> *Id.* at 96 (citing Halderman et al. Class 13 Initial at 26).

and codified in title 18, United States Code.”<sup>1434</sup> This language tracks recommendations from CCIPS and Rapid7, and is consistent with the Register’s recommendation.

NTIA also supports removing the Lawfully Acquired Limitation, arguing that there may be “situations where a security researcher might have indeed obtained access to a program, device, machine, or system in a legitimate manner (and done their best to do so), but nonetheless the threat of section 1201 liability looms large due to potential ambiguities in the law.”<sup>1435</sup> In past proceedings, NTIA notes, it “has conditioned its recommended regulatory language in this class on circumvention being ‘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.’”<sup>1436</sup> Here, however, NTIA is persuaded by proponents’ argument that the Lawfully Acquired Limitation is likely to adversely affect users of the proposed exemption in a similar manner to the Other Laws Limitation.<sup>1437</sup> For the reasons discussed above, however, the Register recommends retaining the Lawfully Acquired Limitation, and CCIPS agrees with that approach.

NTIA further supports, as it did in 2018, the removal of the Access Limitation and the Use Limitation.<sup>1438</sup> In its view, removing the term “solely” in 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.’”<sup>1439</sup> On the Use Limitation, NTIA again concludes that “removal of this provision ‘would provide clarity to good-faith security researchers and eliminate the potential liability of these researchers for the actions of third parties.’”<sup>1440</sup> The Register appreciates the importance of providing clarity, and for that reason has previously offered interpretive guidance, as discussed above. Further, the Register concludes that proponents’ concerns over these two limitations are speculative and do not demonstrate an adverse effect. The Register therefore recommends retaining these provisions.

#### 4. Conclusion and Recommendation

After thorough consideration, the Register recommends expanding the exemption by removing the Other Laws Limitation for the reasons discussed above. The Office again

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<sup>1434</sup> *Id.* at 97 (citing Rapid7 Class 13 Initial at 5; Rapid7 and J. Alex Halderman Class 13 *Ex Parte* Letter at 1 (July 16, 2021); CCIPS Class 13 Reply at 4–5).

<sup>1435</sup> *Id.* at 99.

<sup>1436</sup> *Id.* at 98 (quoting 2018 NTIA Letter at 84).

<sup>1437</sup> *Id.*

<sup>1438</sup> *Id.* at 101–05.

<sup>1439</sup> *Id.* at 103 (quoting 2018 NTIA Letter at 80) (citing GitHub Class 13 Reply at 4).

<sup>1440</sup> *Id.* at 104–05 (quoting 2018 NTIA Letter at 81).

notes that this exemption does not serve as waiver of liability for violating other laws while performing good-faith security research—indeed, an intended beneficiary may be subject to legal liability outside section 1201 even if operating within the exemption. Rather, this expansion merely removes liability under section 1201 of title 17 for circumvention based solely on a violation of another applicable law. The Office also clarifies that the exemption is inclusive of privacy research that otherwise meets the regulatory requirements. The Register recommends that the Librarian designate the following class:

**(i) Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates, or is undertaken on a computer, computer system, or computer network on which the computer program operates with the authorization of the owner or operator of such computer, computer system, or computer network, solely for the purpose of good-faith security research.**

**(ii) For purposes of paragraph (b)(16)(i) of this section, “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 an 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.**

**(iii) Good-faith security research that qualifies for the exemption under paragraph (b)(16)(i) of this section may nevertheless incur liability under other applicable laws, including without limitation the Computer Fraud and Abuse Act of 1986, as amended and codified in title 18, United States Code, and eligibility for that exemption is not a safe harbor from, or defense to, liability under other applicable laws.**

*N. Proposed Classes 14(a) and 14(b): Computer Programs and Video Games—Preservation*

**1. Background**

**a. Summary of Proposed Exemptions**

Proposed Classes 14(a) and 14(b) seek to address concerns that TPMs applied to computer programs and video games can interfere with legitimate preservation activities, including post-preservation research and teaching. The Register previously recommended, and the Librarian granted, separate exemptions permitting libraries, archives, and museums to circumvent TPMs on computer programs and video games for the purpose of preservation activities under certain circumstances. SPN and LCA filed petitions to remove the requirement in these existing exemptions that the preserved computer program or video game must not be “distributed or made available outside of the physical premises of the eligible library, archives, or museum” (the “premises limitation”).<sup>1441</sup> They explain that their proposed amendments would “meet growing user demand for remote access to virtual libraries,” as the premises limitation “inhibit[s] preservation, research, and teaching, slowing the race to protect vital digital history.”<sup>1442</sup> Because the issues in the computer program and video game subclasses have common characteristics, the Register will address both together, but will identify any factual or legal differences.

Through the course of these proceedings, proponents recommended various exemptions. In response to Joint Creators’ and the Entertainment Software Association’s (“ESA’s”) concerns that proponents’ initial proposal was overbroad,<sup>1443</sup> proponents offered to narrow the exemption to allow offsite video game access only “where the library, archives, or museum has no reason to believe the user has any purpose other than private study, scholarship, or research.”<sup>1444</sup> Proponents also stated their willingness “to accept a usage restriction for video game copies produced under the exemption,” by “adding a requirement that distribution must be for teaching, scholarship, or research.”<sup>1445</sup> Proponents proposed new regulatory language adding this requirement to Class 14(b),<sup>1446</sup> and proposed language for both Class 14(a) and 14(b) that would “harmoniz[e] the eligibility requirements across the software preservation exemptions,”

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<sup>1441</sup> 37 C.F.R. § 201.40(b)(12)(ii), (13)(iii) (2019).

<sup>1442</sup> SPN & LCA Class 14 Initial at 3.

<sup>1443</sup> See Joint Creators Class 14 Opp’n at 2; ESA Class 14 Opp’n at 5–6.

<sup>1444</sup> SPN & LCA Class 14 Reply at 3.

<sup>1445</sup> SPN & LCA Class 14 Post-Hearing Resp. at 1 (May 13, 2021).

<sup>1446</sup> *Id.*

and “include a reasonable security requirement.”<sup>1447</sup> Proponents subsequently reiterated that they did not support an exemption that contained additional use case-based access restrictions.<sup>1448</sup> Opponents maintain that the proposed exemption is overbroad and that proponents “did not provide information about realistic and noninfringing use cases that would support an exemption.”<sup>1449</sup>

Proponents’ ultimate exemption proposals follow, with proposed amendments indicated in bold and proposed deletions in strikethrough.

SPN and LCA’s Class 14(a) exemption language:

(13)(i) Computer programs, except video games, that have been lawfully acquired and that are no longer reasonably available in the commercial marketplace, solely for the purpose of lawful preservation of a computer program, or of digital materials dependent upon a computer program as a condition of access, by an eligible library, archives, or museum, where such activities are carried out without any purpose of direct or indirect commercial advantage ~~and the program is not distributed or made available outside of the physical premises of the eligible library, archives, or museum.~~

(ii) For purposes of the exemption in paragraph (b)(13)(i) of this section, a library, archives, or museum is considered “eligible” if—

(A) 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;

(B) The library, archives, or museum has a public service mission;

(C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

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<sup>1447</sup> *Id.*

<sup>1448</sup> SPN & LCA Class 14 *Ex Parte* Letter at 1 (June 25, 2021).

<sup>1449</sup> Joint Creators & ESA Class 14 Post-Hearing Resp. at 1 (May 24, 2021).

(E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(13).<sup>1450</sup>

SPN and LCA's Class 14(b) exemption language:

(12)(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 gameplay, solely for the purpose of:

....

(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~~ for teaching, research, or scholarship.

(ii) Video games in the form of computer programs embodied in physical or downloaded formats that have been lawfully acquired as complete games, that do not require access to an external computer server for gameplay, and that are no longer reasonably available in the commercial marketplace, solely for the purpose of 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~~ for teaching, research, or scholarship.

....

(iv) For purposes of this paragraph (b)(12), the following definitions shall apply: . . .

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<sup>1450</sup> SPN & LCA Class 14 Post-Hearing Resp. at 4-5 (May 13, 2021).



(E) ~~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.~~ For purposes of the exemption in paragraph (b)(12)(i) and (b)(12)(ii) of this section, a library, archives, or museum is considered “eligible” if—

[1] 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;

[2] The library, archives, or museum has a public service mission;

[3] The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

[4] The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

[5] The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(12).<sup>1451</sup>

Additional comments in support were filed by FSF and Tony Li, and supporting testimony was provided by Henry Lowood of Stanford University and Bo Ruberg of the University of California, Irvine. Comments in opposition were filed by Joint Creators and ESA.

For the reasons discussed below, the Register recommends that the proposed exemptions be granted in part and denied in part.

## **b. Overview of Issues**

In recommending prior preservation-related recommendations, the Register has stated that section 108 of the Copyright Act, which exempts libraries and archives from liability for certain preservation activities, “highlight[s] Congress’s recognition of preservation as

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<sup>1451</sup> *Id.* at 3–4.

an important social activity.”<sup>1452</sup> The Register has also noted that “this recognition is balanced with specific limitations on the making of such reproductions, reflecting Congress’s acknowledgment of copyright owners’ concern over unrestricted copying under the guise of preservation.”<sup>1453</sup> In 2015 and 2018, using section 108 as a guide, the Register recommended a video game preservation exemption that included a requirement that the preserved video game must not be “distributed or made available outside of the physical premises of the eligible library, archives, or museum.”<sup>1454</sup> In 2018, SPN and LCA proposed a software preservation exemption that contained an equivalent premises limitation, which the Register recommended after observing that it was “consistent with section 108(c).”<sup>1455</sup>

Proponents now argue that the premises limitation inhibits remote user access to preserved works and that removal of this language would benefit users, including by lowering research and teaching costs, such as those associated with travel; meeting users’ expectations, which in turn could help the institutions obtain funding; and complying with health and safety guidelines during the COVID-19 pandemic.<sup>1456</sup>

Opponents contend that the proposed expansion is unnecessary and overbroad, including because the works at issue can already be preserved under the current exemption.<sup>1457</sup> They also argue that the proposed classes do not limit the beneficiaries of the exemption to “authenticated researchers pursuing scholarly purposes,”<sup>1458</sup> and consequently would allow “unauthorized, remote access to complete works for the general public, including for entertainment purposes, and even if the copyright owner

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<sup>1452</sup> 2018 Recommendation at 242; 2015 Recommendation at 341 (citing 17 U.S.C. 108; H.R. REP. NO. 94-1476, at 74–75 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5688-89).

<sup>1453</sup> 2015 Recommendation at 341.

<sup>1454</sup> 2018 Recommendation at 282; 37 C.F.R. § 201.40(b)(12)(i)(B), (12)(ii), (13)(i) (2019); 2015 Recommendation at 352; 37 C.F.R. § 201.40(b)(8)(i)(B) (2016).

<sup>1455</sup> 2018 Recommendation at 237, 255; 37 C.F.R. § 201.40(b)(13)(i) (2019).

<sup>1456</sup> SPN & LCA Class 14 Initial at 4–9. Proponents’ submitted comments referred to surveys of different preservation institutions’ staff, but do not include any specific survey questions and responses or any other documentation relevant to the survey. In response to the Office’s request, proponents declined to submit such documentation. SPN & LCA Class 14 *Ex Parte* Letter at 1 (June 25, 2021). The Register did not consider the survey evidence because neither she nor the opponents were able to review the context or accuracy of these survey references.

<sup>1457</sup> ESA Class 14 Opp’n at 10, 14–15; Joint Creators Class 14 Opp’n at 3.

<sup>1458</sup> ESA Class 14 Opp’n at 13.

has since reissued the work (or issued a derivative version of the work) or may do so in the future.”<sup>1459</sup>

## 2. Discussion

### a. Works Protected by Copyright

The proposed exemption would apply to TPMs controlling access to computer programs and video games, which are protected by copyright as computer programs, audiovisual works, or both. There is no dispute that at least some of these works are protected by copyright.<sup>1460</sup> Therefore, the Register finds that the proposed class includes at least some works protected by copyright.

### b. Asserted Noninfringing Uses

Proponents argue that various statutory provisions reflect a general federal policy of enabling remote access for preservation. These include the section 108 exceptions (as well as proposed amendments suggested in the Copyright Office’s *Section 108 Discussion Document*<sup>1461</sup>); the TEACH Act provisions found in sections 110(2) and 112(f); section 1401(f)(1); and the section 117 exceptions for computer programs.<sup>1462</sup> Proponents argue that their proposed activities are likely to be noninfringing based on a combination of those provisions and the fair use doctrine.

#### i. Section 108

Proponents recognize that not all of their proposed activities are likely to be noninfringing based on the text of section 108.<sup>1463</sup> Instead, they argue that several provisions of section 108 “demonstrate[s] a general federal policy of enabling remote

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<sup>1459</sup> Joint Creators Class 14 Opp’n at 2; *see also* ESA Class 14 Opp’n at 6 (removal of the premises limitation “is not preservation; that is offering an online arcade in violation of the exclusive rights of video game copyright owners, and to the detriment of an important market that such copyright owners can and do exploit and defend.”).

<sup>1460</sup> *See* ESA Class 14 Opp’n at 10.

<sup>1461</sup> U.S. COPYRIGHT OFFICE, SECTION 108 OF TITLE 17: A DISCUSSION DOCUMENT OF THE REGISTER OF COPYRIGHTS (2017), <https://www.copyright.gov/policy/section108/discussion-document.pdf> (“SECTION 108 DISCUSSION DOCUMENT”).

<sup>1462</sup> SPN & LCA Class 14 Initial at 22.

<sup>1463</sup> *See id.* at 14, 23 (suggesting that proposed activities in this class “in some cases may” be protected by section 108); Tr. at 661:06–15 (Apr. 19, 2021) (Teitler, SPN) (“While there might be some cases where archivists could conduct work offsite remotely that would be fair, I don’t think that 108(d) and 108(e) specifically would encompass those uses.”).

access” to copyrighted works, “especially out-of-commerce works used for research and teaching.”<sup>1464</sup>

Proponents first argue that section 108(c) supports their proposed exemption, despite that provision’s inclusion of a premises limitation. Broadly, section 108(c) authorizes an eligible institution to make three copies of a published work solely for purposes of replacing a copy that is damaged, deteriorating, lost, or stolen, “or if the existing format in which the work is stored has become obsolete.”<sup>1465</sup> Replacement copies may not be made available to the public in digital format outside the institution’s premises.<sup>1466</sup> Proponents explain that inclusion of the premises limitation was “motivated by concern that ‘unlimited access to digital copies from any location’ could harm the copyright owner’s market interests.”<sup>1467</sup> In their view, this concern is not present in “a context where no market demand exists . . . and where there is no indication that the user has any intention other than personal research and study,” because in such a circumstance the “risk is attenuated at best, and outweighed by the research and teaching value of access.”<sup>1468</sup> Proponents argue that the Office “recognized the desirability of off-premises access” to works in a preservation institution’s collection in the *Section 108 Discussion Document*.<sup>1469</sup> Proponents further suggest that the term “premises” does not necessarily refer to physical premises and could include a digital network or an institutional intranet.<sup>1470</sup>

Proponents also argue that sections 108(d) and (e) support their proposed exemption. Section 108(d) authorizes an eligible institution to reproduce and distribute a copy made from its collections upon request for “no more than one article or other contribution to a copyrighted collection or periodical issue” or “a small part of any other copyrighted work,” if certain requirements are met,<sup>1471</sup> including that “the library or archives has had no notice that the copy or phonorecord would be used for any purpose other than private study, scholarship, or research.”<sup>1472</sup> Section 108(e) authorizes an eligible library or archives to reproduce and distribute an entire work or substantial part of a work

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<sup>1464</sup> *Id.* at 22.

<sup>1465</sup> 17 U.S.C. § 108(c).

<sup>1466</sup> *Id.* § 108(c)(2).

<sup>1467</sup> SPN & LCA Class 14 Initial at 24 (citing S. REP. NO. 105-190 at 27 (1998)).

<sup>1468</sup> *Id.*

<sup>1469</sup> *Id.* at 25; *see also* SPN & LCA Class 14 Reply at 21.

<sup>1470</sup> SPN & LCA Class 14 Initial at 24; Tr. at 678:01–03 (Apr. 19, 2021) (Albert, SPN) (noting that “although [section 108] says ‘premises,’ it doesn’t specify physical premises in the way that the . . . current [regulatory language does]”).

<sup>1471</sup> 17 U.S.C. § 108(d).

<sup>1472</sup> *Id.* § 108(d)(1).

upon a user's or other library or archives' request, "if the library or archives has first determined, on the basis of a reasonable investigation, that a copy or phonorecord of the copyrighted work cannot be obtained at a fair price" and the library or archives can satisfy the same notice and copyright requirements found in section 108(d).<sup>1473</sup>

Proponents contend that these sections "are meant to preserve the traditional scholarly right to conduct research at home with one's scholarly materials"<sup>1474</sup> and that "providing off-site access to out-of-commerce software to users through emulation software serves the customary purposes advanced by sections 108(d) and (e), namely to facilitate personal research uses that require consulting library resources at a distance."<sup>1475</sup> An earlier version of proponents' Class 14(b) video game preservation proposal included the restriction found in section 108(d) and (e) that preservation institutions "only serve users where [they] have no notice that access is for reasons other than private study, scholarship, or research."<sup>1476</sup> Proponents state that adding this language "should prove effective and workable" in limiting uses to scholarly purposes because it "has been effective at protecting the rights of copyright holders in the context of other works for nearly half a century."<sup>1477</sup>

Opponents disagree that section 108 applies to the proposed uses in this class. ESA makes a general objection that proponents "never identify the cases they think might be covered by Section 108 . . . and do not argue that those provisions are materially relevant."<sup>1478</sup> Joint Creators argue that proponents are not targeting preservation, as contemplated by section 108, as they believe proponents intend to "create new copies that they never paid for, and . . . propose to use the copies obtained through circumvention in ways in which lawful copies never could have been used."<sup>1479</sup> Joint Creators additionally note that section 108(c) is not applicable because of its premises requirement.<sup>1480</sup>

Opponents further argue that using section 108(d) and (e) as either a basis for noninfringing use or as model exemption language is problematic. They correctly note

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<sup>1473</sup> *Id.* § 108(e)(1)–(2).

<sup>1474</sup> Tr. at 661:07–11 (Apr. 19, 2021) (Teitler, SPN); *see* SPN & LCA Class 14 Initial at 24.

<sup>1475</sup> SPN & LCA Class 14 Initial at 24.

<sup>1476</sup> SPN & LCA Class 14 Reply at 7 (referencing 17 U.S.C. § 108(d)(1), (e)(1)).

<sup>1477</sup> *Id.* at 7.

<sup>1478</sup> ESA Class 14 Opp'n at 10 n.59.

<sup>1479</sup> Joint Creators Class 14 Opp'n at 5; *see also* Tr. at 675:24–676:19 (Apr. 19, 2021) (Williams, Joint Creators) (discussing applicability of section 108).

<sup>1480</sup> Tr. at 676:11–14 (Apr. 19, 2021) (Williams, Joint Creators).

that these provisions do not apply to audiovisual works, including video games.<sup>1481</sup> Joint Creators further observe that section 108(d) “only applies to portions of specific types of works,” not whole works.<sup>1482</sup> Opponents also argue that the proposed exemptions do not include any “requesting language,” even though sections 108(d) and (e) require that any reproduction or distribution made by a library or archive must have been pursuant to a user’s request.<sup>1483</sup> ESA further argues that the notice provisions of section 108(d) and (e), “[are]n’t very meaningful if a public library chooses to put emulated games up online for a public audience.”<sup>1484</sup>

Having considered the parties’ arguments, the Register concludes that proponents’ uses are unlikely to be noninfringing under section 108. The Office considered section 108(c) in the last rulemaking, and concluded that some, but not all, proposed software preservation activities would be noninfringing under that section.<sup>1485</sup> Proponents have not offered any arguments that change this analysis. While the *Section 108 Discussion Document* proposed removal of section 108(c)’s premises requirement, it cannot act as the legal basis that a particular activity is noninfringing, as it does not have the force of law.<sup>1486</sup>

Likewise, neither section 108(d) nor (e) can serve as a basis to find that proponents’ proposed activities are likely to be noninfringing. Section 108(d) is inapplicable to proponents’ activities as it only applies to small portions of a work. While section 108(e) may apply to some works involved in proponents’ activities, section 108(i) exempts most audiovisual works from section 108(d) and (e),<sup>1487</sup> making each section inapplicable to video games.

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<sup>1481</sup> See Joint Creators Class 14 Opp’n at 4 n.9; Tr. at 681:10–11 (Apr. 19, 2021) (Williams, Joint Creators).

<sup>1482</sup> Tr. at 675:24–76:03 (Apr. 19, 2021) (Williams, Joint Creators).

<sup>1483</sup> Tr. at 683:21–684:01 (Apr. 19, 2021) (Englund, ESA); Tr. at 676:04–08 (Apr. 19, 2021) (Williams, Joint Creators); see also Tr. at 696:04–05 (Apr. 19, 2021) (Williams, Joint Creators) (“current 108(e) is about user requests, not about proactive projects by universities”).

<sup>1484</sup> Tr. at 683:13–15 (Apr. 19, 2021) (Englund, ESA).

<sup>1485</sup> 2018 Recommendation at 237–38.

<sup>1486</sup> Further, contrary to proponents’ claim that “premises,” in the context of current section 108 does not necessarily mean “physical premises,” the legislative history for the DMCA’s section 108 amendments contemplate that “libraries’ and ‘archives’ refer to institutions that are established as, and conduct their operations through, physical premises.” S. REP. NO. 105-190, at 62 (1998).

<sup>1487</sup> 17 U.S.C. § 108(i).

Because not all of the proposed uses are protected by section 108, proponents must demonstrate that their proposed activities are likely noninfringing on other legal grounds.

*ii. Sections 110(2), 112(f), 1401(f) and 117*

Proponents contend that sections 110(2), 112(f), and 1401(f) “demonstrat[e] a general federal policy of enabling remote access for these purposes.”<sup>1488</sup> Proponents also state that “the creation of temporary copies on the user’s computer and the display and performance of preserved works in a user’s browser as part of EAAS<sup>1489</sup> for preservation, teaching, and research, as well as the copying and distribution of preserved software to facilitate teaching and research by remote users using their own hardware, are protected by . . . [section] 117.”<sup>1490</sup> Proponents do not otherwise explain how the proposed uses would be noninfringing based on these provisions. Without further analysis, proponents have failed to meet their burden of showing that their activities are likely noninfringing under these provisions.<sup>1491</sup>

*iii. Fair Use*

*1) Applicability of Fair Use*

As in past exemption recommendations, the Register again recognizes that “some preservation activity beyond the scope of [section] 108 may well constitute a fair use.”<sup>1492</sup> The Office has noted that section 108 “provides useful and important guidance as to Congress’s intent regarding the nature and scope of legitimate preservation activities,”<sup>1493</sup> but “fair use remains an important safety valve [that] is available to libraries and archives in situations not addressed by the text of section 108.”<sup>1494</sup> This approach is consistent with the statute, which expressly provides that nothing in section 108 “in any way affects the right of fair use as provided by section 107.”<sup>1495</sup> The Register

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<sup>1488</sup> SPN & LCA Class 14 Initial at 22.

<sup>1489</sup> “EAAS” is an abbreviation for “Emulation as a Service.” See SPN & LCA Class 14 Initial at 7.

<sup>1490</sup> *Id.* at 14.

<sup>1491</sup> Notably, in 2018 and 2003, the Register found the record insufficient to determine that section 117 applies to similar preservation activities. See 2018 Recommendation at 245–47; 2003 Recommendation at 56–58 & nn.101–03.

<sup>1492</sup> 2018 Recommendation at 239; 2003 Recommendation at 54–55.

<sup>1493</sup> 2018 Recommendation at 239 (citing 2015 Recommendation at 342).

<sup>1494</sup> 2018 Recommendation at 239–40 (citing SECTION 108 DISCUSSION DOCUMENT at 16).

<sup>1495</sup> 17 U.S.C. § 108(f)(4); see also *Authors Guild v. HathiTrust*, 755 F.3d 87, 94 n.4 (2d Cir. 2014) (relying on this clause to reject argument that section 108 foreclosed analysis under fair use); H.R.

therefore will consider proponents' argument that their activities are noninfringing as fair uses.

## 2) Discussion

With respect to the first fair use factor, the purpose and character of the use, proponents cite the 2018 Recommendation to support their claim that their non-commercial "preservation, research, and teaching are activities favored under the fair use analysis."<sup>1496</sup> Proponents cite *Authors Guild v. HathiTrust* for the premise that it is appropriate to consider the Copyright Act or other federal policies as evidence regarding whether a particular use advances the goals of copyright.<sup>1497</sup> Referencing *Google v. Oracle*<sup>1498</sup> and other cases, proponents also claim that uses that benefit the public are more likely to be fair.<sup>1499</sup>

Proponents further contend that their contemplated uses are transformative and that "[t]he physical location of the user does not have any impact on the transformative nature of the proposed uses."<sup>1500</sup> With respect to software, they argue that providing remote access "presents software (and software-dependent digital materials) as historical artifacts for research and teaching purposes," which is a "fundamentally different purpose relative to the original consumer and commercial purposes of software."<sup>1501</sup> Regarding video games, proponents state that "[g]ameplay for research purposes serves a distinct purpose from primary entertainment and aesthetic value and facilitates research, comment or critique on the game."<sup>1502</sup>

Opponents argue the first factor weighs against fair use because the proposed use is commercial and non-transformative. ESA cites cases stating that "[d]irect economic benefit is not required to demonstrate commercial use" and "'repeated and exploitative

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REP. NO. 94-1476, at 74, *reprinted in* 1976 U.S.C.C.A.N. 5687-88 ("No provision of section 108 is intended to take away any rights existing under the fair use doctrine."); SECTION 108 DISCUSSION DOCUMENT at 14 ("[T]he savings clause . . . was designed as an appropriate backstop to fill in potential legal gaps not addressed by the existing specific exception.").

<sup>1496</sup> SPN & LCA Class 14 Initial at 15 (citing 2018 Recommendation at 242).

<sup>1497</sup> *Id.* at 22-23 (citing *HathiTrust*, 755 F.3d at 101-02).

<sup>1498</sup> *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183 (2021).

<sup>1499</sup> SPN & LCA Class 14 Initial at 15 (citing *Blanch v. Koons*, 467 F.3d 244, 253 (2d Cir. 2006)); *see* Tr. at 687:16-688:09 (Apr. 19, 2021) (Woodall, SPN); Tr. at 693:04-06 (Apr. 19, 2021) (Albert, SPN).

<sup>1500</sup> SPN & LCA Class 14 Initial at 14-15.

<sup>1501</sup> *Id.*; *see also id.* at 17-18 (noting that the video game "SimCity" was used for job training and that "[t]he purposes served by offsite access to preserved software are . . . transformative relative to the original commercial gaming uses of entertainment or job training purposes").

<sup>1502</sup> SPN & LCA Class 14 Reply at 9.



copying of copyrighted works,' even by a nonprofit organization, is considered commercial in a fair use analysis."<sup>1503</sup> They claim the proposed use is commercial because making preserved works available remotely would provide indirect economic benefits to the institutions by making them "eligible for grant funding or increasing donations or memberships."<sup>1504</sup> Opponents also contend that the proposed uses are not transformative, as "exemption beneficiaries would simply create new copies of works and provide access to them to patrons who would view them in their entirety."<sup>1505</sup> While ESA concedes that "using preserved software 'for research and teaching' may be protected by fair use," it adds that "it does not . . . follow that offsite access is needed for research and teaching, much less that providing online access to preserved video games for everyone is 'for research and teaching.'"<sup>1506</sup>

As an initial matter, the Register concludes that proponents' proposed expanded uses are non-commercial in nature. While proponents suggest that they seek to remove the on-premises requirement in part so that they can secure increased funding,<sup>1507</sup> the proposed use of the software itself is intended to facilitate preservation, teaching, and research. Further, the proposed exemption is restricted to activities "carried out without any purpose of direct or indirect commercial advantage," which excludes any users who might engage in commercially motivated acts.

With respect to preservation, research, and teaching uses, the first factor generally weighs in favor of fair use.<sup>1508</sup> As the 2018 Recommendation noted, research and teaching are identified in the preamble to section 107 as examples of fair uses, and "the

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<sup>1503</sup> ESA Class 14 Opp'n at 12 (citing *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1015 (9th Cir. 2001); *Wall Data Inc. v. Los Angeles Cty. Sheriff's Dep't*, 447 F.3d 769, 779 (9th Cir. 2006)).

<sup>1504</sup> *Id.*; see also Joint Creators Class 14 Opp'n at 6 ("[P]roponents candidly acknowledge that their proposal is motivated by a desire to garner increased funding for the circumventing organizations.").

<sup>1505</sup> Joint Creators Class 14 Opp'n at 6; see ESA Class 14 Opp'n at 12. Joint Creators also suggest that "[t]he proposal for unlimited remote public access is more akin to space and format-shifting services of the kind rejected in prior proceedings than it is to true preservation uses." Joint Creators Class 14 Opp'n at 5.

<sup>1506</sup> ESA Class 14 Opp'n at 19.

<sup>1507</sup> SPN & LCA Class 14 Initial at 6–7.

<sup>1508</sup> See generally, *Cambridge Univ. Press v. Patton*, 769 F.3d 1232, 1267 (11th Cir. 2014) (noting that a nonprofit educational use is favored under the first fair use factor, but certain commercial educational uses could negate this conclusion); *Diversey v. Schmidly*, 738 F.3d 1196, 1203 (10th Cir. 2013) (finding that distribution of a dissertation in a university library was "a non-commercial, educational purpose at the heart of the protection for fair use"); see also *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 455 n.40 (1984) (observing that "a scholarly endeavor certainly has a stronger claim to fair use" compared to other uses).

legislative history and case law make clear that library and archival preservation is a favored purpose under the fair use analysis.”<sup>1509</sup> In *HathiTrust*, the Second Circuit considered whether digitizing copyright-protected works and allowing member libraries to provide visually impaired patrons off-premises access to those works was a fair use.<sup>1510</sup> The court held that, despite this act not being transformative, the first factor favored a finding of fair use.<sup>1511</sup> Similarly, here, the proposed exemption would allow libraries, archives, and museums to make preserved works available for research and teaching. Thus, regardless of whether the uses are considered transformative, they advance purposes that are generally favored under the first factor.

Proponents’ proposed exemption, however, does not include any access restrictions that would ensure that the copyrighted works would actually be used primarily for research and educational uses. In particular, opponents express concern that proponents’ proposed regulatory language does not limit usage of copies of video games in any way, suggesting that the exemption could be used not only by researchers or educators, but by “the general public, including for entertainment purposes.”<sup>1512</sup> Opponents object that proponents have “refused to engage concerning questions such as how . . . downstream users could be authenticated and their motivations known, how access could be supervised, and how limitations on access could be enforced.”<sup>1513</sup> As examples, they suggest that the exemption could be limited to allowing access only to authenticated students doing research on a particular game, or to require controlled screensharing.<sup>1514</sup> Proponents, however, have objected to the inclusion of any such limitations in the proposed exemption.

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<sup>1509</sup> 17 U.S.C. § 107; 2018 Recommendation at 242.

<sup>1510</sup> *HathiTrust*, 755 F.3d at 101–02.

<sup>1511</sup> *Id.* at 102 (citing H.R. REP. NO. 94–1476, at 73 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5659, 5686; *Sony*, 464 U.S. at 455 n.40).

<sup>1512</sup> Joint Creators Class 14 Opp’n at 2; *see also* ESA Class 14 Opp’n at 6, 13 (arguing that removal of the premises limitation “is not preservation; that is offering an online arcade in violation of the exclusive rights of video game copyright owners, and to the detriment of an important market that such copyright owners can and do exploit and defend”).

<sup>1513</sup> Joint Creators & ESA Class 14 Post-Hearing Resp. at 2 (May 24, 2021).

<sup>1514</sup> *See* Tr. at 672:21–673:03 (Apr. 19, 2021) (Englund, ESA) (“I think if the proposal [involved] authenticated students that are doing a project on a particular game, that’s a different proposition. . . . [I]f you wrote a regulation to that effect, you could analyze it. But again, merely saying that somebody is a university student ought to be able to play games through an emulator is not something that sounds like it would be a fair use.”); Tr. at 712:02–05 (Apr. 19, 2021) (Englund, ESA) (“[I]f you were to write a rule that talked about controlled screensharing . . . I think the fair use analysis would look different.”).

Proponents prefer to permit institutions to publicly display or perform the works in any manner they deem to be fair use. During the hearing, proponents explained that they did not “lay out a clear . . . list of what our potential authorized offsite methods of access [are] because we believe that libraries and archival institutions need the flexibility to determine what is the best . . . non-infringing use for the particular work and for the particular circumstances.”<sup>1515</sup> They suggested that preservation institutions would engage in their own “fact-specific and very individual” fair use analysis and that libraries “are very risk-averse institutions that are accustomed to making these kinds of decisions . . . on an individual, case-by-case basis.”<sup>1516</sup>

The lack of specificity in the record and the text of the proposed exemption regarding how the works would be displayed or performed makes it difficult for the Register to evaluate the purpose and character of the proposed use. Although proponents’ intention in making the video games available off-premises may be to facilitate education and research, opponents have presented credible evidence that at least some users are likely to use video games made available pursuant to a broad proposed exemption for entertainment purposes.<sup>1517</sup> If a significant use of the works would be for the entertainment purposes for which the works were originally created, that would not be transformative or otherwise favor fair use under the first factor.<sup>1518</sup> The use of the preserved video games for entertainment purposes seems particularly likely given proponents’ unwillingness to impose user verification requirements or other measures that would make the video games more likely to be used solely for education or research purposes.

The Register finds that the first factor weighs in favor of fair use for computer software because the works will be made available for research and educational purposes. The addition of a limitation that the work be used by only one user at a time for a limited

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<sup>1515</sup> Tr. at 658:16–21 (Apr. 19, 2021) (Albert, SPN); *see also* SPN & LCA Class 14 Reply at 9 (“Qualifying institutions are capable of limiting remote access to authorized users and purposes; these conditions further ensure that remote access to video games will be fair use.”).

<sup>1516</sup> Tr. at 662:02–11 (Apr. 19, 2021) (Teitler, SPN).

<sup>1517</sup> ESA Class 14 Opp’n at 7–8 (citing 2018 ESA Class 8 Opp’n at 28) (noting several comments submitted for the 2018 video game preservation class that reflect the public’s desire to engage in entertainment uses of preserved works); *see also* Joint Creators & ESA Class 14 Post-Hearing Resp. at 3 (May 24, 2021) (describing how under the proposed exemption even an “eligible preservation organization” could be used as a “publicly-accessible online arcade”); Tr. at 722:02–19 (Apr. 19, 2021) (Englund, ESA) (referencing an archive currently offering an online arcade of emulated games to the public).

<sup>1518</sup> As discussed further under the fourth factor, the Register is concerned that the proposed exemption does not effectively restrict users who are not engaged in preservation, research, or education, which could also have a detrimental effect on the market for certain works.

time gives additional assurance that the works will be used for research and educational purposes.<sup>1519</sup> But the record provides cause for concern that video games may be used primarily for entertainment purposes, which would not favor fair use. Thus, the first factor does not weigh in favor of a finding of fair use with respect to video games.

Regarding the second fair use factor, proponents contend that the nature of the copyrighted works favors fair use because many of the programs they seek to access are functional works.<sup>1520</sup> While proponents recognize that “video games involve creative components,” they state that researchers and students “use video games as a tool of study, not to merely enjoy the game for its aesthetic and commercial entertainment purposes.”<sup>1521</sup> Proponents further state that the second factor “is never dispositive and often weighs neutrally when the creative works are used for transformative purposes, like the proposed preservation, research, and educational uses.”<sup>1522</sup> Opponents disagree and note that “productivity software is quite distinct from video games, which are far more expressive and primarily played for entertainment purposes.”<sup>1523</sup>

The Register does not agree that the presence of so-called functional programs in the proposed class tips this factor in favor of fair use. As the Register previously observed, “all computer programs are by definition functional, as they are designed to accomplish a specific task”; to conclude that software uses were uniformly favored under the second factor “would overlook cases which have found this factor to weigh against the fair use of computer programs.”<sup>1524</sup> While this factor favors fair use in the context of software other than video games, it does not do so with respect to games, which are often highly expressive in nature.<sup>1525</sup>

As to the third fair use factor, the amount and substantiality of the portion used, proponents concede that their activities may involve copying programs in their entirety,

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<sup>1519</sup> See SECTION 108 DISCUSSION DOCUMENT at 39 (proposing to limit access to “only one user at a time, for a limited time” for the distribution, public display, and public performance of certain works to protect against market harm).

<sup>1520</sup> SPN & LCA Class 14 Initial at 18.

<sup>1521</sup> *Id.* at 18–19.

<sup>1522</sup> SPN & LCA Class 14 Reply at 11.

<sup>1523</sup> Joint Creators Class 14 Opp’n at 6; ESA Class 14 Opp’n at 13.

<sup>1524</sup> See, e.g., *Wall Data Inc. v. Los Angeles Cty. Sheriff’s Dep’t*, 447 F.3d 769, 780 (9th Cir. 2006) (although the software products were “not purely creative,” the second factor weighed against fair use because they were developed over many years with substantial investment); *Cable/Home Commc’n Corp. v. Network Prods., Inc.*, 902 F.2d 829, 844 (11th Cir. 1990) (protective nature of embedded software that descrambled satellite-transmitted programming for subscribers weighed against a “decoding pirate chip” being a fair use).

<sup>1525</sup> 2015 Recommendation at 338.

but point to the Register’s prior acknowledgement that “it is sometimes necessary to copy an entire work to make a fair use.”<sup>1526</sup> Proponents suggest that “research uses often require access to the entire work to support complete examination of its elements.”<sup>1527</sup> They assert that “[p]roviding remote access to preserved software may, in some cases, be impossible without using the entire work,” as “[e]mulation often requires the entire codebase to run functional software.”<sup>1528</sup> Opponents disagree, arguing that because the proposed uses are non-transformative, this factor should not favor fair use.<sup>1529</sup> The Register concludes that this factor does not necessarily weigh against fair use, as it may be necessary to copy an entire work to provide researchers with access to the work for educational or research purposes.<sup>1530</sup>

Finally, proponents argue that the fourth fair use factor, the effect of the use upon the potential market for or value of the copyrighted work, favors fair use because only works that are no longer reasonably available in the commercial marketplace would be subject to the exemption.<sup>1531</sup> Proponents also claim that the proposed uses would not disrupt the market because such uses are transformative.<sup>1532</sup>

With respect to video games, proponents recognize that “game production firms may occasionally cycle works out of commerce as a market strategy,” but assert “the vast majority of out-of-commerce works are essentially abandoned and will never be reissued or translated to newer environments.”<sup>1533</sup> They further claim that, with respect to “superseded” video games,<sup>1534</sup> such works “are rarely available on digital marketplaces through the current rightsholder because games require continued support from the developer to work with new platforms,” and these games “are less

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<sup>1526</sup> SPN & LCA Class 14 Initial at 19 (citing 2018 Recommendation at 243).

<sup>1527</sup> *Id.* (also noting that “courts have discounted the impact of the third factor when the use of a copyrighted work is transformative”).

<sup>1528</sup> *Id.*

<sup>1529</sup> ESA Class 14 Opp’n at 13; Joint Creators Class 14 Opp’n at 7.

<sup>1530</sup> *Cf. HathiTrust*, 755 F.3d at 98–99 (holding that third factor favored fair use where creation of digital copies of entire books was necessary to enable full-text search).

<sup>1531</sup> SPN & LCA Class 14 Initial at 20–21 (“[R]emote access to preserved software does not cause market harm where the copyright owner has ceased exploiting the work commercially.”).

<sup>1532</sup> SPN & LCA Class 14 Reply at 11–12, 20.

<sup>1533</sup> *Id.* at 12.

<sup>1534</sup> Superseded video games are original or older works that have updated versions. SPN & LCA Class 14 Initial at 21.

likely to be maintained if the game is not lucrative or has few users and low demand.”<sup>1535</sup>

Joint Creators argue that “there is substantial evidence that older ‘retro’ and legacy video games are in increasing demand and are available in the marketplace at consumer-friendly price points.”<sup>1536</sup> ESA similarly contends that “[t]here is substantial market demand for legacy games” and provides several examples of video games that have been reintroduced into the market.<sup>1537</sup> ESA states that “publisher-authorized emulators of legacy games are an important existing and potential market for video game copyright owners” and provides current examples.<sup>1538</sup>

In light of the lack of evidence of a market for legacy software other than video games, the Register finds there is a low risk of market harm based on the software use cases described in Class 14(a). The Register cannot, however, say the same for the performance or display of video games, as contemplated in Class 14(b). As the Register’s 2015 Recommendation explained, “[t]he performance and display of a video game for visitors in a public space is a markedly different activity than efforts to preserve or study the game in a dedicated archival or research setting.”<sup>1539</sup> Opponents have presented evidence both that there is a substantial market for legacy video games and that those games are commonly reintroduced into the market.

Further, the Register shares opponents’ concerns that the exemption as proposed does not include appropriate safeguards to prevent users from further distributing or making entertainment uses of video games. Although proponents did not believe that it “make[s] sense to require particular, specific security measures” in their exemption,<sup>1540</sup> they agree that certain measures could “reasonably prevent mass circulation of [preserved] works.”<sup>1541</sup> While the Register can appreciate proponents’ desire to have more flexibility to implement their own security measures,<sup>1542</sup> including minimum

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<sup>1535</sup> *Id.* at 21–22.

<sup>1536</sup> Joint Creators Class 14 Opp’n at 2–3 (citing articles discussing the value of remastering or continuing to sell “classic” or “legacy” video games); *see also* ESA Class 14 Opp’n at 2–4.

<sup>1537</sup> ESA Class 14 Opp’n at 2–4, 7 (citing examples where Microsoft, Nintendo, Sony, Sega, Blizzard, Konami, Blaze Entertainment, Atari and other video game publishers re-released older video games, including for use on modern consoles or pre-installed on new consoles).

<sup>1538</sup> *Id.* at 7.

<sup>1539</sup> 2015 Recommendation at 342; Tr. at 720:21–721:07 (Apr. 19, 2021) (Englund, ESA).

<sup>1540</sup> Tr. at 684:24–685:01 (Apr. 19, 2021) (Albert, SPN).

<sup>1541</sup> SPN & LCA Class 14 Reply at 7 (referencing “emulation, time-limited loans, and other, similar measures”).

<sup>1542</sup> *Id.* at 6–7 (quoting SECTION 108 DISCUSSION DOCUMENT at 21).

security measures could address some of opponents' concerns regarding potential market harms. Further, the Register observes that section 108 provides "useful and important guidance as to Congress's intent regarding . . . the types of uses that are most likely to qualify as fair."<sup>1543</sup> The exclusion of audiovisual works (including video games) from the section 108(d) and (e) exemptions supports proponents' argument that copying and distribution of video games for education and research purposes is to be less likely to be considered fair use than similar activity involving other categories of works.

Balancing the four fair use factors, the Register finds that proponents have met their burden of showing that the proposed off-premises uses are likely to be fair with respect to software, but not with respect to video games. Having concluded that the proposed use is not likely to be noninfringing in the context of video games, the Register analyzes the remaining issues only with respect to software.

### **c. Causation**

Opponents argue that any asserted adverse effects on preservation are not caused by the use of TPMs or the anticircumvention prohibition.<sup>1544</sup> ESA points out that the current exemption already allows for preservation, and therefore the premises limitation has no impact on institutions' ability to engage in that activity.<sup>1545</sup> While proponents concur that works can be preserved under the current exemption, they contend that without an expanded exemption, post-preservation research and teaching activities would be inhibited.<sup>1546</sup>

The Register finds that proponents have met their burden of showing that the prohibition on circumvention of access controls limits their ability to make the noninfringing uses described above. Those activities would be adversely affected by the prohibition on circumvention to the extent they occur off-premises.

### **d. Asserted Adverse Effects**

The Class 14(a) proposed exemption is limited to circumvention for nonprofit preservation activities, including post-preservation research and teaching activities, and the parties' arguments under the section 1201 statutory factors address substantially overlapping issues. The Register considers these factors together and will identify any analytical differences.

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<sup>1543</sup> 2018 Recommendation at 267 (quoting 2015 Recommendation at 342).

<sup>1544</sup> ESA Class 14 Opp'n at 15; Joint Creators Class 14 Opp'n at 7 ("Petitioners do not establish that access controls are the cause of their purported problems.").

<sup>1545</sup> ESA Class 14 Opp'n at 15–16.

<sup>1546</sup> Tr. at 702:06–09 (Apr. 19, 2021) (Band, LCA); SPN & LCA Class 14 Initial at 4–14.

Under the first statutory factor, proponents argue that an expanded exemption will increase the availability for use of copyrighted works and that increased access to preserved works will encourage research and teaching.<sup>1547</sup> For the second factor—the availability for use of works for nonprofit archival, preservation, and educational purposes—proponents state that the “core purpose of this exemption is to allow preservationists to preserve, maintain, and increase availability of digital resources for research and educational purposes” and that “[a]llowing preservationists to furnish these resources offsite will enable a flourishing of research and scholarship.”<sup>1548</sup>

For the third statutory factor, which addresses the prohibition’s impact on “criticism, comment, news reporting, teaching, scholarship, or research,” proponents state that such restrictions “particularly burden[] research purposes” because “legacy software often requires obsolete hardware or software environments to run.”<sup>1549</sup> Regarding educational uses, proponents claim that “many libraries do not host classrooms where students could permissibly access software collections” and that the proposed exemption allows the use of preserved digital materials to benefit distance education.<sup>1550</sup> They note that the COVID-19 pandemic has highlighted the need for such programs.<sup>1551</sup>

The Register finds that these three statutory factors favor the requested exemption. As in the last rulemaking, proponents provided evidence that granting the exemption would benefit preservation, research, and education by making software available to researchers and teachers who would not be able to access these works without an exemption.

With respect to the fourth statutory factor, proponents repeat arguments made in the fair use analysis, including that “[t]he proposed exemption is limited to out-of-commerce works which are unavailable on primary markets.”<sup>1552</sup> As discussed above, the Register finds that no evidence has been presented that the proposed use would affect the market for software. The Register therefore finds that this factor favors that proposed exemption.

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<sup>1547</sup> SPN & LCA Class 14 Initial at 27–28.

<sup>1548</sup> *Id.* at 28.

<sup>1549</sup> *Id.* at 29.

<sup>1550</sup> *Id.*

<sup>1551</sup> SPN & LCA Class 14 Reply at 16–19.

<sup>1552</sup> *Id.* at 11; SPN & LCA Class 14 Initial at 20 (quoting *Am. Geophysical Union v. Texaco Inc.*, 60 F.3d 913, 930–31 (2d Cir. 1994)) (“The proposed uses do not have any ‘impact on potential licensing revenues for traditional, reasonable, or likely to be developed markets’ because there is literally no market for the software.”).



The Register does not find any additional factors relevant to the asserted adverse effects in these proposed classes.

Based on the foregoing, the Register finds that users are adversely affected by the prohibition on circumvention in their ability to engage in noninfringing preservation, research, or teaching activities involving software, or are likely to be so adversely affected during the next three years.

### 3. NTIA Comments

NTIA supports the adoption of expanded exemptions for Class 14, including by removing the premises limitation.<sup>1553</sup> It also “recommends that the eligibility requirements for libraries, archive[s], and museums in the software preservation exemption be adopted into the video game preservation exemption.”<sup>1554</sup> Further, NTIA would not object to proponents’ proposal to add a requirement that distributions under the exemption must be for “teaching, scholarship, or research,” though it believes such language is unnecessary.<sup>1555</sup>

NTIA agrees with the Register that the TEACH Act, the Music Modernization Act, and section 108 “would not serve as the exclusive basis for an exemption,” but believes that consideration of these provisions is appropriate when evaluating fair use.<sup>1556</sup> While acknowledging that section 108 generally does not cover audiovisual works, it does not find this statutory exclusion to be critical.<sup>1557</sup> Instead, NTIA states that it “remains optimistic that efforts to modernize Section 108 will be successful and can help address the needs expressed in this rulemaking, but it does not believe that the rulemaking should wait for such changes when there are clear needs today that the Librarian can address under her authority.”<sup>1558</sup>

While NTIA does not discount opponents’ concerns related to piracy and other market harms related to video games, it believes that “[o]n balance, the risk [to video games by an expanded exemption] can be reduced by the additional eligibility requirements found in the software preservation exemption, including the need for the institutions to adopt reasonable security requirements to protect the covered activities under the exemption

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<sup>1553</sup> NTIA Letter at 112.

<sup>1554</sup> *Id.*

<sup>1555</sup> *Id.* at 121–23; *see* 17 U.S.C. § 108(d)(1); SPN & LCA Class 14 Reply at 7.

<sup>1556</sup> NTIA Letter at 114; *see also id.* at 118 (“Section 108 should not be the sole consideration for noninfringing uses in this rulemaking process, as that section does not comprehensively address modern digital preservation scenarios.”).

<sup>1557</sup> *Id.* at 114 n.587.

<sup>1558</sup> *Id.*

and that their staff or volunteers provide professional services normally associated with the institution.”<sup>1559</sup> Like proponents, NTIA would not prescribe specific security measures via regulation.<sup>1560</sup>

#### 4. Conclusion and Recommendation

In light of the foregoing, the Register recommends granting an expanded exemption for Class 14(a) and modifying, but not removing the premises limitation from, the exemption for Class 14(b). As discussed, the heightened risk of market harm in the context of video games requires proponents to offer a more specific analysis than was provided here as to how their proposed exemption could be limited to prevent unauthorized uses of games made available off-premises. Given the much more limited market for the software described in Class 14(a), as well as the lack of opposition to that proposal, the Register concludes that a narrow expansion is warranted in that class.

The recommended Class 14(a) exemption will reflect the proponents’ request to remove the premises language, with two limitations: any off-premises distribution, display, or performance must be solely for the purposes of private study, scholarship, or research; and only one user will be able to access the preserved software at a time, and for a limited time. The purpose-based restriction is taken from section 108 and is intended to reflect Congress’s guidance regarding the appropriate scope of preservation activities.<sup>1561</sup> Similarly, the inclusion of single user and limited time restrictions will minimize the risk of substitutional use of the software.<sup>1562</sup>

The recommended Class 14(b) language does not incorporate proponents’ proposal to remove the premises limitation, but incorporates their request to import the existing software preservation exemption’s eligibility requirements for libraries, archives, and museums. The Register appreciates that libraries, archives, and museums may have legitimate interests in making commercially unavailable video games available offsite for use in teaching, research, or scholarship in appropriate circumstances. The Register is concerned, however, that the exemption, as proposed, does not contain appropriately tailored restrictions to ensure that uses would be limited to bona fide teaching, research, or scholarship uses and would affect the market for the original works. The Register is open to considering a more specific exemption request in the future upon a fuller record.

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<sup>1559</sup> *Id.* at 118–19 n.611.

<sup>1560</sup> *Id.* at 122–23.

<sup>1561</sup> See 17 U.S.C. § 108(d), (e) (restricting statutory exemption when a library or archives has “notice that the copy or phonorecord would be used for any purpose other than private study, scholarship, or research”); see also SPN & LCA Class 14 Reply at 2 (suggesting private study, scholarship, or research limitation for Class 14(b)).

<sup>1562</sup> See SECTION 108 DISCUSSION DOCUMENT at 38–39 (discussing the value of such conditions).

Accordingly, the Register recommends that the Librarian designate the following classes:

**(1) (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 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, local gameplay on a personal computer or video game console; or**

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

**(ii) Video games in the form of computer programs embodied in physical or downloaded formats that have been lawfully acquired as complete games, that do not require access to an external computer server for gameplay, and that are no longer reasonably available in the commercial marketplace, solely for the purpose of 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.**

**(iii) 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 (b)(17)(i)(B) or (b)(17)(ii) of this section.**

**(iv) For purposes of this paragraph (b)(17), the following definitions shall apply:**

**(A) For purposes of paragraphs (b)(17)(i)(A) and (b)(17)(ii) of this section, “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) For purposes of paragraph (b)(17)(i)(B) of this section, “complete games” means video games that meet the definition in paragraph (b)(17)(iv)(A) of this section, or that consist of both a copy of a game intended for a personal computer or video game console and a copy of the game’s code that was stored or previously stored on an external computer server.

(C) “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.

(D) “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.

(E) A library, archives, or museum is considered “eligible” if—

(1) 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;

(2) The library, archives, or museum has a public service mission;

(3) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(4) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

(5) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(17).

(2) (i) Computer programs, except video games, that have been lawfully acquired and that are no longer reasonably available in the commercial marketplace, solely for the purpose of lawful preservation of a computer program, or of digital materials dependent upon a computer program as a

condition of access, by an eligible library, archives, or museum, where such activities are carried out without any purpose of direct or indirect commercial advantage. Any electronic distribution, display, or performance made outside of the physical premises of an eligible library, archives, or museum of works preserved under this paragraph may be made to only one user at a time, for a limited time, and only where the library, archives, or museum has no notice that the copy would be used for any purpose other than private study, scholarship, or research.

(ii) For purposes of the exemption in paragraph (b)(18)(i) of this section, a library, archives, or museum is considered “eligible” if—

(A) 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;

(B) The library, archives, or museum has a public service mission;

(C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

(E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(18).

*O. Proposed Class 15: Computer Programs—3D Printing*

**1. Background**

**a. Summary of Proposed Exemption**

Proponents seek to expand the current exemption that permits the circumvention of access controls on computer programs in 3D printers to enable the use of non-manufacturer-approved feedstock. The current exemption language encompasses:

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.<sup>1563</sup>

Michael Weinberg filed a petition seeking to replace the word “feedstock” with “material,” and to remove the phrase “microchip-reliant” from the exemption.<sup>1564</sup> FSF filed comments generally supporting this exemption, but did not provide any evidence or substantive argument regarding the merits of the specific proposal.<sup>1565</sup> Mr. Weinberg’s petition was unopposed.

For the reasons discussed below, the Register recommends adoption of the proposed modifications.

**b. Overview of Issues**

As described in previous rulemakings, 3D printing involves “various technologies that translate digital files into physical objects by adding successive layers of material.”<sup>1566</sup> In 2018, the Office noted that “[t]hese materials or ‘feedstock’ are typically ABS or PLA plastics, but can also be metals, waste plastics, woods, or bio-tissue.”<sup>1567</sup>

Manufacturers use verification measures, such as microchips or other technology, to ensure that the printing material is manufacturer-approved before the printer’s software allows it to print 3D objects.<sup>1568</sup> Without circumventing these verification protocols,

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<sup>1563</sup> 37 C.F.R. § 201.40(b)(14).

<sup>1564</sup> Michael Weinberg Class 15 Pet. at 2.

<sup>1565</sup> FSF Class 15 Initial at 1.

<sup>1566</sup> 2018 Recommendation at 319 (quoting 2015 Recommendation at 356).

<sup>1567</sup> 2018 Recommendation at 319 (citing 2015 Recommendation at 357).

<sup>1568</sup> 2018 Recommendation at 320 (citing 2015 Recommendation at 357); *see* Weinberg Class 15 Initial at 1 (“Some 3D printers may limit their materials using technology that does not primarily rely on microchips for validation.”).

owners of TPM-protected 3D printers cannot use competitors' printing material or adjust their printers to use alternative material.

In the 2015 rulemaking, the Register found that "proponents [had] established that TPMs constrain the types of feedstock that can be used in 3D printers and that this is likely to adversely affect noninfringing uses of the software that controls that functionality."<sup>1569</sup> When recommending adoption of that exemption, the Register limited circumvention to TPMs that utilized "microchip-based verification systems," as the then-existing record "was limited to 3D printers that employ" such systems.<sup>1570</sup> The Register recommended the exemption using the word "feedstock," as that was the term proposed by the petitioner,<sup>1571</sup> but the Register's Recommendation used the terms "feedstock" and "material" interchangeably.<sup>1572</sup> The 2018 rulemaking retained that wording, which was not the subject of public discussion.<sup>1573</sup>

## 2. Discussion

As an initial matter, the Register views replacing the word "feedstock" with the word "material" as a non-substantive change. The Register agrees that the words "feedstock" and "material" are "functionally interchangeable,"<sup>1574</sup> as reflected in past rulemakings.<sup>1575</sup> Mr. Weinberg contends that "material" is "in much more common usage across the [3D printing] industry" and that amending the language "will help to avoid any unintended disputes or confusion."<sup>1576</sup> In support of his position, Mr.

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<sup>1569</sup> 2015 Recommendation at 376.

<sup>1570</sup> *Id.*

<sup>1571</sup> See 2015 Public Knowledge 3D Printers Pet. at 2.

<sup>1572</sup> 2015 Recommendation at 357. During previous rulemakings, commenters also used the two terms interchangeably. See, e.g., 2018 Stratasy's Class 12 Opp'n at 7, 9; 2015 Digital Right to Repair Class 26 Supp. at 820, 1026; 2015 Freedom Software Conservancy Class 26 Supp. at 1; 2015 Intellectual Property Owners Association Class 26 Opp'n at 3-4; 2015 Public Knowledge & LCA Class 26 Supp. at 3-5; 2015 Stratasy's Class 26 Opp'n at 5-6.

<sup>1573</sup> 2018 Recommendation at 319, 329.

<sup>1574</sup> Michael Weinberg Class 15 Initial at 2, 4; see *id.* (stating that word "material" is a "catch-all term for matter used in a wide range of 3D printing technologies as applied to a wide range of uses").

<sup>1575</sup> See 2015 Recommendation at 357; 2018 Stratasy's Class 12 Opp'n at 7, 9; 2015 Digital Right to Repair Class 26 Supp. at 820, 1026; 2015 Freedom Software Conservancy Class 26 Supp. at 1; 2015 Intellectual Property Owners Association Class 26 Opp'n at 3-4; 2015 Public Knowledge & LCA Class 26 Supp. at 3-5; 2015 Stratasy's Class 26 Opp'n at 5-6.

<sup>1576</sup> Michael Weinberg Class 15 Initial at 2, 4; see *id.* at 3 ("Although the term 'feedstock' is used in the 3D printing industry to identify the matter used by 3D printers to produce objects, it is much more common to use the term 'material.'").

Weinberg included screenshots of 3D printer manufacturers' websites showing use of the word "materials" instead of "feedstock" when discussing the different printing materials that can be used for 3D printing.<sup>1577</sup>

Concluding that changing the word "feedstock" to "material" does not substantively change the application of the exemption or have a particular impact on the statutory factors, the Register focuses the analysis on proponent's proposal to remove the term "microchip-reliant."

Mr. Weinberg requests that the phrase "microchip-reliant" be removed because "[s]ome 3D printers may limit their materials using technology that does not primarily rely on microchips for validation."<sup>1578</sup> He explains that "in recent years manufacturers in the 2D printing space have moved beyond . . . microchip-based verification techniques, relying on other methods for verifying the source of materials."<sup>1579</sup> Mr. Weinberg states that HP (a manufacturer of 2D and 3D printers) implemented "HP Auto Sense" technology for 2D printing that "uses optical scanners to identify [HP photo paper and] media used in printers, instead of a RFID-based verification technique."<sup>1580</sup> While "processing and responding to the signal produced by the optical sensors itself relies on microchips," Mr. Weinberg asserts that "the technical role of microchips in the process could raise questions about the applicability of the exemption" in cases of 3D printers relying on other methods to verify the source of materials, even though users would circumvent TPMs for identical purposes (*i.e.*, interoperability with third-party materials).<sup>1581</sup>

The Office has previously concluded that TPMs applied to 3D printers are often employed to limit access to works protected by copyright, and Mr. Weinberg's submissions indicate that these additional TPMs operate in the same manner.<sup>1582</sup> Similarly, because the expansion is directed at the same uses the Office has previously

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<sup>1577</sup> See Michael Weinberg Class 15 Initial at 3; *MAKERBOT MATERIALS FOR METHOD*, MAKERBOT, <https://www.makerbot.com/3d-printers/materials/method-materials/> (last visited Oct. 13, 2021); *OUR MATERIALS*, STRATASYS, <https://www.stratasys.com/materials/search> (last visited Oct. 13, 2021); *Metal 3D Printing - The DMLS Technology How Does DMLS Work in Detail?*, EOS, <https://www.eos.info/en/industrial-3d-printing/additive-manufacturing-how-it-works/dmls-metal-3d-printing> (last visited Oct. 13, 2021); *3D Printing Materials & Binders*, EXONE, <https://www.exone.com/en-US/3d-printing-materials-and-binders> (last visited Oct. 13, 2021).

<sup>1578</sup> Michael Weinberg Class 15 Initial at 1.

<sup>1579</sup> *Id.* at 4.

<sup>1580</sup> *Id.*

<sup>1581</sup> *Id.* at 4–5.

<sup>1582</sup> See 2018 Recommendation at 322 ("find[ing] that at least some works included in the proposed expanded class are protected by copyright"); *id.* at 322 n.1954 (similar); 2015 Recommendation at 367 (similar).



concluded are likely to be fair, and because Mr. Weinberg indicates that these additional TPMs perform the same function as microchip-based verifications, the Register finds that Mr. Weinberg has met his burden of showing that the current qualifying language limits his ability to make the noninfringing uses of 3D printer operating systems.<sup>1583</sup>

Regarding the section 1201 statutory factors, Mr. Weinberg adopts the “analysis of the adverse effects on noninfringing uses in the 2018 Recommendation.”<sup>1584</sup> In 2018, the Acting Register adopted the conclusions from the 2015 Recommendation with respect to statutory factors one through four, finding that the record had not expanded or changed.<sup>1585</sup> The Register does so here again. Regarding the first statutory factor, the availability for use of copyrighted works, the “record does not demonstrate that [the proposed] exemption would threaten the availability of [3D printer operating] software, or, indeed, that a viable market for this type of software exists separate from the printers themselves.”<sup>1586</sup> Again, the second and third factors, concerning the availability for use of works for nonprofit archival, preservation, and educational purposes and the impact that the prohibition on circumvention has on criticism, comment, news reporting, teaching, scholarship, or research, “do not appear to be germane to this class,” and no evidence was set forth concerning these factors.<sup>1587</sup> With respect to the fourth factor, there is nothing to disrupt the prior conclusions that “there is no independent market for 3D printer operating software,”<sup>1588</sup> and no evidence was provided “to suggest that the 3D printers operate as secure distribution platforms for creative works”<sup>1589</sup> or that the exemption is “likely to diminish the value of a 3D printer’s copyrighted software.”<sup>1590</sup>

Under the current record, the Register concludes that removal of the term “microchip-reliant” may facilitate additional beneficial or innovative uses of alternate material, without altering the overall analysis upon which this exemption has been previously adopted. The record, while limited, demonstrates that 3D printers may use TPMs

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<sup>1583</sup> See 2018 Recommendation at 325 (finding proposed uses likely to be fair); 2015 Recommendation at 367–72 (same).

<sup>1584</sup> Michael Weinberg Class 15 Initial at 2.

<sup>1585</sup> 2018 Recommendation at 326; see 2015 Recommendation at 372–75. In 2018, the Acting Register also focused on safety considerations under the fifth factor, which are not the subject of this rulemaking. See 2018 Recommendation at 326–28.

<sup>1586</sup> 2018 Recommendation at 326 (first alteration added) (quoting 2015 Recommendation at 372).

<sup>1587</sup> 2015 Recommendation at 373.

<sup>1588</sup> 2018 Recommendation at 326 (citing 2015 Recommendation at 373–74).

<sup>1589</sup> 2018 Recommendation at 326 (citing 2015 Recommendation at 374).

<sup>1590</sup> 2015 Recommendation at 374.

besides microchips to ensure use of manufacturers' printing materials<sup>1591</sup> and that use of the proposed exemption would be for the identical purpose as the existing exemption. Thus, the Register does not view the removal of "microchip-reliant" as substantively altering the balance of the statutory factors, which favors granting the exemption.

### 3. NTIA Comments

NTIA agrees that an expansion of the current exemption is warranted. It states that replacing "feedstock" with the term "material" incorporates "commonplace terminology" into the regulatory language and furthers NTIA's longstanding position that exemptions "should be intelligible to the average user in a class."<sup>1592</sup> NTIA also notes that the Office has previously used the two terms interchangeably,<sup>1593</sup> but understands that the replacement is not meant to "materially alter" the scope of the class.<sup>1594</sup>

Additionally, NTIA recommends removing the "microchip-reliant" language. While it acknowledges that the record for non-microchip-based verification methods was limited, it "cautions against being overly specific in describing the types of TPMs at issue," to ensure that exemptions address actual or likely adverse effects.<sup>1595</sup> Further, NTIA states that "eliminating the 'micro-chip reliant' text would not inappropriately expand the class of work[s] covered," but would "reduce uncertainty and risk" pertaining to noninfringing activities that are covered.<sup>1596</sup>

### 4. Conclusion and Recommendation

After consideration, the Register recommends revising the exemption by replacing the word "feedstock" with the word "material," and removing the term "microchip-reliant" from the exemption. The Register recommends that the Librarian designate the following class:

**Computer programs that operate 3D printers that employ technological measures to limit the use of material, when circumvention is accomplished solely for the purpose of using alternative material and**

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<sup>1591</sup> See Michael Weinberg Class 15 Initial at 4 (noting that "the underlying intent and behavior of manufacturers using these [verification] technologies is the same").

<sup>1592</sup> NTIA Letter at 126.

<sup>1593</sup> *Id.* at 126 n.647.

<sup>1594</sup> *Id.* at 126 (quoting Michael Weinberg Class 15 Initial at 4).

<sup>1595</sup> NTIA Letter at 127.

<sup>1596</sup> *Id.* at 129.

not for the purpose of accessing design software, design files, or proprietary data.

*P. Proposed Class 16: Computer Programs—Copyright License Investigation*

**1. Background**

**a. Summary of Proposed Exemption**

SFC petitions for a new exemption that would permit the circumvention of access controls for the purpose of investigating whether a particular computer program includes free and open source software (“FOSS”), and if so, whether the use of the program complies with applicable license terms.<sup>1597</sup>

SFC describes FOSS as “software developed by volunteer communities and licensed for the benefit of everyone.”<sup>1598</sup> FOSS can be “freely used, modified, and shared . . . without a licensing fee or royalty obligation,” provided that users comply with the terms of any applicable FOSS license.<sup>1599</sup> Common conditions include requirements that users “provide a copy of the copyright notice or author attribution and a copy of the FOSS license within the software or its documentation,”<sup>1600</sup> or agree to license any derivative works under the same FOSS license terms and provide a copy of the source code for the modified software.<sup>1601</sup> Where a FOSS user fails to comply with the license conditions, organizations such as SFC may seek to enforce compliance by requiring the licensee to amend relevant documentation, provide a copy of the source code for any derivative work based on the FOSS, and/or license the derivative work on the same FOSS license conditions.<sup>1602</sup> SFC’s initial petition requested an exemption to investigate potential infringement of these FOSS programs, as well as to make “lawful use of computer programs (e.g., copying, modifying, redistributing, and updating free and open source software (FOSS)).”<sup>1603</sup>

SFC and FSF submitted comments in support of the proposed exemption.<sup>1604</sup> Opposition comments were received from DVD CCA and AACCS LA; EDA, and AED; Joint Creators;

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<sup>1597</sup> SFC Class 16 Pet. at 2.

<sup>1598</sup> *Id.* at 1

<sup>1599</sup> SFC Class 16 Initial at 2; *see also* FSF Class 16 Initial at 1 (stating that “users are free to study, share, and improve the software”).

<sup>1600</sup> SFC Class 16 Initial at 2 & n.5 (citing *The MIT License*, Open Source Initiative, <https://opensource.org/licenses/MIT> (last visited Oct. 15, 2021)).

<sup>1601</sup> Software Study at 62 (citing *GNU General Public License Version 3*, GNU.org (June 29, 2007), <https://www.gnu.org/licenses/gpl-3.0.en.html>); SFC Class 16 Initial at 2 (same).

<sup>1602</sup> *See* SFC Class 16 Initial at 2, 4–5.

<sup>1603</sup> SFC Class 16 Pet. at 2.

<sup>1604</sup> SFC Class 16 Initial; FSF Class 16 Initial.

and Marcia Wilbur.<sup>1605</sup> The opposition commenters raised several objections concerning the scope of the proposed exemption, including that it was not properly limited to a particular class and that it lacked “standard limitations common to previously granted exemptions.”<sup>1606</sup>

In response, SFC refined the scope of the exemption in its reply comment, proposing the following amended language:

Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates, the circumvention [is] solely for the purpose of investigating a potential copyright infringement where the circumvention is performed by, or at the direction of, a party that has standing to bring a breach of license claim and where such circumvention does not constitute a violation of applicable law.<sup>1607</sup>

SFC’s amended proposal adopts several of opponents’ suggestions: it (1) removes reference to making general lawful uses from the original proposal; (2) states that circumvention must be “solely for the purpose of” the covered activities; (3) limits the class of eligible users; (4) adds a prohibition against violating other laws; and (5) requires that the person engaged in circumvention must have “lawfully acquired [the] device or machine on which the computer program operates.”<sup>1608</sup> For purposes of the public hearing on this exemption, the amended language from SFC’s reply comment was considered the operative proposal.<sup>1609</sup> The Register likewise evaluates the proposed exemption and the remaining issues based on the amended language.

For the reasons discussed below, the Register recommends that the proposed exemption be granted.

### **b. Overview of Issues**

Although SFC’s amendments to the exemption language largely moot a number of discrete issues raised by opponents, opponents reiterate overarching objections to the proposal as a whole. Opponents primarily dispute that circumvention is necessary to investigate potential infringement, suggesting that FOSS licensors could instead obtain

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<sup>1605</sup> DVD CCA & AACCS LA Class 16 Opp’n; EDA & AED Class 16 Opp’n; Joint Creators Class 16 Opp’n; Marcia Wilbur Class 16 Opp’n.

<sup>1606</sup> Joint Creators Class 16 Opp’n at 4–7. *See also* DVD CCA & AACCS LA Class 16 Opp’n at 5; EDA & AED Class 16 Opp’n at 5–6.

<sup>1607</sup> SFC Class 16 Reply at 3.

<sup>1608</sup> *Id.*

<sup>1609</sup> *See* Tr. at 265:23–277:17 (Apr. 7, 2021) (Smith, U.S. Copyright Office; Williams, Joint Creators; Ayers, DVD CCA & AACCS LA; Chestek, SFC).

the information by requesting it from alleged infringers directly or demanding it in discovery in litigation.<sup>1610</sup> Other questions concerning the scope and language of the proposed exemption include the following:

*Concerns related to specific types of machines or devices, and types of software.* SFC initially provided a list of various device types, but did not otherwise distinguish between types of devices or machines that could be investigated for potential software infringement.<sup>1611</sup> SFC likewise made no distinction concerning the types of computer programs that may contain infringing code.<sup>1612</sup> In refining its request to “[c]omputer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates,” SFC notes that the amended class is the same as that for the existing exemption for security research.<sup>1613</sup> Opponents contend the evidentiary record is inadequate to support an exemption for this relatively broad category of devices.<sup>1614</sup> DVD CCA and AACCS LA specifically object to the inclusion of DVD and Blu-ray players, expressing concern that circumvention of embedded software on these devices would expose cryptographic keys and facilitate piracy.<sup>1615</sup> Joint Creators request video game consoles and set-top boxes be excluded from any exemption, particularly given the lack of evidence of FOSS infringement and threats of piracy and unauthorized access to expressive copyrighted works posed by circumvention.<sup>1616</sup> And EDA and AED warn that, in the context of vehicles, the exemption raises issues of safety, compliance with other regulations and vehicle engineering standards, and exposure of trade secrets.<sup>1617</sup>

*Purpose of investigation.* Whether, as initially requested, the proposed exemption should extend to investigating infringement of proprietary software as well as FOSS remains unresolved.<sup>1618</sup> SFC states that it is “unaware of any facts or policy” that would support distinguishing between the types of software being infringed, while acknowledging that

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<sup>1610</sup> See DVD CCA & AACCS LA Class 16 Opp’n at 7; Joint Creators Class 16 Opp’n at 2, 4.

<sup>1611</sup> SFC Class 16 Initial at 5–6 (providing examples including routers, televisions, thermostats, and doorbells); SFC Class 16 Pet. at 2.

<sup>1612</sup> See SFC Class 16 Initial at 6.

<sup>1613</sup> SFC Class 16 Reply at 3.

<sup>1614</sup> See DVD CCA & AACCS LA Class 16 Opp’n at 4; EDA & AED Class 16 Opp’n at 4–5; Joint Creators Class 16 Opp’n at 1–3.

<sup>1615</sup> See DVD CCA & AACCS LA Class 16 Opp’n at 9, 13–18.

<sup>1616</sup> See Joint Creators Class 16 Opp’n at 2–3, 6–7.

<sup>1617</sup> See EDA & AED Class 16 Opp’n at 8–12.

<sup>1618</sup> See SFC Class 16 Reply at 3.

its focus is specifically on FOSS.<sup>1619</sup> Opponents generally disfavor allowing the exemption to include investigating infringement of proprietary software.<sup>1620</sup> In the event the Register were to conclude that the exemption should be limited to investigating potential FOSS infringement, SFC proposed additional, alternative language for consideration.<sup>1621</sup>

*Eligibility to investigate software infringement.* Under SFC's proposal, any circumvention to investigate a potential infringement must be "performed by, or at the direction of, a party that has standing to bring a breach of license claim."<sup>1622</sup> Opponents express concern that bad actors might abuse the exemption under the guise of investigating infringement without any reasonable basis for believing the underlying computer program might contain FOSS. To address this, opponents propose that users have sufficient knowledge or a "particularized reason" to believe that a computer program may contain FOSS before circumventing TPMs to further investigate.<sup>1623</sup>

*Post-circumvention obligations.* Opponents express concerns about devices being left exposed after circumvention takes place, particularly if no FOSS violation is found, arguing that this may facilitate piracy or unauthorized access to expressive works.<sup>1624</sup> Joint Creators propose additional safeguards, such as a requirement "similar to Section 117 that the device/program be restored/re-encrypted after the investigation."<sup>1625</sup>

## 2. Discussion

### a. Scope of the Proposed Class

In its petition, SFC sought to allow access to computer programs on "the hard drive, firmware, or RAM, or other permanent or temporary storage media of a computer or

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<sup>1619</sup> *Id.* at 3–4; see SFC Class 16 Initial at 6 ("[T]he rationale that justifies this exception for FOSS is equally applicable to all software. A copyright owner-licensor should not have to break the law to determine whether their copyright is being infringed.").

<sup>1620</sup> See Tr. at 300:14–301:04 (Apr. 7, 2021) (Williams, Joint Creators).

<sup>1621</sup> See SFC Class 16 Reply at 3–4 (adding the language limiting the exemption to investigating use of "free and open source computer programs").

<sup>1622</sup> SFC Class 16 Reply at 3.

<sup>1623</sup> See Joint Creators Class 16 Opp'n at 3; EDA & AED Class 16 Opp'n at 5 (noting the absence of any justification for investigating "such as a judicial or administrative order, or even reasonable suspicion of infringing use"); Tr. at 268:16–269:09 (Apr. 7, 2021) (Williams, Joint Creators); Tr. at 270:15–271:03 (Apr. 7, 2021) (Ayers, DVD CCA & AACCS LA).

<sup>1624</sup> See Joint Creators Class 16 Opp'n at 6; DVD CCA & AACCS LA Class 16 Opp'n at 18–19; Tr. at 290:25–291:23 (Apr. 7, 2021) (Ayers, DVD CCA & AACCS LA); Tr. at 302:23–303:17 (Williams, Joint Creators).

<sup>1625</sup> Joint Creators Class 16 Opp'n at 7; see Tr. at 268:06–15 (Apr. 7, 2021) (Williams, Joint Creators).

embedded computing device (including ‘internet-of-things’ devices like IP-enabled doorbell cameras, baby monitors, and thermostats; smart phones and other portable computing devices; laptop and desktop computers; and networking devices such as routers).”<sup>1626</sup> SFC expanded on this by providing a list of types of devices for which SFC has received “credible reports” that the manufacturer does not comply with FOSS license terms.<sup>1627</sup> SFC cites a recent survey in which 99% of audited codebases contained open source software,<sup>1628</sup> and asserts that these devices are “all likely to be using FOSS.”<sup>1629</sup>

As noted above, SFC significantly amended the proposed class to mirror the language of the existing security research exemption, including by explicitly requiring that the device or machine be “lawfully acquired.” Under the amended proposal, any circumvention must be undertaken “solely for the purpose of” investigating a potential infringement. SFC also circumscribed the class of eligible users by requiring that “the circumvention is performed by, or at the direction of, a party that has standing to bring a breach of license claim.”<sup>1630</sup>

Opponents argue that an exemption covering software, generally, would fail to satisfy the legislative history’s requirement that a class should be “a narrow and focused subset of the broad categories of works . . . identified in Section 102 of the Copyright Act.”<sup>1631</sup>

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<sup>1626</sup> SFC Class 16 Pet. at 2.

<sup>1627</sup> SFC Class 16 Initial at 5–6 (servers, laptop and desktop computers, remote computing environments/cloud virtual machines, network attached storage (NAS) devices, tablet computers, Android phones, routers/switches/access points, modems, speakers and other audiovisual equipment, television sets, set-top boxes, DVRs, gaming consoles, VoIP phones/analog telephone adapters, video calling appliances, IP cameras, cars, aerial drones, industrial automation machines/computers numerical control (CNC) routers, thermostats, dashcams, alarm systems, doorbells, watches).

<sup>1628</sup> See *id.* at 3 & n.7 (citing SYNOPSIS, 2020 OPEN SOURCE SECURITY AND RISK ANALYSIS REPORT 7 (2020)).

<sup>1629</sup> *Id.* at 6. SFC indicated that, in some instances, a forensic investigation of the device is conducted to investigate and confirm the existence of FOSS—one that would presumably require circumvention of TPMs. SFC declined to disclose how it was gaining access to TPM-protected software, also noting that infringers have used this information to implement countermeasures to thwart investigations. See *id.* at 4 & n.16, 6–7; Tr. at 279:16–280:02 (Apr. 7, 2021) (Chestek, SFC); Tr. at 305:02–06 (Apr. 7, 2021) (Chestek, SFC); Tr. at 306:12–20 (Apr. 7, 2021) (Smith, U.S. Copyright Office; Chestek, SFC).

<sup>1630</sup> SFC Class 16 Reply at 3.

<sup>1631</sup> Commerce Comm. Report at 38; see DVD CCA & AACCS LA Class 16 Opp’n at 2, 5 (stating that, like the repair and modification proposals in class 12, this proposal is “impermissibly broad”); EDA & AED Class 16 Opp’n at 4–5 (stating that the proposed class “sweepingly applies



Opponents observe that SFC provides only “vague references or suggestions” relating to the pervasiveness of software generally.<sup>1632</sup> Opponents observe parallels to the 2018 rulemaking, where the Acting Register declined to recommend a proposed expansion of the repair exemption to a “broad panoply” of software-enabled devices, and assert that similar evidentiary shortcomings exist in SFC’s proposal.<sup>1633</sup> DVD CCA and AACS LA noted that, in 2018, the Acting Register refined the class for the expanded repair exemption to the “types of devices for which there [was] a cognizable record,” but argued that a more limited class *cannot* be refined from the current record and such an approach is “essentially impossible.”<sup>1634</sup>

As an initial matter, the Register concludes that the proposed use—investigating *software* copyright infringement—is appropriately limited to investigating *FOSS* infringement because *FOSS* investigations predominate the evidentiary record.<sup>1635</sup> Second, the Register concludes that any exemption should require users to have a good-faith, reasonable belief in the need for the investigation before engaging in circumvention. Indeed, SFC indicated that such a “generalized” standard would be acceptable as it aligns with SFC’s existing practices to “observ[e] the attributes and behavior of the device or the software” and “review[] its advertising or its documentation” to “make an educated guess” about whether a program contains *FOSS*.<sup>1636</sup>

Further, the Register determines that it is appropriate to consider a proposed exemption without further enumerating specific devices or machines within which *FOSS* software may be embedded. The Office has considered similar issues in previous rulemakings. As proponents note, in 2018, the Acting Register considered the limitation on types of devices eligible for the security research exemption and, finding the scope of the

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to an unlimited set of ‘users’ for all ‘computer programs’—irrespective of any particular type of machine or device—for any ‘lawful uses’” and is “ambiguous as to the ‘copyrighted works’ subject to the proposed exemption”); Joint Creators Class 16 Opp’n at 1–3 (stating that the proposed class is “too broad”).

<sup>1632</sup> DVD CCA & AACS LA Class 16 Opp’n at 4–8.

<sup>1633</sup> *Id.* at 5–6 (citing 2018 Recommendation at 191–92); *see also* EDA & AED Class 16 Opp’n at 6–7 (“TPMs will vary immensely by copyrighted work.”); Joint Creators Class 16 Opp’n at 3 (“It is impossible to address all of the access controls and methods of circumvention covered by the petition in this proposed class because SFC seeks an exemption covering circumvention of all access controls protecting computer programs.”).

<sup>1634</sup> *See* DVD CCA & AACS LA Class 16 Opp’n at 6 (quoting 2018 Recommendation at 192); *see also* Joint Creators Class 16 Opp’n at 6–7.

<sup>1635</sup> *See* SFC Class 16 Reply at 3–4; SFC Class 16 Initial at 6 (“[SFC] seeks approval of this request for its own work investigating breach of *FOSS* licenses . . . .”); Tr. at 300:14–301:04 (Apr. 7, 2021) (Williams, Joint Creators); Tr. at 312:11–313:01 (Apr. 7, 2021) (Chestek, SFC).

<sup>1636</sup> SFC Class 16 Initial at 4; Tr. at 299:13–25 (Amer, U.S. Copyright Office; Chestek, SFC).

proposed class appropriate, recommended that the exemption be broadened to encompass “[c]omputer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates.”<sup>1637</sup> The Acting Register explained that the renewed proposal appropriately described “a particular class” because “computer programs are a subcategory of literary works” and the “proposed class . . . is further refined by reference to a specific set of permitted activities.”<sup>1638</sup> The Acting Register observed that computer programs are not an “inherently overbroad category”; rather, a class of works may be appropriate in scope “where the record establishes that users of such works are similarly affected by the prohibition on circumvention, and where . . . the class is further narrowed by reference to particular types of uses.”<sup>1639</sup>

Here, proponents have submitted evidence that users are being adversely affected in the same way by TPMs on computer programs across various types of devices and machines. SFC has reported receiving “credible reports” that multiple types of devices have used FOSS in a manner that does not comply with the licensing conditions.<sup>1640</sup> SFC and FSF report that they receive a combined total of 286 reports of FOSS infringement annually;<sup>1641</sup> SFC added that it can only investigate half of the reports it receives due to the pervasiveness of the issue.<sup>1642</sup> As SFC notes, “[s]oftware is no longer just the purview of companies with business models based primarily on the exploitation of copyright,” but now is offered by a variety of businesses as “a component of their primary product or service offering.”<sup>1643</sup> Moreover, the class is further refined by the limited nature of the proposed use. Despite the differences in the type of TPM on a particular device, the objective of the requested circumvention is the same: investigation of FOSS license violations. Thus, the Register concludes that the proposed class is sufficiently defined to constitute “a particular class of works” within the meaning of the statute.

Although the Register concludes that there are sufficient commonalities as to how software would be investigated and by whom to make a device-agnostic class—rather than a device-by-device analysis—appropriate here, she acknowledges opponents’

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<sup>1637</sup> 2018 Recommendation at 289, 313–14.

<sup>1638</sup> *Id.* at 289.

<sup>1639</sup> *Id.* (citing House Manager’s Report at 7).

<sup>1640</sup> SFC Class 16 Initial at 5.

<sup>1641</sup> *See* FSF Class 16 Initial at 2; Tr. at 278:17–279:15 (Apr. 7, 2021) (Chestek, SFC).

<sup>1642</sup> SFC Class 16 Initial at 3–4.

<sup>1643</sup> SFC Class 16 Initial at 5; *see* Tr. at 297:16–20 (Apr. 7, 2021) (Chestek, SFC) (“90 percent of [smart devices] run on Linux”); *see also* SYNOPSIS, 2021 OPEN SOURCE SECURITY AND RISK ANALYSIS REPORT 8 (2021), *available at* <https://www.synopsys.com/software-integrity/resources/analyst-reports/open-source-security-risk-analysis.html>.

objections to certain types of devices and machines being included in the class. Accordingly, the Register will consider opponents' piracy-related and other device-specific concerns below in her discussion of the fourth fair use factor and the statutory factors under section 1201(a)(1)(C).

### **b. Works Protected by Copyright**

The proposed exemption implicates at least two types of computer programs. The operating systems and applications stored on the devices or machines on which they operate constitute "computer programs" within the meaning of section 101.<sup>1644</sup> Further, the FOSS that may be contained within those operating systems and applications constitute computer programs.<sup>1645</sup> The Register therefore finds that the works included in the proposed class are protected by copyright.

### **c. Asserted Noninfringing Uses**

SFC asserts that it is fair use to reverse engineer a computer program to investigate whether it contains FOSS code but does not satisfy FOSS license conditions.<sup>1646</sup> SFC also argues that where reverse engineering is unnecessary, reading the computer code to determine whether it contains FOSS is a noninfringing use.<sup>1647</sup> SFC contends that opponents do not contest that the proposed use is noninfringing, but instead focus on the "potential for knock-on risks after circumvention."<sup>1648</sup> Indeed, opponents express concern that circumvention of TPMs to access computer programs on devices that also contain or provide access to other expressive works could harm the market for those works.<sup>1649</sup> EDA and AED also argue that such investigatory activities could be disruptive to expectations of FOSS licensees who may be relying on "contractually enumerated methods for making open source components available to downstream users at the election of the licensee."<sup>1650</sup> By "usurp[ing] the discretion provided in the license," they argue, the proposed exemption would interfere with license rights and with "security measures that properly protect other software components."<sup>1651</sup>

Ultimately, the Register concludes that investigating computer programs for the purpose of identifying potential FOSS infringement is likely to be a fair use. Regarding

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<sup>1644</sup> See 2018 Recommendation at 194; Software Study at 2–3; SFC Class 16 Initial at 7.

<sup>1645</sup> See, e.g., SFC Class 16 Initial at 1, 7.

<sup>1646</sup> See *id.* at 8.

<sup>1647</sup> See *id.*

<sup>1648</sup> SFC Class 16 Reply at 4.

<sup>1649</sup> See DVD CCA & AACCS LA Class 16 Opp'n at 13–18; Joint Creators Class 16 Opp'n at 6.

<sup>1650</sup> EDA & AED Class 16 Opp'n at 5.

<sup>1651</sup> *Id.*

the first fair use factor, the purpose and character of the use, the Register agrees that both reverse engineering and examining copyrighted software code to investigate potential infringement are noninfringing purposes. Courts have found reverse engineering computer programs to analyze their functionality to be transformative.<sup>1652</sup> The Supreme Court has favorably cited such cases to illustrate types of uses—specifically of computer programs—that can be deemed fair.<sup>1653</sup> The Office has taken a similar approach in past rulemakings, relying on these cases to conclude that, at least in some circumstances, jailbreaking devices to access their firmware is likely to be a fair use.<sup>1654</sup> Thus, accessing a computer program to understand it is a purpose that the courts and the Office have consistently determined favors fair use.

The second fair use factor, the nature of the copyrighted work, also favors finding a fair use. The record indicates that the computer programs that proponents typically investigate are largely functional, rather than expressive, in nature. All of the examples provided were of programs embedded within devices to enable or enhance device functionality.<sup>1655</sup> Opponents do not dispute that the computer programs proponents seek to access are functional. Rather, they raise concerns that circumvention of TPMs on devices such as video game consoles and disc players would jeopardize protection of other, more expressive works.<sup>1656</sup> These concerns are considered below in the adverse effects analysis.

On the third fair use factor, participants do not squarely address the amount and substantiality of the work used. It appears that the proposal anticipates using up to the entirety of the work to determine where FOSS may exist within a computer program. As the Office has previously noted in the context of repair, “most computer programs do not have a specific beginning, middle, or end, which can make it difficult to identify the source of the problem within the code.”<sup>1657</sup> Similar logic applies here, where users are seeking to identify instances of FOSS in the source code, which may require copying the

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<sup>1652</sup> See *Sony Comput. Ent. v. Connectix, Inc.*, 203 F.3d 596, 608 (9th Cir. 2000); *Sega Enters. v. Accolade*, 977 F.2d 1510, 1520 (9th Cir. 1992); *Atari Games Corp. v. Nintendo of Am. Inc.*, 975 F.2d 832, 843–44 (Fed. Cir. 1992) (determining that reverse engineering an authorized copy of a work to understand and distinguish protected from unprotected elements of a work constitutes fair use).

<sup>1653</sup> See *Google LLC v. Oracle Am., Inc.*, 141 S. Ct. 1183, 1198–99 (2021).

<sup>1654</sup> See 2018 Recommendation at 167–72 (jailbreaking voice assistant devices); 2015 Recommendation at 213–15 (jailbreaking smart televisions); *id.* at 188–89 (jailbreaking smartphones and all-purpose mobile computing devices).

<sup>1655</sup> See SFC Class 16 Initial at 3–5 (“smart” doorbells, wireless routers, televisions).

<sup>1656</sup> See DVD CCA & AACS LA Class 16 Opp’n at 13–18; Joint Creators Class 16 Opp’n 6–7.

<sup>1657</sup> Software Study at 41.

code into a test environment for review.<sup>1658</sup> Moreover, even where the entirety of the work is used, that is not dispositive under the third factor, as courts have permitted such uses where necessary to achieve a transformative purpose.<sup>1659</sup> Indeed, in the previous two rulemakings, the Office noted that even if the proposed activity would involve reproducing a copyrighted program in its entirety, this factor should be given little weight in those circumstances.<sup>1660</sup> Applying that reasoning here, the Register finds the amount used is reasonable relative to the intended purpose.

As to the fourth fair use factor, the effect of the use upon the potential market for or value of the copyrighted work, SFC argues that investigation of TPM-protected software will have no negative effect on the value of such works because the activity “does not create any publicly available copy of the accused software.”<sup>1661</sup> It further contends that the investigating party has an incentive not to distribute the TPM-circumvented software because “[i]f not kept confidential, the owner of the accused work would have a claim of infringement of the copyright of any non-FOSS portions of the accused work.”<sup>1662</sup> SFC also argues that an infringer who “incorporat[es] FOSS without complying with the license” deprives FOSS developers of “substantial benefits,” including “genera[ting] market share for their programs by providing certain components free of charge” and enhancing their reputations in the field.<sup>1663</sup> Proponents further assert that investigating FOSS infringement provides a “public benefit” that “assures all consumers receive rights guaranteed by copyleft licenses.”<sup>1664</sup>

In response, opponents suggest that the exemption could harm the market for devices, including video game consoles, set-top boxes, and disc players, in cases where the device software and the TPMs protecting the system serve as a bulwark against piracy.<sup>1665</sup> Opponents assert that once the firmware on these devices is accessed, irrespective of the purpose, the digital ecosystem is compromised such that it can no

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<sup>1658</sup> See SFC Class 16 Initial at 6–7.

<sup>1659</sup> See *Google*, 141 S. Ct. at 1189 (“The ‘substantiality’ factor will generally weigh in favor of fair use where . . . the amount of copyright was tethered to a valid, and transformative, purpose.”); *Sony Comput. Ent. v. Connectix*, 203 F.3d 596, 605–06 (9th Cir. 2000).

<sup>1660</sup> See 2018 Recommendation at 204; 2015 Recommendation at 235–36.

<sup>1661</sup> SFC Class 16 Initial at 10.

<sup>1662</sup> *Id.* at 10 n.33.

<sup>1663</sup> *Id.* at 9–10 & n.32 (quoting *Jacobsen v. Katzer*, 535 F.3d 1373, 1379 (Fed. Cir. 2008)).

<sup>1664</sup> *Id.* at 3–5 (citing examples of where enforcement of FOSS license terms led to open-source wireless router software and replacement software for Samsung televisions); see *id.* at 9 n.32 (“Improvement to a product can come rapidly and free of charge from an expert not even known to the copyright holder.”).

<sup>1665</sup> See DVD CCA & AACS LA Class 16 Opp’n at 13–18; Joint Creators Class 16 Opp’n at 6–7.

longer effectively prevent piracy.<sup>1666</sup> Opponents reason that because the compromised code can no longer serve as a secure platform for the development and distribution of legitimate content, the value of these devices will be diminished.<sup>1667</sup>

In the case of functional software embedded in devices, the Office has previously focused on whether the programs were “distributed as standalone works,” concluding that where programs have no value independent from the device, “repairing these programs is not likely to interfere with any market likely exploited by the copyright owner.”<sup>1668</sup> Applying that reasoning, to the extent the software at issue here is embedded within the device, investigating the programs for potential infringement or violation of license terms is unlikely to harm the market for the embedded software. This factor accordingly favors fair use.

Considering the fair use factors together, the Register finds that the proposed use is likely to be a fair use. The Register will consider additional provisions in light of opponents’ concern with respect to devices that play expressive content, as discussed below.

#### **d. Causation**

Proponents assert that TPMs—including passwords and encryption—restrict access to potentially infringing software on devices and machines that proponents seek to investigate.<sup>1669</sup> SFC states that section 1201’s prohibition against circumvention is “the only cause of the described adverse effects” and that TPMs are “the only barrier” to investigating computer programs that may be infringing FOSS.<sup>1670</sup> The Register finds that the record shows that the statutory prohibition on circumvention of access controls limits participants’ ability to conduct such investigation. But for the prohibition, users likely could gain lawful access to the copyrighted computer programs for this purpose.

#### **e. Asserted Adverse Effects**

##### *i. Evidence of Adverse Effects*

Proponents argue that copyright owners, specifically those with standing to bring a breach of license claim in FOSS works, are adversely affected in their ability to pursue

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<sup>1666</sup> See DVD CCA & AACS LA Class 16 Opp’n 14–18.

<sup>1667</sup> See *id.* at 13–19; Joint Creators Class 16 Opp’n at 6–7.

<sup>1668</sup> Software Study at 41.

<sup>1669</sup> See SFC Class 16 Initial at 6–7.

<sup>1670</sup> *Id.* at 11; see also FSF Class 16 Initial at 2 (“[FSF] has conducted investigations and enforcement of copyright violations on free software packages for over thirty years, but that work is increasingly stymied by [TPMs].”).

investigation of specific instances of potential software copyright infringement. SFC explains that it usually begins investigating a report of potential infringement by observing the behavior of the software or device and reviewing the software documentation to determine whether further investigation is warranted.<sup>1671</sup> “[M]ere observation,” however, is generally insufficient because software is mostly “invisible.”<sup>1672</sup> As SFC notes, “[c]omputer software may be unique among all copyrighted works for the reason that one often cannot detect copying simply by observation.”<sup>1673</sup> Thus, to thoroughly investigate noncompliance with FOSS license conditions, proponents must review the source code. SFC acknowledges that in some cases it can access software without circumvention, but frequently its investigation is inhibited by TPMs.<sup>1674</sup> SFC described steps it can take—whether guessing the password or disassembling a device—that may be construed as steps taken to “avoid” or “bypass” TPMs, making the organization “susceptible” to liability under section 1201.<sup>1675</sup>

In response, opponents advance two arguments. First, they contend that to the extent proponents are able to access the software, TPMs are not effectively preventing access and, accordingly, there would be no liability for bypassing such TPMs.<sup>1676</sup> Similarly, opponents note that where a copyright owner seeks to bypass TPMs to access its own work, it may do so without violating section 1201(a) because the owner is authorizing the circumvention.<sup>1677</sup> Opponents suggest that there is no real threat of harm from litigation because any section 1201 claim or counterclaim for circumvention would fail if the amount added to FOSS was not independently copyrightable or because the FOSS investigator would have equitable defenses, such as “clean hands.”<sup>1678</sup> Because of this, they contend that “the alleged harm is speculative.”<sup>1679</sup> SFC responds by highlighting the uncertainty about whether certain investigatory activities are prohibited under section 1201(a), as well as the independently actionable nature of such claims.<sup>1680</sup> The threat of litigation, SFC contends, adversely affects non-profit organizations in that they

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<sup>1671</sup> See SFC Class 16 Initial at 4.

<sup>1672</sup> *Id.* at 3.

<sup>1673</sup> *Id.*; FSF Class 16 Initial at 2 (stating that, even where the software is accessible, investigation is difficult because “users often need to search the obfuscated form of the work to find hints that free software is included”).

<sup>1674</sup> See SFC Class 16 Initial at 6.

<sup>1675</sup> See *id.* at 7.

<sup>1676</sup> See DVD CCA & AACS LA Class 16 Opp’n at 8.

<sup>1677</sup> See Joint Creators Class 16 Opp’n at 2.

<sup>1678</sup> See DVD CCA & AACS LA Class 16 Opp’n at 9–10.

<sup>1679</sup> *Id.* at 10 & n.18.

<sup>1680</sup> See SFC Class 16 Reply at 8.

may forgo pursuing meritorious investigations due to the risk of liability.<sup>1681</sup> SFC also observes that the purpose of section 1201 exemptions is “specifically to avoid [the] eventuality” of having to assert a defense in litigation.<sup>1682</sup>

Second, opponents argue that adequate alternatives to circumvention exist such that the exemption is unnecessary.<sup>1683</sup> Joint Creators suggest that proponents could negotiate compliance if a FOSS owner “(1) approaches a potential software user; (2) informs the user of its suspicions and of the reasonable nature of the license terms; and (3) expresses no desire to sue unless compliance is not forthcoming.”<sup>1684</sup> Opponents further suggest FOSS owners could “write a pre-lawsuit letter to the alleged infringer requesting access to a program for purposes of investigation of infringement.”<sup>1685</sup> Finally, opponents suggest that FOSS owners can pursue litigation, noting that “where there is a particularized reason to believe infringement has occurred, the Federal Rules of Civil Procedure allow an attorney to file a complaint and to seek discovery to access the code at issue to analyze it for infringement.”<sup>1686</sup>

SFC responds that “[c]opyright infringers typically do not freely admit to their infringement” and that efforts to negotiate compliance before confirming that the accused work contains FOSS are likely to be futile.<sup>1687</sup> It further notes that owners would

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<sup>1681</sup> See SFC Class 16 Initial at 10; see also FSF Class 16 Initial at 2 (stating that FOSS owners “should never fear punishment for simply trying to discover free software licenses”).

<sup>1682</sup> See SFC Class 16 Reply at 7–8.

<sup>1683</sup> See DVD CCA & AACCS LA Class 16 Opp’n at 10.

<sup>1684</sup> Joint Creators Class 16 Opp’n at 4; see Tr. at 269:10–21 (Apr. 7, 2021) (Williams, Joint Creators); Tr. at 302:04–13 (Apr. 7, 2021) (Williams, Joint Creators).

<sup>1685</sup> Joint Creators Class 16 Opp’n at 3–4; see DVD CCA & AACCS LA Class 16 Opp’n at 11.

<sup>1686</sup> Joint Creators Class 16 Opp’n at 2; see DVD CCA & AACCS LA Class 16 Opp’n at 11 (noting that if a cease-and-desist letter is ignored, it could be grounds for willful infringement claims); Tr. at 270:15–271:03 (Apr. 7, 2021) (Ayers, DVD CCA & AACCS LA) (observing that “there are rules of civil procedure that . . . address how evidence is to be made available to the parties in a contract dispute, in a legal dispute, and this proposal . . . essentially sidesteps that”); Tr. at 289:05–18 (Apr. 7, 2021) (Ayers, DVD CCA & AACCS LA) (observing that the proposed exemption would privilege FOSS authors over other copyright owners that “have had to follow legal steps, legal procedures, in order to pursue the circumvention devices and tools” that violate section 1201); Tr. at 301:15–302:03 (Apr. 7, 2021) (Williams, Joint Creators) (commenting that if an owner knows that “90 percent of a given market is running Linux,” then “circumvention to investigate isn’t necessary” because “[t]hey already have everything they need to move forward with the complaint” and “get[] what they need through discovery”).

<sup>1687</sup> See SFC Class 16 Reply at 7–8; see also Tr. at 276:13–277:01 (Apr. 7, 2021) (Chestek, SFC) (commenting that imposing a “duty [on copyright owners] to go to the hardware manufacturers or the software manufacturers to ask for a copy” would not be “feasible”); Tr. at 307:19–309:15



need “a reasonable basis for sending a cease and desist letter, for which the investigation being discussed is a necessary predicate.”<sup>1688</sup> As to pursuing litigation, SFC responds that this approach is “unfeasible given the number of claims reported” and would impose an “undue burden on the courts.”<sup>1689</sup>

Weighing the participants’ arguments, the Register concludes that SFC has made a sufficient showing that TPMs are adversely affecting the ability of users to investigate potential infringement of FOSS in software-enabled devices. In many cases, users may suspect a computer program is infringing FOSS, but must examine the program’s code to confirm that suspicion. The alternatives to circumvention offered by proponents all have notable drawbacks that may impede the proposed noninfringing activity.<sup>1690</sup> In particular, SFC notes that requests for access to software are routinely ignored.<sup>1691</sup> Further, the costs and burdens of filing a lawsuit may be prohibitive for many users, particularly where the objective is compliance with FOSS licensing terms, not damages.<sup>1692</sup>

### *ii. Statutory Factors*

Turning to the section 1201 statutory factors, on the first factor, proponents argue the current prohibition is impeding investigations of FOSS noncompliance that could lead to more derivative works being made available. SFC contends that “incorporat[ing] FOSS without complying with the license . . . effectively remove[s] the [derivative] software from the commons” and thereby diminishes its availability for use.<sup>1693</sup> In response, opponents EDA and AED comment that FOSS is “freely available irrespective of incorporation into any particular device or program,” so TPMs are not affecting their availability; and in any event, licensees should have the flexibility to “provide access and use in a variety of ways pursuant to the license.”<sup>1694</sup> DVD CCA and AACS LA warn that

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(Apr. 7, 2021) (Chestek, SFC; Smith, U.S. Copyright Office) (discussing SFC’s protocol where they typically approach potential infringers with “fairly compelling evidence” to successfully achieve compliance and avoid their letter being disregarded).

<sup>1688</sup> SFC Class 16 Reply at 7.

<sup>1689</sup> *Id.* at 7–8; *see* Tr. at 277:08–16 (Apr. 7, 2021) (Chestek, SFC).

<sup>1690</sup> *See* Section 1201 Report at 122 (indicating that the Office “will . . . evaluate the burdens or costs involved with an alternative and, depending on the circumstances, find them to either rise to the level of an adverse effect or to just be a mere inconvenience”).

<sup>1691</sup> *See* SFC Class 16 Reply at 7; Tr. at 317:02–318:08 (Apr. 7, 2021) (Chestek, SFC).

<sup>1692</sup> *See* Tr. at 306:21–307:07 (Apr. 7, 2021) (Chestek, SFC) (commenting that the “first step” under FOSS community enforcement standards “is to work with the manufacturer to try to gain compliance,” and that going to court is “fairly antithetical” to those standards).

<sup>1693</sup> SFC Class 16 Initial at 9.

<sup>1694</sup> EDA & AED Class 16 Opp’n at 7–8.

allowing circumvention of TPMs on disc players would diminish these devices' ability to serve as secure distribution platforms for expressive works—protection that creators rely on to recoup their investment in producing works like motion pictures.<sup>1695</sup> Consequently, they argue, circumvention would disincentivize creators from making works available on these devices, as well as discourage investment in creating new works. In support, opponents cite the Register's 2012 analysis recommending against a proposed exemption for jailbreaking video game consoles.<sup>1696</sup>

Overall, the Register finds this statutory factor favors the proposed exemption. In prior rulemakings, the Office has consistently found that exemptions to allow noninfringing analysis of computer programs are likely to promote the availability of copyrighted works.<sup>1697</sup> The Office has reached that conclusion notwithstanding generalized concerns regarding the security of distribution platforms.<sup>1698</sup> Indeed, the Office has repeatedly recommended exemptions for devices that allow motion picture playback.<sup>1699</sup> Moreover, opponents' argument appears more germane to the effect of the proposed exemption on the market for copyrighted works, discussed below, than to works' availability for use.

Concerning the second statutory factor, SFC notes that its policy is to make publicly available any derivative works it obtains through investigation and enforcement of FOSS license conditions, which furthers archival and preservation purposes.<sup>1700</sup> Because such works also “become the basis for larger FOSS projects,” such as OpenWrt, SFC argues that investigation also leads to projects that educate new software developers.<sup>1701</sup> On the third factor, SFC states that TPMs have a “significant negative impact” on teaching and

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<sup>1695</sup> See DVD CCA & AACSLA Class 16 Opp'n at 12–13.

<sup>1696</sup> See DVD CCA & AACSLA Class 16 Opp'n at 12 (citing 2012 Recommendation at 48).

<sup>1697</sup> See, e.g., 2018 Recommendation at 174 (jailbreaking voice assistance devices); *id.* at 312 (security research); 2015 Recommendation at 190 (jailbreaking smartphones and portable all-purpose mobile computing devices).

<sup>1698</sup> *Cf.* 2018 Recommendation at 181 (“For opponents to establish that this statutory factor weighs against the exemption on the ground that it would adversely affect the market for their own creative works, they must offer more than speculation about the role the access controls protecting the device firmware may play in protecting access to those works.”).

<sup>1699</sup> See, e.g., 2015 Recommendation at 216 (jailbreaking smart televisions); 2015 Recommendation at 190 (jailbreaking smartphones and portable all-purpose mobile computing devices).

<sup>1700</sup> See SFC Class 16 Initial at 8–9.

<sup>1701</sup> *Id.*; see also FSF Class 16 Initial at 1 (noting that FOSS, by its nature, is free to study, share, and improve, inability to circumvent TPMs on works that incorporate FOSS without complying with license terms “interfere[s] with the ability to enjoy these freedoms”).

research because they “prevent others from being able to learn from, comment on and criticize the accused software’s use and implementation of the FOSS.”<sup>1702</sup>

Addressing the second and third statutory factors, EDA and AED argue that because SFC’s initial proposal lacked clarity as to the users, uses, and copyrighted works at issue, “there has been no showing that any archival, preservation, educational, critical, reportorial, or scholarly use is implicated.”<sup>1703</sup> In addition, they assert there is “no adverse impact” on such uses “because FOSS works, by their very nature, are otherwise freely available to users outside the context of being embedded in a particular device or program.”<sup>1704</sup> In response, SFC notes that the exemption is not about obtaining access to FOSS generally, but rather “to investigate infringement of a particular software program on a particular device,” for which “[t]here is no substitute software available.”<sup>1705</sup>

The record shows that the prohibition against circumvention limits FOSS compliance investigations, which in turn, limits the ability of users to learn from derivative software that otherwise would be freely available. The Register credits proponents’ views and concludes that these factors favor an exemption.

Participants’ arguments with respect to the fourth statutory factor overlap with those concerning the fourth fair use factor. Opponents warn of risks to other expressive content from weakening the digital ecosystem.<sup>1706</sup> In their view, circumvention of TPMs on video game consoles, set-top boxes, and disc players can facilitate piracy and thereby harm the market for and diminish the value of copyrighted works.<sup>1707</sup> They note that the Office has previously rejected proposed jailbreaking and repair exemptions for video

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<sup>1702</sup> SFC Class 16 Initial at 9 & n.30 (noting that TPMs inhibit the “collaborative development of software” that is a guiding principle behind FOSS and citing, as an example, NASA’s open source policy, one purpose of which is to “enhance and enable innovation and discovery”); *see also* FSF Class 16 Initial at 2.

<sup>1703</sup> EDA & AED Class 16 Opp’n at 8; *see also* DVD CCA & AACS LA Class 16 Opp’n at 11 (contending that “[t]he analysis of the statutory factors is inapposite to the reasoning the Register provided for the preservation of computer programs or even video games”).

<sup>1704</sup> EDA & AED Class 16 Opp’n at 8.

<sup>1705</sup> SFC Class 16 Reply at 5 (comparing to investigations of proprietary software, the fact that “there are plenty of other copies available” is irrelevant to investigating whether copies installed on specific devices exceed the scope of the license).

<sup>1706</sup> *See* DVD CCA & AACS LA Class 16 Opp’n 14–18 (noting that “[e]ven well-intentioned exemptions can unintentionally impose undue stress on the [content protection ecosystem]” and that exposure of cryptographic keys can facilitate widespread piracy of DVD and Blu-ray discs); Joint Creators Class 16 Opp’n at 6–7.

<sup>1707</sup> *See* DVD CCA & AACS LA Class 16 Opp’n at 14–18; Joint Creators Class 16 Opp’n at 6–7; Tr. at 286:14–24 (Apr. 7, 2021) (Williams, Joint Creators); Tr. at 288:16–289:04 (Apr. 7, 2021) (Ayers, DVD CCA & AACS LA).

game consoles because of the potential harm to the markets for the expressive works they play and the devices themselves.<sup>1708</sup> Opponents argue this logic likewise applies to set-top boxes and disc players, which “also incorporate access controls that protect copyrighted content against infringement and unauthorized access.”<sup>1709</sup>

Proponents point to the harm of the current prohibition on creators of FOSS works who are deprived of economic benefits—enhanced reputation, market share for other programs, and free product improvements made by other developers—when others use FOSS but do not comply with license conditions.<sup>1710</sup> SFC responds to opponents’ concerns by noting that the proposed exemption would not “affirmatively permit any subsequent use of any materials accessed” via investigation and, if a user exceeded the scope of the exemption by distributing expressive content or encryption keys, device manufacturers and copyright owners could pursue legal remedies.<sup>1711</sup> In addition, SFC observes that “the devices being investigated are typically sold without content, so there would be no possible exposure of games or movies when new devices are investigated.”<sup>1712</sup>

While maintaining their fundamental opposition to the proposed exemption, opponents propose two additional limitations on the scope of the exemption to limit its potential for collateral damage to the protection of other expressive works: (1) the language of the exemption should explicitly prohibit gaining access to unauthorized content or facilitating infringement;<sup>1713</sup> and (2) similar to the current repair exemption and the requirements of section 117, the device or machine should be reencrypted and restored to its original specifications after the investigation.<sup>1714</sup>

Given the concern that circumvention of TPMs on certain devices—even for a noninfringing purpose—may compromise the digital content ecosystem, the Office has

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<sup>1708</sup> See Joint Creators Class 16 Opp’n at 6 (citing 2018 Recommendation at 206; 2012 Recommendation at 49); Tr. at 302:23–303:13 (Apr. 7, 2021) (Williams, Joint Creators).

<sup>1709</sup> Joint Creators Class 16 Opp’n at 6; see DVD CCA & AACLS LA Class 16 Opp’n at 13–19; Tr. at 291:18–23 (Apr. 7, 2021) (Ayers, DVD CCA & AACLS LA) (explaining how removal of firmware from disc players could expose cryptographic keys that, in turn, could be used to create a circumvention tool).

<sup>1710</sup> See SFC Class 16 Initial at 9–10 & n.32.

<sup>1711</sup> SFC Class 16 Reply at 6; see Tr. at 275:08–18 (Apr. 7, 2021) (Chestek, SFC).

<sup>1712</sup> SFC Class 16 Reply at 6. SFC also argues that FOSS investigations should not be stymied by a manufacturer’s decision to design a particular device in a way that accessing the firmware would also expose other content. See *id.* at 4 & n.10; Tr. at 294:10–295:04 (Apr. 7, 2021) (Chestek, SFC).

<sup>1713</sup> See Joint Creators Class 16 Opp’n at 7; Tr. at 287:21–25 (Apr. 7, 2021) (Williams, Joint Creators).

<sup>1714</sup> See Joint Creators Class 16 Opp’n at 7; Tr. at 268:06–15 (Apr. 7, 2021) (Williams, Joint Creators); Tr. at 286:25–287:20 (Apr. 7, 2021) (Williams, Joint Creators).

in other contexts recommended additional limitations in cases where the record suggests an otherwise appropriate proposed exemption may jeopardize protections to expressive works.<sup>1715</sup> The Register concludes that a similar limitation is appropriate here. Specifically, the proposed exemption should include the qualifying language “where the copy of the computer program, or the device or machine on which it operates, is not used or maintained in a manner that facilitates copyright infringement.” The Register interprets this limitation to not only prohibit misuse of the exemption to gain access to unauthorized content or facilitate infringement, but also to require users to take reasonable steps to secure computer programs, and the devices on which they operate, during and after circumvention. Generally, this means a user should reencrypt and restore the device to its original specifications. SFC has indicated, however, that this may not be practicable for all devices in that, depending on the type of device, restoring or reencrypting it after circumvention may not be possible because disassembly in the course of a FOSS investigation has rendered it unrepairable.<sup>1716</sup> In these instances, the device should instead be securely maintained or destroyed once it is no longer needed for the investigation. Indeed, in at least some cases, SFC appears to have followed this practice by destroying a device in the course of investigating it for FOSS license noncompliance.<sup>1717</sup> Absent the additional limitation, this factor might disfavor the exemption due to the potential harm to the market for expressive works. But with the limitation mitigating this potential harm, and because the evidence indicates that the current prohibition is inhibiting investigation of license violations that diminish the value that FOSS creators derive from their works, this factor slightly favors the exemption.

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<sup>1715</sup> See, e.g., 37 C.F.R. § 201.40(b)(2)(i)(C) (requiring that motion picture accessibility for K-12 education be “stored by the educational institution in a manner intended to reasonably prevent unauthorized further dissemination of a work”); *id.* § 201.40(b)(8) (requiring that jailbreaking voice assisted devices not be “accomplished for the purpose of gaining unauthorized access to other copyrighted works”); *id.* § 201.40(b)(9) (requiring that repair of a vehicle not be “accomplished for the purpose of gaining unauthorized access to other copyrighted works”); *id.* § 201.40(b)(10) (requiring that repair of home appliance and home system not be “accomplished for the purpose of gaining unauthorized access to other copyrighted works”); *id.* § 201.40(b)(11)(ii) (requiring that “information derived from the [good-faith security research] 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”).

<sup>1716</sup> See Tr. at 272:22–273:22 (Apr. 7, 2021) (Chestek, SFC) (objecting to a requirement to “return [a device] to a condition where it’s still operable” while noting that a set-top box that runs on FOSS may be “restore[d] . . . to its original operating condition”).

<sup>1717</sup> See Tr. at 273:24–273:04 (Apr. 7, 2021) (Chestek, SFC); see also SFC Class 16 Initial at 7 (noting that in certain cases SFC “must sacrifice the motherboard of [a] device, taking it apart and connecting to it with specialized electronics hardware”).

On the fifth statutory factor, consideration of such other factors as the Librarian deems appropriate, EDA and AED assert that permitting circumvention to investigate FOSS compliance would frustrate efforts to take “reasonable steps” to keep information secret as required for protection under the Defend Trade Secrets Act and the EU Trade Secrets Directive.<sup>1718</sup> SFC responds by noting that this concern is theoretically “true of every single exemption,” and argues that it is “not true that trade secrets will be forfeited” by virtue of the proposed exemption because “the information will still not be ‘generally known’ or ‘readily ascertainable’ to others and the trade secret status is maintained.”<sup>1719</sup>

The Office’s general practice is to limit its analysis under the fifth factor to matters bearing on traditional copyright concerns, absent unusual circumstances.<sup>1720</sup> Such circumstances are not present here. Moreover, under SFC’s amended proposal, the circumvention is permissible only so far as it “does not constitute a violation of applicable law.”<sup>1721</sup>

After weighing the statutory factors, the Register concludes that the prohibition on circumvention of TPMs is causing, or is likely to cause, adverse effects on the noninfringing investigation of potential infringement of FOSS by other computer programs. The Register further concludes that excluding set-top boxes, disc players, or vehicles from the exemption is not warranted. As noted above, there are exemptions currently in place for devices and media that access motion pictures—for example, the

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<sup>1718</sup> See EDA & AED Class 16 Opp’n at 10–12. EDA and AED raised additional arguments under this factor about the proposed exemption interfering with other regulations and the potential impact on vehicle engineering and safety. See *id.* at 8–12. These arguments, however, are mooted by SFC removing subpart (b) its exemption about “making lawful use” and adding the provision that circumvention to investigate a potential software infringement “does not constitute a violation of applicable law.” Compare SFC Class 16 Pet. at 2, with SFC Class 16 Reply at 3; see also SFC Class 16 Reply at 6–7. In addition, EDA and AED’s argument that the proposed exemption should not exceed the bounds of the permanent exemption for reverse engineering in 1201(f) misunderstands the role of the triennial rulemaking, in which the Librarian may adopt temporary exemptions to “accommodate changing marketplace realities and ensure that access to copyrighted works for lawful purposes is not unjustifiably diminished,” relative to the permanent exemptions enacted by Congress. See Section 1201 Report at 2 (citing Commerce Comm. Report at 35–36).

<sup>1719</sup> See SFC Class Reply at 6–7. SFC also asks the Librarian to consider under this factor the hardship the prohibition against circumvention creates for FOSS owners who seek to investigate potential infringement, but are blocked by TPMs and inhibited from circumvention by the threat of a section 1201 claim or counterclaim in litigation. See SFC Class 16 Initial at 10. As discussed above, the Register considered this concern in evaluating opponents’ arguments that adequate alternatives to circumvention exist.

<sup>1720</sup> See Section 1201 Report at 125–26.

<sup>1721</sup> SFC Class 16 Reply at 6–7.

jailbreaking exemptions for smartphones, tablets, and smart TVs, as well as the exemptions for educational, accessibility, and other uses of motion pictures on DVD and Blu-ray discs. As in those contexts, the Register concludes that a limited exemption containing appropriate safeguards may properly encompass these types of devices. While opponents raise legitimate concerns over piracy, those objections “relate primarily to the possibility that the proposed exemption could be abused, not to the purpose and character of the activities for which proponents seek an exemption.”<sup>1722</sup>

*Video game consoles.* The inclusion of video game consoles, however, warrants additional scrutiny. Even after limiting the scope of the proposed class, the use, and the users, and adding guardrails against abuse of the exemption to gain unauthorized access to expressive content, the Register cannot conclude that, based on the record, proponents have demonstrated actual or likely adverse effects on investigating FOSS in video game consoles. Although proponents submit that they have received “credible reports” relating to “gaming consoles,” they were unable to provide any examples of where FOSS had been investigated or found in such devices.<sup>1723</sup> The Office has consistently recognized that proposed exemptions involving game consoles raise particular market concerns in light of the piracy risk associated with circumvention in this context.<sup>1724</sup> Here, the Register agrees with opponents that the present record with respect to consoles is too thin to outweigh this potential risk. For these reasons, the Register concludes that video game consoles should be excluded from the proposed exemption.

### 3. NTIA Comments

NTIA recommends granting the proposed exemption, with one change to remove language requiring compliance with other applicable laws as a condition of the exemption and replace it with a sentence providing notice about compliance with other laws.<sup>1725</sup> NTIA finds that opponents’ remaining objections to SFC’s amended proposal “lack overall validity and substantiation.”<sup>1726</sup> First, NTIA concludes that the “legal alternatives” proposed by opponents are not feasible because they would require “a level of evidence that only the outcome of the petitioned investigation would provide.”<sup>1727</sup> For similar reasons, NTIA is unpersuaded by opponents’ suggestion that users should have particularized knowledge of a potential FOSS infringement to engage

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<sup>1722</sup> 2018 Recommendation at 197.

<sup>1723</sup> See SFC Class 16 Initial at 5; Tr. at 304:04–12 (Apr. 7, 2021) (Chestek, SFC).

<sup>1724</sup> See 2018 Recommendation at 206 (“In multiple past rulemakings, the Office has rejected proposed jailbreaking exemptions for video game consoles . . . because of the potential harm to the market.”).

<sup>1725</sup> See NTIA Letter at 131, 133.

<sup>1726</sup> *Id.* at 131.

<sup>1727</sup> *Id.* at 131–32.

in circumvention because gathering this knowledge is “the very purpose of the exemption.”<sup>1728</sup> Further, NTIA concludes that requiring users to have a good-faith, reasonable belief in the need for the investigation is “unnecessary since a good faith reasonable belief is already the proponent’s existing best practice.”<sup>1729</sup> Finally, NTIA does not support a proposed requirement that circumventers “restore, delete, or destroy devices and software once the investigation has concluded” because, unlike for repair, “there is no need to return the device to an operable condition,” and further uses of a circumvented device beyond FOSS investigation would be outside the scope of the exemption.<sup>1730</sup>

Overall, the Register agrees with NTIA’s comments in support of the SFC’s proposed exemption. The Register, however, does not recommend removal of the provision requiring compliance with other laws. SFC added this limitation to its amended proposal and, as NTIA notes, there is no subsequent discussion of its removal in the record.<sup>1731</sup> Thus, there is insufficient evidence to support a finding of adverse effects resulting from the “other laws” provision. In addition, the Register incorporates a good-faith, reasonable belief requirement into the regulatory language to align the basis for circumvention with SFC’s practices and require other potential users of the proposed exemption to follow this standard. Finally, the Register concludes that an additional limitation that devices not be used or maintained in a manner that facilitates infringement is appropriate to ensure that circumvented devices are not misused after an investigation concludes.

#### 4. Conclusion and Recommendation

After thorough consideration, the Office concludes that proponents have demonstrated a need for this exemption and recommends adopting it with the limitations discussed above. First, the purpose of the investigation must be limited to whether a computer program potentially infringes FOSS. Second, the user of the exemption must have a good-faith, reasonable belief in the need for the investigation. Third, because the nature of a particular FOSS violation may vary, a user of the exemption must be a party that, if noncompliant FOSS were to be discovered, would have standing to bring either a breach of license claim or a copyright infringement claim. Fourth, to further underscore that the exemption does not authorize circumvention for purposes going beyond those specified, it includes the additional requirement that “the copy of the computer program, or the device or machine on which it operates, is not used or maintained in a

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<sup>1728</sup> *Id.* at 132.

<sup>1729</sup> *Id.* at 132–33.

<sup>1730</sup> *Id.* at 133.

<sup>1731</sup> *See id.* at 133 n.685.



manner that facilitates copyright infringement.” And finally, the exemption excludes video game consoles from the types of devices on which TPMs may be circumvented.

Accordingly, the Register recommends that the Librarian designate the following class:

**Computer programs, solely for the purpose of investigating a potential infringement of free and open source computer programs where:**

- (i) The circumvention is undertaken on a lawfully acquired device or machine other than a video game console, on which the computer program operates;**
- (ii) The circumvention is performed by, or at the direction of, a party that has a good-faith, reasonable belief in the need for the investigation and has standing to bring a breach of license or copyright infringement claim;**
- (iii) Such circumvention does not constitute a violation of applicable law; and**
- (iv) The copy of the computer program, or the device or machine on which it operates, is not used or maintained in a manner that facilitates copyright infringement.**

*Q. Proposed Class 17: All Works—Accessibility*

**1. Background**

**a. Summary of Proposed Exemption**

Petitioners American Council of the Blind, American Foundation for the Blind, Association for the Education and Rehabilitation of the Blind and Visually Impaired, Association of Late-Deafened Adults, Association of Transcribers and Speech-to-Text Providers, Association on Higher Education and Disability, Benetech/Bookshare, Gallaudet University Technology Access Program, HathiTrust, Hearing Loss Association of America, Library Copyright Alliance, National Association of the Deaf, National Federation of the Blind, the Perkins Braille & Talking Book Library, and Telecommunications for the Deaf and Hard of Hearing, Inc. (collectively, “Accessibility Petitioners”)<sup>1732</sup> request a new exemption broadly permitting circumvention to address the accessibility needs of individuals with disabilities. Proponents seek an exemption allowing circumvention to create accessible versions of any inaccessible copyrighted works. Their requested regulatory language is as follows:

Any work protected by a technological protection measure where circumvention is undertaken for the purpose of creating an accessible version of the work for people with disabilities.<sup>1733</sup>

FSF filed a comment expressing general support for this exemption but did not provide evidence or substantive arguments regarding the specific proposal.<sup>1734</sup> Joint Creators, DVD CCA and AACCS LA, and AAP filed comments opposing the proposed exemption.<sup>1735</sup>

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<sup>1732</sup> Some of these organizations also filed comments in support of Classes 3 and 8. For simplicity, in this section, “Accessibility Petitioners” refers to the coalition of accessibility groups who filed comments in support of Class 17.

<sup>1733</sup> Accessibility Petitioners Class 17 Initial at 10.

<sup>1734</sup> FSF Class 17 Initial at 2.

<sup>1735</sup> Joint Creators Class 17 Opp’n at 4 (objecting in part because proposed exemption language “makes no reference to remuneration or payment of a fair price to obtain a copy” and “lacks a workable definition of the users covered”); DVD CCA & AACCS LA Class 17 Opp’n at 3 (arguing proposed language “far exceeds the parameters of a permissible class”); AAP Class 17 Opp’n at 1 (faulting proponents’ “failure to properly identify a particular class of copyrighted works”)

## b. Overview of Issues

Proponents request an exemption permitting circumvention of “all works” for the purpose of creating accessible versions.<sup>1736</sup> They argue that Congress has evinced a “clear intent to make all the features of the information age accessible to people with disabilities,” and that as a matter of “civil and human rights,” individuals with disabilities require a “broad and clear exemption” so that they can “adapt copyrighted works for their own, individual needs.”<sup>1737</sup> Proponents believe that “the difficult challenge of interpreting a patchwork of underinclusive Section 1201 exemptions” leave disabled individuals unable to engage in “new non-infringing accessibility uses [that] arise as facts on the ground change.”<sup>1738</sup> Specifically, proponents fault the triennial, class-by-class nature of the section 1201 rulemaking, which they view as a barrier to disabled individuals and third parties who want to engage in creative solutions to accessibility issues soon after they are identified.<sup>1739</sup> In a sense, proponents seek a single exemption that would function similarly to the permanent statutory exceptions to section 1201, some of which are also not specific to a particular category of copyrighted work.<sup>1740</sup>

Opponents object to this class primarily on the grounds that the statute does not give the Librarian the authority to adopt a class consisting of “all works” sharing a particular

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<sup>1736</sup> Proponents describe their exemption broadly as permitting circumvention “for non-infringing accessibility uses.” Accessibility Petitioners Class 17 Initial at 10; *see also* Tr. at 69:20–70:01 (April 5, 2021) (Reid, American Council of the Blind) (advocating in favor of broad regulatory language because “there are a wide array of circumstances” in which someone may need to “engage in accessibility”); Tr. at 71:01–71:05 (April 5, 2021) (Reid, American Council of the Blind) (“this exemption is designed to enable accessibility activities by individuals and third parties that may not be bound at all by disability law but are, in fact, on sort of the cutting edge of making copyrighted works accessible”).

<sup>1737</sup> Accessibility Petitioners Class 17 Initial at 8–10.

<sup>1738</sup> *Id.* at 8.

<sup>1739</sup> *See id.* at 8 (arguing “creative third-party approaches to accessibility can arise in response to new technological barriers” but are currently “stifled by the necessity of waiting years on end and the burden of navigating the triennial review”); *id.* at 9 (advocating for an exemption that “make[s] clear that the widespread need for accessibility . . . can be met without waiting for years for the instantiation of the triennial review or the Office’s lengthy review”); Accessibility Petitioners Class 17 Reply at 8 (advocating for “a broad, clear, efficient exemption for accessibility for people with disabilities, rather than the current piecemeal approach, which is encumbered by three-year delays”).

<sup>1740</sup> *See* 17 U.S.C. § 1201(h) (creating exception, regardless of copyrighted work, where component or part “prevent[s] the access of minors to material on the Internet”), (i) (creating exception unbounded by category of work where, among other things, a technological protection measure “contains the capability of collecting or disseminating personally identifying information”).

attribute.<sup>1741</sup> DVD CCA and AACCS LA emphasize the Office’s prior analysis of how to define a class of works and argue that “proponents have not provided any persuasive basis for the Register to alter her interpretation of the rulemaking” and that the proposed class is “simply impermissibly broad.”<sup>1742</sup> Joint Creators similarly argue that the proposed exemption “is beyond the Librarian’s authority to adopt” because, in their view, “different categories of works present unique circumstances.”<sup>1743</sup> For example, Joint Creators note that sound recordings “are largely available without access controls” in many formats, whereas an exemption for video games would raise unique issues of consumer privacy and cybersecurity.<sup>1744</sup> Joint Creators also fault the proposed exemption language as failing to impose any limits to reduce the risk of market harm to copyright owners, such as requiring that circumvented copies be lawfully acquired, limiting distribution of accessible material to individuals with disabilities, or imposing a market check to so that the exemption only applies to works that are unavailable in accessible form.<sup>1745</sup> Finally, Joint Creators also argue that the proposed exemption “lacks a workable definition of the users covered.”<sup>1746</sup>

Proponents advance three key legal arguments to support the proposed class. First, they argue that, notwithstanding the Office’s prior determinations,<sup>1747</sup> a “class of works” can—and should—be defined to span multiple section 102 categories, provided they share the common attribute of “works [that] are inaccessible to their users.”<sup>1748</sup> Second, they argue that making inaccessible copyrighted works accessible is an

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<sup>1741</sup> See Joint Creators Class 17 Opp’n at 2–3 (arguing “all works” exemptions do not comply with the Office’s “longstanding regulatory guideposts”); DVD CCA & AACCS LA Class 17 Opp’ n at 3 (“the proposed class for all copyrighted works, as the NPRM noted, far exceeds the parameters of a permissible class”); AAP Class 17 Opp’n at 2 (“AAP agrees with the Register’s assessment [in the NPRM] of the Librarian’s authority under section 1201”).

<sup>1742</sup> DVD CCA & AACCS LA Class 17 Opp’ n at 4–7, 8.

<sup>1743</sup> Joint Creators Class 17 Opp’n at 3 & n.9 (quoting NPRM at 65,309).

<sup>1744</sup> *Id.* at 3–4.

<sup>1745</sup> *Id.* (noting that “the proposed exemption language does not limit circumvention to motion pictures or other works that are not available in accessible formats” and providing examples of limitations not proposed).

<sup>1746</sup> *Id.* at 4.

<sup>1747</sup> See, e.g., Section 1201 Report at 26 (“As a starting point, each class of works must be a subset of one of the broad categories of works . . . identified in section 102”) (internal quotations omitted); 2018 Recommendation at 13 (similar).

<sup>1748</sup> Accessibility Petitioners Class 17 Initial at 28.

“uncontroversially fair, noninfringing use”<sup>1749</sup> that the prohibition on circumvention prevents. Third, they argue that the statutory factors favor granting a “broad, general exemption for accessibility” so that individuals with disabilities are not burdened by repeated participation in the section 1201 rulemaking and are instead able to “creatively push technical boundaries and fill accessibility gaps” in the market.<sup>1750</sup>

As the Office has stated, “[g]enerally, public policy favors removing impediments to access for individuals with disabilities.”<sup>1751</sup> Accessibility is “not merely a matter of convenience,” but it ensures that individuals with disabilities have “meaningful access to the same content that individuals without such impairments are able to perceive.”<sup>1752</sup> For years, therefore, the Office has advocated a comprehensive review of section 121 so that it can be updated to address changes in the marketplace and the modern needs of the disabled community.<sup>1753</sup> And the Register has remained mindful that for individuals with disabilities, proposed exemptions “may represent the difference between having and not having access to the works” available to others.<sup>1754</sup> For these reasons, the Office has recommended that Congress enact a permanent exemption for accessibility into law.<sup>1755</sup>

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<sup>1749</sup> *Id.* at 18–19 (citing *Sony v. University City Studios*, 464 U.S. 417 (1984) and *Authors Guild v. HathiTrust*, 755 F.3d 87 (2d. Cir. 2014)); *see also* Accessibility Petitioners Class 17 Reply at 20 (arguing that “accessibility is fair use” and thus “the proposed exemption is plainly confined by noninfringing fair use boundaries”).

<sup>1750</sup> Accessibility Petitioners Class 17 Initial at 23–27 (using COVID-19 pandemic as example of unanticipated situation where increased use of inaccessible digital resulted in barriers for individuals who were blind or visually impaired); *id.* at 8–10 (arguing that “new barriers to accessibility [can] materialize during the interim period of each triennial review” and a broad exemption would allow for individuals with disabilities to engage in self-help or seek assistance without the need to wait for the conclusion of the next rulemaking); Accessibility Petitioners Class 17 Reply at 12–14 (arguing in favor of a broad exemption because individuals with disabilities “are typically the most knowledgeable about their own needs and limits, and therefore are the best parties for determining what accommodations are necessary”).

<sup>1751</sup> 2018 Recommendation at 104 (quoting 2012 Recommendation at 21).

<sup>1752</sup> 2012 Recommendation at 22.

<sup>1753</sup> *See, e.g., The Register’s Perspective on Copyright Review: Hearing Before the H. Comm. on the Judiciary*, 114th Cong. 26 (2015) (statement of Maria A. Pallante, Register of Copyrights) (supporting legislative attention so section 121 can “better address the current needs of the visually impaired community and developments in the commercial marketplace”).

<sup>1754</sup> 2018 Recommendation at 104.

<sup>1755</sup> Section 1201 Report at 86 (recommending making the accessibility exemption for e-books permanent “[i]n light of the repeating granting of the temporary exemption [for e-books] and the underlying public policy of reducing burdens on people who are blind or print-disabled”).

For the reasons explained below, the record for this class and the policy interests in accessibility support an exemption to enable individuals with disabilities to use alternate input devices to play video games. The record does not, however, support an exemption covering other copyrighted works or accessibility uses.

## 2. Discussion

### a. Scope of the Proposed Class

As discussed above, section 1201 provides that the Librarian may adopt exemptions for “users of a copyrighted work which is in a particular class of copyrighted works, if such persons are, or are likely to be in the succeeding 3-year period, adversely affected by virtue of such prohibition in their ability to make noninfringing uses of that particular class of works.”<sup>1756</sup> In considering potential exemptions, the Librarian is to determine whether such users are, or are likely to be, “adversely affected by the prohibition under subparagraph (A) in their ability to make noninfringing uses under this title of a particular class of copyrighted works.”<sup>1757</sup> The legislative history states that Congress “intend[ed] that the ‘particular class of copyrighted works’ be a narrow and focused subset of the broad categories of works of authorship than is identified in Section 102 of the Copyright Act.”<sup>1758</sup> The House Manager’s Report similarly described section 102 categories as “a starting point for this decision” that must then be further narrowed to ensure that the works within a single class are affected by the prohibition on circumvention “in the same way.”<sup>1759</sup>

In the NPRM, the Office noted that “[a]s presently suggested, this proposed exemption is beyond the Librarian’s authority to adopt because it does not meet the statutory requirement to describe “a *particular class* of copyrighted works.”<sup>1760</sup> The Office further explained that “petitioners are required to establish ‘distinct, verifiable and measurable impacts’ on noninfringing uses, and those impacts must be caused by the statutory prohibition on circumvention.”<sup>1761</sup>

Proponents argue that the Office’s approach to defining a class of works is “based off a faulty interpretation” of the statute and that the Register should instead recommend a

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<sup>1756</sup> 17 U.S.C. § 1201(a)(1)(B).

<sup>1757</sup> *Id.* § 1201(a)(1)(C).

<sup>1758</sup> Commerce Comm. Report at 38.

<sup>1759</sup> House Manager’s Report at 7 (providing example of books and computer software as literary works under section 102 that would not experience the same adverse effects from section 1201(a)).

<sup>1760</sup> NPRM at 65,309.

<sup>1761</sup> *Id.*

class of works sharing “obvious common attributes,” users, and uses, regardless of section 102 category.<sup>1762</sup> In proponents’ view, the proposed class satisfies the suggested standard because it is limited to users who “are either unable to access the works” “or are attempting to make such works accessible,” and because it allows “an indisputably fair and noninfringing use.”<sup>1763</sup>

Proponents also argue that there is precedent for the Office revisiting how to define a class of works, and they point to the Office previously crafting narrow classes based on their use or user, rather than simply identifying subcategories of works within the section 102 categories. For example, proponents note<sup>1764</sup> that in 2006, the Office concluded that a class of works could start with a section 102 class and then “additionally be refined” by the use or user of the class, even though it had previously concluded that such narrowing was “not permissible” under the statute.<sup>1765</sup> Proponents also point to the Register’s creation of classes for “video games,” which are not a section 102 class but are instead comprised of both audiovisual and literary elements by virtue of their visual display and underlying source code.<sup>1766</sup> In their view, the Register’s adoption of classes for video games further illustrates her flexibility to adopt a class spanning “all works” that are inaccessible.

After considering the record for this proceeding, the analysis of prior proceedings, and the statutory text and legislative history, the Register concludes that neither she nor the Librarian has the authority to define the broad class of works that proponents request. It has been, and remains, the Register’s view that the statutory reference to “a particular class of copyrighted works” does not permit defining a class to encompass all categories of works, with limitations based solely on the type of use or user.<sup>1767</sup> For that reason, the

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<sup>1762</sup> Accessibility Petitioners Class 17 Initial at 27–28.

<sup>1763</sup> *Id.* at 28.

<sup>1764</sup> *Id.* at 29–30.

<sup>1765</sup> 2006 Recommendation at 10; *contra* 2003 Recommendation at 84–85 (concluding that use-based classes of works were “inconsistent with the narrowly tailored authority provided to the Librarian of Congress to exempt particular classes of adversely affected works”); Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 65 Fed. Reg. 64,556, 64,562 (Oct. 27, 2000) (rejecting NTIA suggestion of use-based classes because the “only examples cited and guidance provided in the legislative history” led to the conclusion that classes must be defined “primarily by reference to the attributes of the works” rather than their users or uses).

<sup>1766</sup> Accessibility Petitioners Class 17 Initial at 30 (citing 2010 Recommendation at 178).

<sup>1767</sup> For that reason, when the Register began considering uses and users in 2006, she cautioned that “classifying a work solely by reference to the medium on which the work appears, or the access control measures applied to the work,” is beyond what Congress contemplated for this proceeding. 2006 Recommendation at 10 (citing 2003 Recommendation at 11–13).

Office has repeatedly declined to recommend proposed exemptions that have failed to define the class of works to be covered with sufficient particularity.<sup>1768</sup> For example, the Office has rejected requests to recommend a class of works for all fair uses<sup>1769</sup>—a class that proponents suggested in a post-hearing submission.<sup>1770</sup>

In arguing for a different reading, proponents point to the Commerce Committee Report’s discussion of the rulemaking’s role as a “fail-safe” mechanism to address unanticipated changes in the marketplace, as well as the legislative history for section 102, which describes the categories as “illustrative” and containing areas of potential overlap.<sup>1771</sup> Neither source of legislative history, however, can override the statutory directive that exemptions be defined based on “a particular class of copyrighted works.” In any event, the statements relied on by proponents are not inconsistent with the Office’s interpretation. Moreover, the legislative history of the 1976 Copyright Act—which predates the DMCA by twenty years—does not provide persuasive authority for construing the language of section 1201.

While the Register is unable to recommend a single exemption covering all categories of copyrighted works, there is no dispute that proponents seek to access works protected by copyright. And there is precedent for evaluating exemptions for a single use that might involve separate exemptions for separate categories of works.<sup>1772</sup> The Register

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<sup>1768</sup> See, e.g., 2018 Recommendation at 131–32; Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 79 Fed. Reg. 73,856, 73,859 (Dec. 14, 2014); 2006 Recommendation at 17–19.

<sup>1769</sup> See 2003 Recommendation at 82–84 (rejecting request for class of all works for “noninfringing uses, e.g., fair use and private uses” because such a class would be “a blanket exemption for all works—in effect, an administrative abrogation of §1201(a)(1)”; see also Section 1201 Report at 103–04 (noting that Congress created the triennial proceeding as the mechanism to consider the impact of section 1201 on fair uses and seeing “no basis for abandoning that basic framework”).

<sup>1770</sup> See Accessibility Petitioners Class 17 Post-Hearing Resp. at 21–22 (June 4, 2021) (“object[ing] to a specific remuneration requirement” and stating that the regulatory language should at most “simply requir[e] an underlying, noninfringing, accessibility-directed use” so that the legality of circumvention would “be handled by the contours of fair use”).

<sup>1771</sup> See Tr. at 104:10–105:15 (Apr. 5, 2021) (Hersch, American Council of the Blind); Commerce Comm. Report at 36 (addressing role of rulemaking as a “fail-safe” mechanism); H.R. REP. NO. 94-1476 at 53 (1976) (describing the “seven broad categories” in section 102 and explaining the list “does not necessarily exhaust the scope of ‘original works of authorship’”). *But see* COMPENDIUM (THIRD) § 307 (section 102 gives courts “the flexibility to interpret the scope of the existing subject matter categories, but only Congress has the authority to create entirely new categories of authorship”).

<sup>1772</sup> See 2015 Recommendation at 107–08 (considering dual requests for space-shifting that involved literary works and audiovisual works). In this proceeding, the Register has considered



will therefore consider Class 17 a request for separate exemptions covering each section 102 category, with each exemption seeking to permit circumvention “for the purpose of creating an accessible version of the work for people with disabilities.”<sup>1773</sup>

### b. Asserted Noninfringing Uses

Accessibility Petitioners argue that the proposed exemption will enable noninfringing use because “[m]aking works accessible is an uncontroversially noninfringing fair use.”<sup>1774</sup> The first fair use factor considers the purpose and character of the use, including whether it is transformative. In *Authors Guild v. HathiTrust*, the court concluded that converting inaccessible works into accessible ones for print-disabled users was not transformative because it did not “add[] something new” to the underlying work but instead had the same purpose as that of the works’ authors: to allow the works to be read or listened to.<sup>1775</sup> But the court noted that lack of transformativeness “does not end the analysis,”<sup>1776</sup> and it ultimately concluded that this factor favored fair use. The court relied on the Supreme Court’s decision in *Sony Corp. of America v. Universal City Studios, Inc.*, which noted that “[m]aking a copy of a copyrighted work for the convenience of a blind person is expressly identified by the House Committee Report as an example of fair use, with no suggestion that anything more than a purpose to entertain or to inform need motivate the copying.”<sup>1777</sup> The *HathiTrust* court also found it significant that Congress has repeatedly enacted legislation designed to ensure that individuals with disabilities have equal opportunity and can fully participate in society.<sup>1778</sup>

The Register agrees that creating accessible versions of inaccessible copyrighted works, while not transformative, is a favored purpose for fair use. The Office has recognized that individuals with disabilities seek accessible copyrighted works not merely as “a

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text and data mining uses for both motion pictures and literary works in Class 7 as well as preservation uses for both computer programs and video games in Class 14.

<sup>1773</sup> Accessibility Petitioners Class 17 Initial at 10.

<sup>1774</sup> *Id.* at 18.

<sup>1775</sup> 755 F.3d 87, 101–02 (2d. Cir. 2014) (noting that providing for accessibility “enables a larger audience to read those works, but the underlying purpose of the HDL’s use is the same as the author’s original purpose”); see also *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) (transformative uses “add[] something new, with a further purpose or different character, altering the first with new expression, meaning, or message”).

<sup>1776</sup> *HathiTrust*, 755 F.3d at 101.

<sup>1777</sup> *Id.* at 102 (quoting *Sony v. University City Studios*, 464 U.S. 455 n.40 (1984)).

<sup>1778</sup> *Id.* (quoting 42 U.S.C. § 12101(a)(7)).

matter of convenience,<sup>1779</sup> but because those works are necessary for them to fully participate in society. The Register accordingly concludes that this factor weighs strongly in favor of fair use.

For the second fair use factor, the nature of the work, proponents argue that the works are “heterogeneous” but do not provide additional analysis other than noting that the second factor is not dispositive.<sup>1780</sup> Because the proposed exemption would permit creating accessible versions of all copyrighted works, including of highly creative ones “closer to the core of intended copyright protection than others,” the Register finds that this factor does not weigh in favor of fair use.<sup>1781</sup> This factor, however, is of limited significance to the overall analysis.<sup>1782</sup> As to the third fair use factor, the amount and substantiality of the work used, proponents do not squarely address how much of a work is used when converting an inaccessible version into an accessible one.<sup>1783</sup> Courts have recognized, however, that this factor does not necessarily disfavor fair use where copying a work in its entirety is necessary to achieve a favored purpose.<sup>1784</sup> Moreover, the court in *HathiTrust* and the Office have found that copying a full work to make it accessible does not weigh against fair use.<sup>1785</sup> The same conclusion is appropriate here.

Under the fourth fair use factor, proponents suggest that because of “the routine failure of copyright holders to address markets of accessible works,” the exemption as formulated would not cause significant market harm to copyright owners, who choose “not to serve the market of people with disabilities.”<sup>1786</sup> Opponents dispute this

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<sup>1779</sup> See 2012 Recommendation at 22 (noting that e-book exemption was “not merely a matter of convenience, but is instead intended to enable individuals who are blind or visually impaired to have meaningful access to the same content that individuals without such impairments are able to perceive”).

<sup>1780</sup> Accessibility Petitioners Class 17 Initial at 21 (noting that the works at issue in this class “share a common characteristic of inaccessibility, [but] the formats and genres come in many different forms”).

<sup>1781</sup> See *Campbell*, 510 U.S. at 586.

<sup>1782</sup> See *HathiTrust*, 755 F.3d at 102 (quoting *Davis v. Gap, Inc.*, 246 F.3d 152, 175 (2d Cir. 2001) (“The second statutory factor, the nature of the copyrighted work . . . , is rarely found to be determinative.”)).

<sup>1783</sup> See Accessibility Petitioners Class 17 Initial at 21–22 (stating in heading that the amount used “varies” but providing no additional detail in text).

<sup>1784</sup> *HathiTrust*, 755 F.3d at 98 (“For some purposes, it may be necessary to copy the entire copyrighted work, in which case Factor Three does not weigh against a finding of fair use”); see also *Campbell*, 510 U.S. at 586–87 (“we recognize that the extent of permissible copying varies with the purpose and character of the use”).

<sup>1785</sup> *HathiTrust*, 755 F.3d at 98, 102–03; 2018 Recommendation at 98–99.

<sup>1786</sup> Accessibility Petitioners Class 17 Initial at 22–23.

characterization, commenting that “many motion pictures are available in accessible formats,” pointing to “efforts to expand accessibility features on consoles and video games,” and stating that their industries view accessibility to be “extremely important.”<sup>1787</sup> But proponents argue that the proposed exemption would address “accessibility gaps” where, even if a work is made accessible for some types of disabilities, smaller populations with less common disabilities will continue to have unmet needs.<sup>1788</sup>

In the NPRM, the Office noted that proponents must “provide evidence and legal analysis sufficient to enable the Office to make a particularized assessment” of potential market harm, including by providing information about “the availability of accessible-format versions of works in the marketplace.”<sup>1789</sup> Proponents did not discuss these issues, instead “object[ing] to a specific remuneration requirement.”<sup>1790</sup> Opponents express concern that, under the exemption as proposed, circumvention would be allowed even where accessible versions have been made available in the marketplace, resulting in remediating copies displacing sales of accessible copies.<sup>1791</sup> They also raise concerns that remediating material could be further distributed to individuals who do not have disabilities, substituting for sales of authorized copies in the market.<sup>1792</sup>

In addressing exemptions in related contexts, the Office has identified certain considerations that are relevant under the fourth factor. First, the Office has found it significant whether accessible versions of the relevant works are currently available, pointing out that where “an accessible version is not available in the marketplace,” creating such a version is unlikely to harm the market for the work.<sup>1793</sup> Second, the Office has noted that the fourth factor analysis is affected by whether the copies subject

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<sup>1787</sup> Joint Creators Class 17 Opp’n at 3–4.

<sup>1788</sup> See Accessibility Petitioners Class 17 Initial at 10; Tr. at 115:08–117:01 (Apr. 5, 2021) (Bernard, University of Michigan) (explaining the distinction between making a work “accessible for large populations of people who have disabilities” and accessible “for all of the people who have disabilities” as well as that “sometimes companies can’t make it more accessible or won’t make it more accessible” for certain populations).

<sup>1789</sup> NPRM at 65,309.

<sup>1790</sup> Accessibility Petitioners Class 17 Post-Hearing Resp. at 21–22 (June 4, 2021).

<sup>1791</sup> See Joint Creators Class 17 Opp’n at 3 (noting that “many motion pictures are available in accessible formats” but exemption was not limited “to motion pictures or other works that are not available in accessible formats”).

<sup>1792</sup> See *id.* at 4 (raising concerns about proposed exemption’s failure to “disallow further dissemination of the copies beyond disabled individuals with a need for them” or to require that copies “be protected by any security measures to avoid further dissemination”).

<sup>1793</sup> 2018 Recommendation at 100.

to an exemption are lawfully obtained.<sup>1794</sup> Acquiring copies in violation of law “would weigh heavily against a fair use finding, as it plainly is conduct that, were it to become widespread, would adversely affect the . . . copyright owner’s potential market.”<sup>1795</sup> Finally, to protect against downstream market harms, the Office has included language in prior exemptions to prevent copies from being disseminated to parties other than the intended beneficiaries.<sup>1796</sup>

The Register continues to believe that these limitations are critical to the fair use analysis. The Register therefore will assume for purposes of this analysis that the proposed exemption is limited to lawfully obtained copies of works and would allow circumvention only where the user has determined that accessible copies are not reasonably available at a fair price. The Register will also assume that accessible copies made under any exemption will not be further distributed to individuals who do not need them for accessibility purposes.

Subject to these limitations, the Register concludes that the fourth factor would likely weigh in favor of fair use. As the *HathiTrust* court found, when copyright owners have chosen to “forgo royalties that are generated through the sale of [accessible copies]” by not selling such versions, the fourth factor weighs in favor of fair use.<sup>1797</sup> And assuming that the copies are lawfully obtained and are distributed only to those who need them, copyright owners’ concerns about market substitution are significantly mitigated.

Based on the foregoing, the Register concludes that proponents met their burden to show that at least some of the activity in which they seek to engage is likely fair use. The Register therefore will consider whether proponents have demonstrated that they are, or are likely to be, adversely affected in their ability to engage in such uses with respect to particular categories of copyrighted works.

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<sup>1794</sup> See 2012 Recommendation at 24–25 (recommending exemption for e-book accessibility where the work was “lawfully obtained by a blind or other person with a disability”).

<sup>1795</sup> 2018 Recommendation at 298.

<sup>1796</sup> See *id.* at 32–33 (requiring exemption beneficiaries to use TPMs to “reasonably prevent unauthorized further dissemination” of works to align with section 110(2)); *id.* at 110 (imposing similar limitation on accessibility exemption to “reflect the record testimony” that accessible videos are made available to students through secure distribution platforms); *cf.* 17 U.S.C. § 121(b)(1)(B) (requiring copies made under this section to “bear a notice that any further reproduction or distribution in a format other than an accessible format is an infringement”).

<sup>1797</sup> *HathiTrust*, 755 F.3d at 103 (quoting party’s brief and citing party testimony); see also H.R. REP. NO. 94-1476 at 73 (noting that accessible copies of books were “not usually made by the publishers for commercial distribution”).

**c. Asserted Adverse Effects**<sup>1798</sup>

Because proponents are presumed to “have greater knowledge of and access to evidence demonstrating adverse effects on noninfringing uses,” they bear the burden of producing evidence of adverse effects.<sup>1799</sup> This evidence “cannot be hypothetical, theoretical, or speculative, but must be real, tangible, and concrete.”<sup>1800</sup> The Register will recommend exemptions where the preponderance of the evidence shows that users are, or are likely to be, adversely affected in their ability to make a noninfringing use.<sup>1801</sup>

The Office has given proponents multiple opportunities to offer evidence of the harms that this proposed exemption is meant to rectify. In the NPRM, the Office cautioned proponents that they would need to “establish distinct, verifiable, and measurable impacts” on noninfringing use and noted that it was “not clear to what extent various TPMs are effectively applied to every category of work in section 102, some of which may not readily lend themselves to such measures (*e.g.*, sculptural works).”<sup>1802</sup> In their comments, proponents provided some examples of works and TPMs, but they broadly “urge[d] the Office not to impose on people with disabilities the burden of pinpointing every detail and every instance of problematic TPMs.”<sup>1803</sup> At the hearing, the Office again pressed proponents to explain the basis for their view that “there are adequate commonalities across the various [TPMs], types of works, as well as effects on the market or adverse effects, to make this a suitable exemption.”<sup>1804</sup> Proponents did not point to specific TPMs or works but instead made a broader policy argument that the parties “should agree upon a system that incorporates accessibility as an inherent aspect of copyright law and determine how best to best guard against abuses without putting that burden on people with disabilities.”<sup>1805</sup> In a post-hearing letter, the Office asked

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<sup>1798</sup> As discussed below, in this class the issue of causation is intertwined with the question of whether proponents have provided sufficient evidence of adverse effects resulting from TPMs. The Register therefore will consider those issues together.

<sup>1799</sup> Section 1201 Report at 110 (noting that “as a practical matter, the burden of production will effectively be on exemption proponents”) (emphasis omitted).

<sup>1800</sup> *Id.* at 120.

<sup>1801</sup> *Id.* at 111.

<sup>1802</sup> NPRM at 65,309 (internal quotation marks omitted).

<sup>1803</sup> Accessibility Petitioners Class 17 Initial at 10–14; *see also* Accessibility Petitioners Class 17 Reply at 8 (criticizing case-by-case analysis of harm as a “piecemeal approach, which is encumbered by three-year delays”).

<sup>1804</sup> Tr. at 78:22–79:01 (Apr. 5, 2021) (Smith, U.S. Copyright Office).

<sup>1805</sup> Tr. at 83:01–05 (Apr. 5, 2021) (Rosenblum, National Association for the Deaf); *see also* Tr. at 79:18–80:09 (Apr. 5, 2021) (Rosenblum, National Association for the Deaf) (testifying that some caption projects receive DMCA notices based on allegations such activity is infringing, and that

proponents to provide additional information about how TPMs adversely affect “particular categories of works as set forth in section 102” for the Register’s analysis.<sup>1806</sup> Proponents responded by “urg[ing] the Office to reconsider taking the same piecemeal approach that underpins other accessibility-related exemptions from Section 1201’s anticircumvention measures and grant the exemption as proposed.”<sup>1807</sup> They did, however, provide additional information relating to certain types of works—specifically, audiovisual works, video games, literary works, and computer software in medical devices.<sup>1808</sup>

After reviewing the full record, the Register is unable conclude that proponents have met their burden of producing “real, tangible, and concrete” evidence of adverse effects from a sufficiently wide array of TPMs and categories of works to justify the exemption as proposed. While proponents provide significant detail about accessibility issues for users of copyrighted works, many of their examples do not mention TPMs.<sup>1809</sup> Instead, proponents have provided evidence showing that there are many situations in which mass market technology does not account for the needs of particular members of the

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“[i]f the provision of captioning or audio description on any copyrighted content were not considered a copyright infringement simply because it is the provision of accessibility, then we would not have this problem”); Tr. at 82:03–10 (Apr. 5, 2021) (Rosenblum, National Association for the Deaf) (arguing that “the policy for copyright” should not require disability advocates to provide “each specific instance of inaccessibility” in the rulemaking proceeding to justify an exemption); Tr. at 82:18–19 (Apr. 5, 2021) (Rosenblum, National Association for the Deaf) (“As a matter of public policy, this choice is easy.”); Tr. at 90:03–12 (Apr. 5, 2021) (Bernard, University of Michigan) (arguing that statute “doesn’t prescribe a circumstance where you couldn’t identify all classes of works that meet a certain set of criteria” and that the Office “is well-situated to address this fundamental public policy concern”).

<sup>1806</sup> Copyright Office Class 17 Post-Hearing Letter at 2 (May 6, 2021).

<sup>1807</sup> Accessibility Petitioners Class 17 Post-Hearing Resp. at 1 (June 4, 2021).

<sup>1808</sup> *Id.* at 6–13.

<sup>1809</sup> For example, proponents discuss research projects “identif[ied] and imagine[d]” by Professor Christian Vogler at Gallaudet University, such as letting users modify the format, pace, and content of subtitles in a given audiovisual work or interact with a tactile interface for digitized images. Accessibility Petitioners Class 17 Initial at 16–17. There is no suggestion, however, that TPMs protecting the image or the audiovisual work (or its captions) would prevent these projects. Similarly, proponents note attorney Haben Girma’s work developing a solution that allowed her to have someone type spoken words on a Bluetooth keyboard and have that text reproduced on a Braille computer for her to read and orally reply to. Accessibility Petitioners Class 17 Reply at 12–13 (citing Kimberly Adams, *Innovating for Disability, Because You Have To*, MARKETPLACE (Aug. 11, 2020), <https://www.marketplace.org/shows/marketplace-tech/disability-innovation-assistive-technology-braille/>). Neither Ms. Girma’s interview nor proponents’ comment explains how or whether TPMs interfered with her technical solution.

disabled community, who are left to design their own solutions.<sup>1810</sup> The Register credits proponents' evidence and testimony that the disabled community is frequently faced with accessibility gaps as a result of designers not taking their needs into account. But Congress created this proceeding to address the harm from technological protection measures that inhibit noninfringing uses of copyrighted works. With the exception of a few instances, discussed below, proponents have not shown that these accessibility gaps are the result of TPMs, as opposed to, for example, the failure of the commercial marketplace to address accessibility needs.

The Register understands proponents' argument to be that, given a significant lack of accessible materials in the market, proponents should be able to create works that fit their needs, and an exemption will allow them to circumvent technological protection measures when those measures stand in the way of that process.<sup>1811</sup> But proponents bear the burden of providing sufficient evidence for the Register to conclude that adverse effects, as a result of TPMs, are "not merely possible, but probable" across all copyrighted works.<sup>1812</sup> To be clear, the Register does not expect proponents to provide evidence of every type of TPM and the specific accessibility use it inhibits.<sup>1813</sup> But

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<sup>1810</sup> See, e.g., Accessibility Petitioners Class 17 Initial at 12 (discussing colorblind viewers of the 2018 World Cup unable to distinguish between the jerseys of the competing teams); Rebecca Seales, *World Cup 2018: Why millions of fans see the football like this*, BBC News (July 11, 2018), <https://www.bbc.com/news/world-44535687> (noting colorblind issue and solutions such as changing stadium signage and redesigning ticketing websites); Accessibility Petitioners Class 17 Initial at 26 (noting that most websites fail to fully comply with the Web Content Accessibility Guidelines 2.0 and that Zoom pinning feature that can help with interpretation is not available for users by default); Accessibility Petitioners Class 17 Reply at 13 (giving example of YouTube creator and gamer WallsiesDGP who created his own system for playing games because traditional input methods did not work for him and alternatives in the market were dramatically more expensive than a homemade solution).

<sup>1811</sup> See Accessibility Petitioners Class 17 Initial at 9 (suggesting exemption will ensure the disabled community "can have some means of engaging in self-help or seeking the assistance of third parties to access those works on equal terms when copyright holders fail to make access available"); Accessibility Petitioners Class 17 Reply at 12 ("people with disabilities themselves are typically the most knowledgeable about their own needs and limits, and therefore are the best parties for determining what accommodations are necessary in order to allow them the ability to meaningfully access content"); Accessibility Petitioner Class 17 Post-Hearing Resp. at 3 (June 4, 2021) (describing exemption as allowing the disabled community "to flexibly access copyrighted works on equitable terms").

<sup>1812</sup> See Section 1201 Report at 121.

<sup>1813</sup> *Contra* Accessibility Petitioners Class 17 Initial at 14 (suggesting Office's approach imposes "the burden of pinpointing every detail and every instance of problematic TPMs").

proponents must offer sufficient information to allow the Office to fairly assess the extent to which TPMs impede or are likely to impede the uses being proposed.<sup>1814</sup>

As noted above, the Register will treat the current proposal as a request for separate accessibility exemptions for each category of copyrightable work. Viewed in that light, there is not enough evidence to show adverse effects for most categories. For example, proponents do not address literary works in their written comments, and their post-hearing letter states only that it is “not clear” whether the new recommended exemption for Class 8 would fully address accessibility issues as to such works.<sup>1815</sup> Nor have proponents provided evidence of the need to circumvent TPMs on sound recordings. Instead, at the hearing, proponents testified that “generally, sound recordings don’t have technological protections.”<sup>1816</sup> There is similarly not evidence of an inability to access musical compositions, dramatic works, choreographic works, sculptural works, or architectural works as a result of technological protection measures.<sup>1817</sup>

The Register also finds that proponents have not made a showing of adverse effects on noninfringing accessibility uses of computer programs. Proponents’ record for computer programs is focused on medical device software and specifically discusses the ability of an individual with diabetes to modify the software on their insulin pump to

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<sup>1814</sup> Cf. 2018 Recommendation at 299–302 (recommending removal of device limitation for security research exemption because proponents had offered examples of a broad array of device types, such as cryptographic banking, avionics, toll collection systems, and non-implantable medical devices, as well as “a variety of TPMs” for which the adverse effects were the same).

<sup>1815</sup> Accessibility Petitioners Class 17 Post-Hearing Resp. at 11–12 (June 4, 2021) (agreeing that “many—or perhaps all—[accessibility] circumstances will be specifically covered” by section 121 and the corresponding language in Class 8 but suggesting Class 17 could “eliminate any uncertainty”).

<sup>1816</sup> Tr. at 91:01–02 (Apr. 5, 2021) (Band, Library Copyright Alliance). In their post-hearing letter, proponents offer brief examples of technologies that could be adversely affected by TPMs, but these examples are too speculative to serve as the evidentiary basis for this exemption. See Accessibility Petitioners Class 17 Post-Hearing Resp at 18–19 (June 4, 2021) (providing two examples of hypothetical uses for sound recordings and providing four examples of hypothetical uses of musical works, two of which involved bundled audiovisual displays and three of which are digital sound recordings).

<sup>1817</sup> Proponents briefly suggest that audiovisual recordings of some of these works could hypothetically be encumbered by TPMs that prevent the use of software that analyzes and describes those works in an accessible way, but in such a situation the relevant class of works would be audiovisual works, not choreographic or other works. See Accessibility Petitioners Class 17 Post-Hearing Resp. at 18 (June 4, 2021) (providing two examples of applications generating captions or audio descriptions of a “digital recording” of a choreographic or dramatic work).



administer insulin automatically based on glucose levels.<sup>1818</sup> Though proponents suggest that under current law, “chronic illnesses are often considered disabilities,”<sup>1819</sup> the Register disagrees that modifying medical device software by those with such illnesses is within the scope of a class of works addressing accessibility. This exemption is predicated on the argument that “[m]aking works accessible to people with sensory disabilities” is fair use.<sup>1820</sup> But the software on an insulin pump is not “inaccessible” to someone with diabetes in the same sense that an audiovisual work is inaccessible to someone who is partially deaf. Moreover, proposed exemptions to facilitate access to software in medical devices are separately considered in Classes 9 and 12. And because medical devices are the only basis for including software in this class, the Register finds that proponents have not shown an adverse effect on noninfringing use from their inability to circumvent TPMs on computer programs.

Proponents have, however, provided sufficient evidence for the Register to consider the adverse effects on noninfringing use with respect to two types of works: video games and audiovisual works protected by Encrypted Media Extensions (“EMEs”). Each is discussed below.

*i. Video Game Accessibility*

For video games, proponents raise two types of adverse effects. First, proponents suggest that individuals with disabilities may have difficulty using their own input devices, such as controllers or mouse and keyboard alternatives.<sup>1821</sup> Second, proponents point to game design decisions that create accessibility issues, such as the formatting (or lack) of captions for in-game dialogue and short timing windows for taking certain actions (“quick time events”) that may be difficult for some disabled gamers.<sup>1822</sup> Proponents argue that video games have TPMs that prevent the modification of game

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<sup>1818</sup> Accessibility Petitioners Class 17 Initial at 12–13 (discussing software patch for the FreeStyle LibreLink); Accessibility Petitioners Class 17 Post-Hearing Resp. at 12–13 (June 4, 2021) (providing additional information about medical devices).

<sup>1819</sup> Accessibility Petitioners Class 17 Post-Hearing Resp. at 13 (June 4, 2021).

<sup>1820</sup> Accessibility Petitioners Class 17 Initial at 19.

<sup>1821</sup> See Accessibility Petitioners Class 17 Initial at 13 (citing GameGuard TPM as limiting use of input hardware other than “a standard keyboard and mouse”); Accessibility Petitioners Class 17 Reply at 13 (citing statement from game content creator WallsiesDGP that “pre-made accessible controllers, such as the Xbox adaptive controller, are often very expensive”); Accessibility Petitioners Class 17 Post-Hearing Resp. at 10 (June 4, 2021) (“some DRM schemes specifically interfere with the use of accessible controllers and user interfaces by blocking the interoperability of unauthorized third-party hardware or applications with games”).

<sup>1822</sup> See Accessibility Petitioners Class 17 Post-Hearing Resp. at 9–10 (June 4, 2021).

software and the use of third-party applications or hardware, which inhibits both desired accessibility uses.<sup>1823</sup>

In support of these arguments, proponents offer three sources of evidence. First, they make multiple references to a report (titled *Includification*) by the AbleGamers Foundation that discusses accessibility issues in game design.<sup>1824</sup> Second, they point to the experience of a game content creator, WallsiesDGP, who broadcasts gameplay on Twitch and has discussed his experience designing his own setup for accessibility.<sup>1825</sup> Third, they offer general comments and testimony that video games can have TPMs such as GameGuard, which limit disabled individuals in using third-party applications and hardware that can address accessibility gaps.<sup>1826</sup>

*Input devices.* The Register finds that the record for this class is sufficient to establish the likelihood that some gamers with disabilities will be adversely affected in their ability to use nonstandard input devices to play some video games on general-purpose computers. Specifically, they have pointed to the TPM GameGuard, which limits some games on Windows from using alternate input methods.<sup>1827</sup> GameGuard appears to be a

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<sup>1823</sup> See Tr. at 108:08–18 (Apr. 5, 2021) (Reid, American Council of the Blind) (arguing that if TPMs on video games were circumvented, technologists “could actually design basically retrofitted accessibility features” such as “unique control schemes” and captions); *but see* Accessibility Petitioners Class 17 Post-Hearing Resp. at 9 (June 4, 2021) (testifying to general existence of TPMs on gaming distribution platforms but declining to explain how the TPMs inhibit accessibility features as “beyond the scope of this response”).

<sup>1824</sup> AbleGamers Foundation, *Includification: A Practical Guide to Game Accessibility* (2012), available at [https://accessible.games/wp-content/uploads/2018/11/AbleGamers\\_Includification.pdf](https://accessible.games/wp-content/uploads/2018/11/AbleGamers_Includification.pdf) (“*Includification*”).

<sup>1825</sup> Accessibility Petitioners Class 17 Reply at 13 (citing WallsiesDGP, *Homemade disabled accessible PC gaming setup with no Xbox accessible controller*, YOUTUBE (Mar. 2, 2021), <https://www.youtube.com/watch?v=VHttKRQqas0>); *see also* WallsiesDGP, TWITCH.TV, <https://www.twitch.tv/wallsiesdgp> (last visited Oct. 15, 2021).

<sup>1826</sup> Accessibility Petitioners Class 17 Initial at 13 (discussing GameGuard and noting that it interferes with third-party software and hardware); Accessibility Petitioners Class 17 Post-Hearing Resp. at 9 (June 4, 2021) (discussing various TPMs used in video games); Tr. at 108:08–18 (Apr. 5, 2021) (Reid, American Council of the Blind) (TPMs like “Game Guard or similar technologies” can interfere with development of new accessibility tools).

<sup>1827</sup> See *GameGuard Product Brochure*, nProtect, [https://www.inca.co.kr/include\\_file/pdf\\_down/nProtect\\_GameGuard\\_en.pdf](https://www.inca.co.kr/include_file/pdf_down/nProtect_GameGuard_en.pdf) (last visited Oct. 15, 2021) (GameGuard “system requirements” require the Windows operating system, with support for 32-bit and 64-bit installations).

type of anti-cheating software,<sup>1828</sup> but the *Includification* report and statements by the report’s authors suggest that GameGuard interferes with gamers with disabilities using alternate inputs for accessibility purposes. Proponents have provided a link to a video demonstrating this type of activity. In the video, a gamer with limited movement in his fingers uses a joystick and pedal buttons to move his character, with specialized software recognizing the joystick and pedal and converting their data into keyboard inputs.<sup>1829</sup> He also uses software to convert microphone input into keyboard commands (e.g., when WallsiesDGP says the word “reload,” the software imitates the keyboard command to reload a weapon).<sup>1830</sup> To the extent TPMs like GameGuard prevent a game from recognizing those inputs, they limit the ability of gamers with disabilities to engage in this noninfringing use. Based on this unrebutted evidence, the Register finds it likely that disabled gamers playing games protected by TPMs like GameGuard will experience adverse effects if they are unable to circumvent the TPMs to use alternate input methods.

Though proponents have made a showing of adverse effects with respect to games running on general-purpose computers, they have not provided sufficient evidence as to video game consoles. Historically, the Office has closely scrutinized proposed exemptions involving game consoles due to heightened piracy risks,<sup>1831</sup> and opponents have raised similar concerns in this class.<sup>1832</sup> Proponents have not discussed this background, nor have they proposed limitations that would minimize the risk of piracy.<sup>1833</sup> Further, proponents have not provided evidence that GameGuard or similar

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<sup>1828</sup> See *GameGuard*, nProtect, <https://gameguard.nprotect.com/en/index.html> (last visited Oct. 17, 2021) (describing software as “[d]etect[ing] various hack tools that can be abused in games such as auto macros, speed hacks and wall hacks” and detecting “illegal free server[s]”).

<sup>1829</sup> WallsiesDGP, *Homemade disabled accessible PC gaming setup with no Xbox accessible controller*, YOUTUBE (Mar. 2, 2021), <https://www.youtube.com/watch?v=VHttKRQqas0>.

<sup>1830</sup> *Id.* at 3:55–4:45.

<sup>1831</sup> 2012 Recommendation at 43 (analyzing fair use factor four impact on requested exemption for jailbreaking consoles); see also 2015 Recommendation at 199–200 (crediting 2012 conclusion about piracy risks and concluding that proponents had offered “sparse evidence” that failed to satisfy their evidentiary burden and lacked “a legal or factual basis to support a different outcome here”).

<sup>1832</sup> See Joint Creators Class 17 Opp’n at 3–4 (raising concerns about the importance of technological measures “protecting video game consoles” and expressing concerns that circumvention “could create substantial risk not only with respect to copyright protection, but also consumer privacy as well as console security”).

<sup>1833</sup> See Accessibility Petitioners Class 17 Reply at 11 (describing limitations as “implicit” in their regulatory language and declining to provide specific proposals); Accessibility Petitioners Class 17 Post-Hearing Resp. at 21–22 (June 4, 2021) (suggesting Office should propose limitations in the

TPMs prevent the use of third-party accessibility devices with game consoles.<sup>1834</sup> For these reasons, the Register concludes that there is not a record of adverse effects for accessible input devices on video game consoles.

*Game design decisions.* After considering the evidence, the Register finds that proponents have failed to provide sufficient evidence to show sufficiently “real, tangible, and concrete” harm to support an exemption for modifying game design decisions. While proponents suggest that, hypothetically, it is possible to “modify games to add captions” or allow bypassing “mandatory quick time events,”<sup>1835</sup> they do not provide evidence of how or whether such modifications can be done. Their most relevant evidence, the *Includification* report, illustrates the issue. The report was written to advise developers and publishers on ways to address accessibility “as [they] develop [their] games.”<sup>1836</sup> While the report suggests that video game developers can design for accessibility in the first instance, proponents have not shown that it is possible for users to modify the software to make the in-game accessibility changes they desire. Proponents have also insufficiently addressed whether TPMs are the barrier for software modification. For example, proponents suggest that “proprietary platform schemes” employ DRM to prevent modification of the game software distributed on those platforms,<sup>1837</sup> but it is unclear whether that DRM prevents proponents from running modified software or simply works to authenticate games as legally purchased or licensed.<sup>1838</sup>

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first instance but declining to endorse a “specific remuneration requirement” beyond generally requiring “lawful access”).

<sup>1834</sup> Accessibility Petitioners Class 17 Post-Hearing Resp. at 9–10 (June 4, 2021) (briefly mentioning existence of DRM in platforms from Microsoft, Sony, and Nintendo but declining to address “how each of these technologies interface with specific modes of making games accessible”).

<sup>1835</sup> *Id.* The accessibility use of modifying game captions was raised for the first time in the post-hearing letter.

<sup>1836</sup> *Includification* at 5; see *Includification*, Accesible.Games, <https://accessible.games/includification/> (website by AbleGamers Foundation describing *Includification* report as “a huge leap forward for accessibility”); see also *Includification* at 7 (stating document was produced as a result of “request[s] of many game development studios” to respond to the desire from studios to “add accessibility for disabled gamers”).

<sup>1837</sup> See Accessibility Petitioners Class 17 Post-Hearing Resp. at 9 (June 4, 2021) (pointing to DRM employed by “Valve, Epic, Microsoft, Sony, and Nintendo”).

<sup>1838</sup> For example, though *The Elder Scrolls V: Skyrim Special Edition* is available on Steam (and thus according to proponents, uses Valve’s DRM), it appears that visually impaired gamers can install mods that alter the size or presentation of interface elements and modify how colors are displayed in the game. See, e.g., MyGoodEye and Gopher, *Imaginator – Visual Control Device for Skyrim*, NEXUS MODS (Dec. 27, 2019),

*ii. Audiovisual Works – Encrypted Media Extensions (“EMEs”)*

Proponents also raise accessibility questions about audiovisual works, though their written comments focus only on videos available on the internet that are protected by Encrypted Media Extensions (“EMEs”), an HTML standard that “provid[es] APIs to control playback of encrypted content.”<sup>1839</sup> According to proponents, EMEs “indiscriminately block[] ‘any authorized alterations to videos, including color-shifting’” and other tools that could make these videos accessible.<sup>1840</sup> Proponents offer the example of a smartphone application called DanKam, which can “shift[] the colors displayed on devices, replacing the colors that [colorblind individuals] are unable to perceive with colors that they can actually see.”<sup>1841</sup> Proponents assert that EMEs preclude a variety of assistive technologies that involve modifying or manipulating video playback, such as identifying and skipping past strobing effects that could trigger epileptic seizures or shifting the colors in a video so they can be perceived by a colorblind viewer.<sup>1842</sup>

As evidence of these adverse effects, proponents point to the Worldwide Web Consortium (“W3C”)’s technical documentation for EMEs, documentation about the DanKam smartphone app, and several posts by author and activist Cory Doctorow on

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<https://www.nexusmods.com/skyrimspcialedition/mods/4577> (mod “allows you to separately control visual elements like Brightness, Contrast, [and] Saturation”); Fhaarkas, *SkyHUD*, NEXUS MODS (Sept. 8, 2018), <https://www.nexusmods.com/skyrimspcialedition/mods/463> (mod offers “built-in support for font mods” and can be adjusted by modifying file in game subdirectory). The same appears to be possible for PC games purchased from the Epic Games Store and protected by Epic’s DRM. See EgoKat, *Where is the mod folder for Epic Games Launcher?*, REDDIT: R/SURVIVINGMARS (Oct. 18, 2019), [https://www.reddit.com/r/SurvivingMars/comments/djly64/where\\_is\\_mod\\_folder\\_for\\_epic\\_games\\_launcher/](https://www.reddit.com/r/SurvivingMars/comments/djly64/where_is_mod_folder_for_epic_games_launcher/) (discussion thread explaining how to install mods for games purchased on the Epic Game Store).

<sup>1839</sup> *Encrypted Media Extensions*, W3C Recommendation (Sept. 18, 2017), <https://www.w3.org/TR/encrypted-media/>; see Accessibility Petitioners Class 17 Initial at 11–12 (discussing EMEs protecting online videos). Proponents also briefly suggest there is a need to remediate “audiovisual work[s] that [are] not eligible for remediation under the Class 3 exemption,” but they offer no evidence of that need beyond that conclusory statement. Accessibility Petitioners Class 17 Post-Hearing Resp. at 19 (June 4, 2021) (providing brief examples of disabilities requiring circumvention of audiovisual works).

<sup>1840</sup> Accessibility Petitioners Class 17 Initial at 11 (quoting Cory Doctorow, *Disabilities vs. DRM: the World Cup Edition*, ELECTRONIC FRONTIER FOUNDATION (June 22, 2018), <https://www.eff.org/deeplinks/2018/06/disabilities-vs-drm-world-cup-edition>).

<sup>1841</sup> *Id.* at 11–12.

<sup>1842</sup> *Id.*

the EFF website.<sup>1843</sup> The W3C documentation is highly technical, and it briefly addresses accessibility in a note stating that “support content, such as captions, described audio, and transcripts *should not* be encrypted” because “encrypting such tracks would prevent them from being widely available for use with accessibility features in user agent implementations.”<sup>1844</sup> The DanKam documentation describes the app’s settings and explains the developer’s motivations.<sup>1845</sup> The posts by Mr. Doctorow criticize the W3C’s decision to adopt EMEs as part of the HTML5 web standard.<sup>1846</sup>

The Register has reviewed this evidence and concludes that it does not establish that viewers of online videos seeking to engage in noninfringing uses are likely to be adversely affected if they cannot circumvent EMEs. First, while proponents declined to specify “how EMEs function at a technical level,” according to the technical documentation, EMEs appear to be a general framework for HTML5 webpages to include DRM-protected video, with the webpage author choosing what type of DRM to

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<sup>1843</sup> See *id.* at 10–12 (citing *Encrypted Media Extensions*, W3C (Sept. 18, 2017), <https://www.w3.org/TR/encrypted-media/>; Dan Kaminsky, *Dankam*, DAN KAMINSKY’S BLOG, <https://dankaminsky.com/dankam/> (last visited Oct. 15, 2021); Cory Doctorow, *Disabilities vs. DRM: the World Cup Edition*, ELECTRONIC FRONTIER FOUNDATION (June 22, 2018), <https://www.eff.org/deeplinks/2018/06/disabilities-vs-drm-world-cup-edition>; Cory Doctorow, *Human Rights and TPMs: Lessons from 22 Years of the U.S. DMCA*, ELECTRONIC FRONTIER FOUNDATION (Sept. 9, 2020), <https://www.eff.org/deeplinks/2020/09/human-rights-and-tpms-lessons-22-years-us-dmca>).

<sup>1844</sup> *Encrypted Media Extensions*, W3C (Sept. 18, 2017), <https://www.w3.org/TR/encrypted-media/> (emphasis in original).

<sup>1845</sup> See Dan Kaminsky, *Dankam*, DAN KAMINSKY’S BLOG, <https://dankaminsky.com/dankam/> (last visited Sept. 20, 2021) (explaining how to use app’s basic and advanced settings); Dan Kaminsky, *Dankam: Augmented Reality For Color Blindness*, DAN KAMINSKY’S BLOG (DEC. 15, 2010), <https://dankaminsky.com/2010/12/15/dankam/> (discussing motivation behind developing app and what it shows end users); Paul Ridden, *DanKam app clears up color blind confusion*, NEW ATLAS (Jan. 4, 2011), <https://newatlas.com/dankam-smartphone-app-helps-color-blind/17451/> (same).

<sup>1846</sup> Cory Doctorow, *Disabilities vs. DRM: the World Cup Edition*, ELECTRONIC FRONTIER FOUNDATION (June 22, 2018), <https://www.eff.org/deeplinks/2018/06/disabilities-vs-drm-world-cup-edition> (using 2018 World Cup and colorblind issues as illustration of “just the start of the ways that EME . . . will interfere with accessibility”); Cory Doctorow, *Human Rights and TPMs: Lessons from 22 Years of the U.S. DMCA*, ELECTRONIC FRONTIER FOUNDATION (Sept. 9, 2020), <https://www.eff.org/deeplinks/2020/09/human-rights-and-tpms-lessons-22-years-us-dmca> (describing section 1201 as “incompatible with human rights” and giving example of EMEs as potentially limiting ability of individuals with photosensitive epilepsy from skipping strobing effects in videos).

use on the video, if any.<sup>1847</sup> Put another way, the fact that a video complies with the EME specification in HTML5 does not necessarily mean the video is encumbered by a TPM, because “[i]mplementation of Digital Rights Management is not required for compliance with [the EME] specification.”<sup>1848</sup> Whether an HTML5 video is protected by a TPM, and whether that TPM prevents modification of video playback, will vary in each case based on the particular video and the particular protection method.<sup>1849</sup>

Second, the DanKam app does not appear to be directly relevant to the adverse effects of EMEs. DanKam is a smartphone app that was released in December 2010, almost seven years before the W3C adopted the EME specification.<sup>1850</sup> While DanKam appears to be no longer available for download on iOS or Android devices, it has been described as an “augmented reality application” that appears to work largely by color-shifting video input from a smartphone’s camera.<sup>1851</sup> Based on the Register’s understanding of the

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<sup>1847</sup> See Accessibility Petitioners Class 17 Post-Hearing Resp. at 7–8 (June 4, 2021) (describing EME as an API “designed to facilitate the playback of video content on web browsers using a variety of different DRM technologies”); *Encrypted Media Extensions*, W3C (Sept. 18, 2017), <https://www.w3.org/TR/encrypted-media/> (EME specification “does not define a content protection or Digital Rights Management system” and “[i]mplementation of Digital Rights Management is not required for compliance with this specification”); see also Ars Staff, *Over many objections, W3C approves DRM for HTML5*, ARS TECHNICA (July 10, 2017), <https://arstechnica.com/information-technology/2017/07/over-many-objections-w3c-approves-drm-for-html5/> (“EME is not itself a DRM system. Rather, it is a specification that allows JavaScript applications to interact with DRM modules to handle things like encryption keys and decrypting the protected data.”).

<sup>1848</sup> *Encrypted Media Extensions*, W3C (Sept. 18, 2017), <https://www.w3.org/TR/encrypted-media/>.

<sup>1849</sup> Moreover, the Register notes that W3C appears to have considered this issue and concluded that EMEs do not interfere with video accessibility. See *EME and accessibility*, W3C (Mar. 8, 2017), <https://www.w3.org/2017/03/eme-accessibility.html#relevant> (noting that “[r]epeated analysis and testing has shown no barriers to accessing captions, transcripts, or audio description of video”).

<sup>1850</sup> Compare Dan Kaminsky, *Dankam: Augmented Reality For Color Blindness*, DAN KAMINSKY’S BLOG (DEC. 15, 2010), <https://dankaminsky.com/2010/12/15/dankam/> (2010 post announcing app release) with *W3C Publishes Encrypted Media Extensions (EME) as a W3C Recommendation*, W3C (Sept. 18, 2017), <https://www.w3.org/2017/09/pressrelease-eme-recommendation.html.en> (2017 press release by W3C announcing EME recommendation).

<sup>1851</sup> See Dan Kaminsky, *Dankam: Augmented Reality For Color Blindness*, DAN KAMINSKY’S BLOG (DEC. 15, 2010), <https://dankaminsky.com/2010/12/15/dankam/> (citing positive reviews that mention “us[ing] it today in the real world” such as inside a Target store or to view multicolor LEDs on physical devices).

record,<sup>1852</sup> the DanKam app would not be affected by EMEs because it works by viewing the visual appearance of real-world objects and color-shifts them when displaying them on a smartphone screen. Apps like DanKam do not access digital video files, so TPMs on the file do not affect a user's ability to view the video through a smartphone camera and colorshift how the video is displayed within the app.

Third, the posts by Mr. Doctorow do not provide sufficient evidence of adverse effects to satisfy proponents' burden. The first post suggests that EMEs were the reason colorblind viewers had difficulty watching a 2018 World Cup match,<sup>1853</sup> but the only evidence in the record discussing that match references a television broadcast, not online streaming or online DRM preventing a viewer from color-shifting the video.<sup>1854</sup> The second post briefly mentions EMEs as potentially inhibiting "automated tools to identify and skip past strobing effects in videos that could trigger dangerous seizures" but provides no additional information.<sup>1855</sup>

Because proponents have failed to explain how EMEs inhibit accessibility uses, the Register cannot recommend an exemption covering audiovisual works protected by EMEs.

### *iii. Statutory Factors*

In light of her determination that proponents have provided sufficient evidence of adverse effects with respect to video game inputs, the Register now considers the section 1201 statutory factors in relation to that exemption. The first factor, the availability for

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<sup>1852</sup> To the extent this understanding of the record is incorrect, proponents had the obligation to provide the necessary context for the Register to evaluate it. See Section 1201 Report at 110 (as a practical matter, proponents have the burden of production "simply because they have greater knowledge of and access to evidence demonstrating adverse effects").

<sup>1853</sup> Cory Doctorow, *Disabilities vs. DRM: the World Cup Edition*, ELECTRONIC FRONTIER FOUNDATION (June 22, 2018), <https://www.eff.org/deeplinks/2018/06/disabilities-vs-drm-world-cup-edition>.

<sup>1854</sup> See Accessibility Petitioners Class 17 Initial at 12 (comment stating that "because of EME," viewers of 2018 World Cup could not perceive difference between jerseys of the two teams); Rebecca Seales, *World Cup 2018: Why millions of fans see the football like this*, BBC News (July 11, 2018), <https://www.bbc.com/news/world-44535687>. The BBC story links to a tweet with a screenshot of what appears to be an online video of the match, but there is not enough information for the Register to make any conclusions about the relevant TPMs and adverse effects. See @seanhargrave, *Sean Hargrave*, Twitter (July 4, 2018), <https://twitter.com/seanhargrave/status/1014418349101666304/photo/1>.

<sup>1855</sup> See Cory Doctorow, *Human Rights and TPMs: Lessons from 22 Years of the U.S. DMCA*, ELECTRONIC FRONTIER FOUNDATION (Sept. 9, 2020), <https://www.eff.org/deeplinks/2020/09/human-rights-and-tpms-lessons-22-years-us-dmca>.



use of copyrighted works, supports an exemption for using alternate input methods in video games. If gamers with disabilities are able to use accessible controllers or similar input devices, the exemption will increase the availability of games for lawful uses by those users.

The second and third statutory factors do not affect the Register’s analysis of this exemption. An exemption expanding the input methods that can be used to use to play games would have only an incidental impact on archival, preservation, and educational uses. The same is true for scholarly uses such as criticism, comment, and news reporting. This exemption may enable some new scholarship, but it primarily allows individuals with disabilities to engage in recreational uses of video games.

The fourth statutory factor, addressing the effect on the market for or value of copyrighted works, supports this exemption. Provided the exemption is limited to accessibility uses and includes the market safeguards discussed above—notably a market check requirement—there is no indication that it would adversely affect the market for video games. In fact, by increasing the number of gamers able to play games lawfully, the exemption could well benefit that market.

Finally, the Register concludes that the fifth statutory factor, which allows the Librarian to consider any other “appropriate” issues, weighs in favor of this exemption. As the Office has previously noted, public policy strongly favors providing accommodations for accessibility.<sup>1856</sup>

### 3. NTIA Comments

NTIA supports an exemption “covering any work protected by a TPM for the accessibility purposes detailed by proponents.”<sup>1857</sup> It disagrees with the Office’s assessment in the NPRM that exemptions cannot cover a class of “all works,” and instead reads the statute to permit classes to be “flexibly construed though whichever lens is most efficient.”<sup>1858</sup>

NTIA advises that “public policy concerns should push the Librarian to grant this exemption,” and notes that the hearing testimony was focused on “the public policy reasons to permit this exemption.”<sup>1859</sup> NTIA concedes that granting the exemption as

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<sup>1856</sup> See, e.g., 2018 Recommendation at 104 (“[g]enerally, public policy favors removing impediments to access for individuals with disabilities”) (quoting 2012 Recommendation at 21) (alteration in original).

<sup>1857</sup> NTIA Letter at 135.

<sup>1858</sup> *Id.* at 136.

<sup>1859</sup> *Id.* at 136–37.

proposed would “break new ground” but urges that “it is the right thing to do.”<sup>1860</sup> It finds supporting precedent in the Librarian’s renewal of the exemption for e-book accessibility in 2010, notwithstanding “a particularly thin case for renewing” that provision.<sup>1861</sup> In NTIA’s view, the statute requires only “a finding that the prohibition on circumvention has or is likely to have an adverse effect on people’s ability to make non-infringing uses of copyrighted works. Once there is a finding that a TPM does affect such uses (*e.g.*, non-infringing uses for accessibility purposes), the Librarian does not need to delve into a TPM’s technical specifications . . . or whether the TPM is particularly impacting a subsection of works of authorship listed in section 102(a).”<sup>1862</sup>

The Register respectfully disagrees with this reading. Section 1201 provides that the Librarian “shall make the determination . . . of whether persons who are users of a copyrighted work are, or are likely to be . . . adversely affected . . . in their ability to make noninfringing uses under this title of a particular class of copyrighted works.”<sup>1863</sup> The Librarian cannot make such a determination absent evidence of actual or likely adverse effects pertaining to particular classes of works. Nor does a finding of adverse effects involving one class negate the statutory obligation to “make the determination” as to another “particular class.” As explained above, the Register finds that proponents have provided sufficient evidence and analysis to enable such a determination with respect to video game input devices. She concludes, however, that the record for this class does not support a broader exemption.

#### 4. Conclusion and Recommendation

The Register is sympathetic to the policy goals underpinning this proposed class. All participants in this rulemaking, including opponents, agree that copyrighted material should be accessible to individuals with disabilities to the same extent that it is

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<sup>1860</sup> *Id.* at 138.

<sup>1861</sup> *Id.*

<sup>1862</sup> *Id.* at 139.

<sup>1863</sup> 17 U.S.C. § 1201(a)(1)(C); *see also* 2003 Recommendation at 82–84 (rejecting request for class of all works for “noninfringing uses, *e.g.*, fair use and private uses” because such a class would be “a blanket exemption for all works—in effect, an administrative abrogation of §1201(a)(1)”).

accessible to those without disabilities.<sup>1864</sup> And the Office has repeatedly expressed support for a broad statutory review to address modern digital accessibility issues.<sup>1865</sup>

But the Register and the Librarian are limited by the authority granted to them under the law. Proponents at various points of this proceeding have emphasized the broad policy goals of the proposed exemption, which they note would “go beyond what the bounds of what disability law specifically requires” and “contribute to the inclusive and accessible digital future.”<sup>1866</sup> They seek a “broad and clear” exemption aimed at removing the burden from the disabled community to petition for accessibility separate exemptions on a triennial basis.<sup>1867</sup> This proceeding, however, is governed by an explicit statutory command that exemptions be for “particular class[es]” of works, and Congress has explained that the term refers to a “narrow and focused subset of the broad categories of works of authorship.”<sup>1868</sup> An exemption for all copyrighted works cannot fit within those limits, which only Congress has the power to alter.

The Register therefore has evaluated, as she must, whether proponents have provided sufficient evidence of an actual or likely adverse effect on noninfringing uses of particular types of copyrighted works. For the reasons discussed above, she concludes that the evidence submitted is insufficient with respect to most of the categories of works cited by proponents. But proponents have demonstrated that, absent an exemption, disabled individuals are, or are likely to be, limited in their ability to use

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<sup>1864</sup> See AAP Class 17 Opp’n at 2 (objecting to Class 17 as outside the Librarian’s statutory authority but supporting requested expansion of Class 8); DVD CCA & AACLS Class 17 Opp’n at 3 & n.1 (agreeing that accessibility concerns “are of substantial significance” and stating support for “any new reasonable proposals”); Joint Creators Class 17 Opp’n at 2 (Joint Creators “believe strongly that accessibility issues are very important and would welcome the opportunity to voluntarily cooperate with Petitioners and others to improve the availability of accessible content”).

<sup>1865</sup> See 2012 Recommendation at 24; Section 1201 Policy Study at 86 (noting Office’s support for “crafting a digital age update to exceptions in copyright law for persons who are blind or visually impaired”) (quoting *Register’s Perspective on Copyright Review: Hearing Before H. Comm. on the Judiciary*, 114th Cong. 26 (2015) (statement of Maria A. Pallante, Register of Copyrights and Dir., U.S. Copyright Office)); see also 2018 Recommendation at 104 (stating that “[g]enerally, public policy favors removing impediments to access for individuals with disabilities”) (quoting 2012 Recommendation at 21) (alteration in original).

<sup>1866</sup> Tr. at 75:23–76:03 (Apr. 5, 2021) (Reid, American Council of the Blind); Accessibility Petitioners Class 17 Initial at 17; see also *id.* at 9 (exemption would “serve the core goals of the Americans with Disabilities Act”); Accessibility Petitioners Class 17 Reply at 9–10 (exemption would “ensure that people with disabilities have an avenue to fulfill their civil right ‘to live in the world’ through the cultural, economic, and democratic opportunities that attach to copyrighted works”).

<sup>1867</sup> See Accessibility Petitioners Class 17 Initial at 8.

<sup>1868</sup> Commerce Comm. Report at 38.

alternate input methods while playing certain video games. The Register therefore recommends an exemption allowing circumvention of TPMs for the purpose of facilitating such activities.

In crafting the recommended language, the Register has imposed several limitations. First, circumvention must be undertaken for the sole purpose of enabling alternate inputs, as proponents did not introduce evidence of a need to modify game behavior. Second, the Register has limited the exemption to games on general-purpose computers because there is no evidence of adverse effects for video game console input methods. Third and finally, the Register recommends language requiring that the circumvented video game be lawfully acquired.

As explained above, accessibility uses are most clearly fair when coupled with limitations to minimize the risk of market substitution. The Register has addressed this concern in past exemptions by recommending that copyright owners be “remunerated, as appropriate” or that exemption beneficiaries first determine that an accessible version cannot be obtained at a fair price in a timely manner.<sup>1869</sup> Here, however, there is no evidence that a market exists for “accessible” versions of the relevant games—that is, versions distributed without GameGuard or similar anti-cheating TPMs that prevent use of alternate input devices. In this respect, the record in this class differs from that of other classes, in which copyright owners have provided evidence of an existing market for accessible versions of the works at issue. Therefore, in lieu of a specific remuneration or market check requirement, the exemption seeks to ensure that developers are appropriately compensated by requiring that circumvented video games be “lawfully obtained.” Further, the requirement that circumvention be solely for the purpose of enabling accessible input methods will address opponents’ concerns that an exemption could be used for video game piracy or hacking.

Accordingly, the Register recommends that the Librarian designate the following class:

**Video games in the form of computer programs, embodied in lawfully acquired physical or downloaded formats, and operated on a general-purpose computer, where circumvention is undertaken solely for the purpose of allowing an individual with a physical disability to use software or hardware input methods other than a standard keyboard or mouse.**

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<sup>1869</sup> See 2018 Recommendation at 108–10 (requiring that educational institutions “determine[] that an accessible version is not available, not available at a fair price, or not available in a timely way” before circumventing audiovisual works); 2012 Recommendation at 23–25 (requiring that copyright owners be “remunerated, as appropriate” for circumvented e-books).

**APPENDIX**

**RECOMMENDED REGULATORY LANGUAGE**

## Recommended Regulatory Language

(a) *General.* This section prescribes the classes of copyrighted works for which the Librarian of Congress has determined, pursuant to 17 U.S.C. 1201(a)(1)(C) and (D), that noninfringing uses by persons who are users of such works are, or are likely to be, adversely affected. The prohibition against circumvention of technological measures that control access to copyrighted works set forth in 17 U.S.C. 1201(a)(1)(A) shall not apply to such users of the prescribed classes of copyrighted works.

(b) *Classes of copyrighted works.* Pursuant to the authority set forth in 17 U.S.C. 1201(a)(1)(C) and (D), and upon the recommendation of the Register of Copyrights, the Librarian has determined that the prohibition against circumvention of technological measures that effectively control access to copyrighted works set forth in 17 U.S.C. 1201(a)(1)(A) shall not apply to persons who engage in noninfringing uses of the following classes of copyrighted works:

(1) Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where 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 Content System, or via a digital transmission protected by a technological measure, and the person engaging in circumvention under paragraphs (b)(1)(i) and (b)(1)(ii)(A) and (B) of this section reasonably believes that non-circumventing alternatives are unable to produce the required level of high-quality content, or 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, where circumvention is undertaken solely in order to make use of short portions of the motion pictures in the following instances:

(i) For the purpose of criticism or comment:

(A) For use in documentary filmmaking, or other films where the motion picture clip is used in parody or for its biographical or historically significant nature;

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

(C) For use in nonfiction multimedia e-books.

(ii) For educational purposes:

(A) By college and university faculty and students or kindergarten through twelfth-grade (K-12) educators and students (where the K-12 student is circumventing under the direct supervision of an educator), or employees acting at the direction of faculty of such educational institutions for the purpose of teaching a course, including of accredited general educational development (GED) programs, for the purpose of criticism, comment, teaching, or scholarship;

(B) By faculty of accredited nonprofit educational institutions and employees acting at the direction of faculty members of those institutions, for purposes of offering massive open online courses (MOOCs) to officially enrolled students through online platforms (which platforms themselves may be operated for profit), in film studies or other courses requiring close analysis of film and media excerpts, for the purpose of criticism or comment, 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); or

(C) 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 the purpose of criticism or comment, except that such users may only circumvent using screen-capture technology that appears to be offered to the public as enabling the reproduction of motion pictures after content has been lawfully acquired and decrypted.

(2)

(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or via a digital transmission protected by a technological measure, where:

(A) Circumvention is undertaken by a disability services office or other unit of a kindergarten through twelfth-grade educational institution, college, or university engaged in and/or responsible for the provision of accessibility services for the purpose of adding captions and/or audio description to a motion picture to create an accessible version for students, faculty, or staff with disabilities;

(B) The educational institution unit in paragraph (b)(2)(i)(A) of this section has a reasonable belief that the motion picture will be used for a specific future activity of the institution and, after a reasonable effort, has determined that an accessible version of sufficient quality cannot be obtained at a fair market price or in a timely manner, including where a copyright holder has not provided an accessible version of a motion picture that was included with a textbook; and

(C) The accessible versions are provided to students or educators and stored by the educational institution in a manner intended to reasonably prevent unauthorized further dissemination of a work.

(ii) For purposes of paragraph (b)(2) of this section,

(A) “Audio description” means an oral narration that provides an accurate rendering of the motion picture;

(B) “Accessible version of sufficient quality” means a version that in the reasonable judgment of the educational institution unit has captions and/or audio description that are sufficient to meet the accessibility needs of students, faculty, or staff with disabilities and are substantially free of errors that would materially interfere with those needs; and

(C) Accessible materials created pursuant to this exemption and stored pursuant to paragraph (b)(2)(i)(C) of this section may be reused by the educational institution unit to meet the accessibility needs of students, faculty, or staff with disabilities pursuant to paragraphs (b)(2)(i)(A) and (B) of this section.

(3)

(i) Motion pictures (including television shows and videos), as defined in 17 U.S.C. § 101, where the motion picture is lawfully acquired on a DVD protected by the Content Scramble System, or on a Blu-ray disc protected by the Advanced Access Content System, solely for the purpose of lawful



preservation or the creation of a replacement copy of the motion picture, by an eligible library, archives, or museum, where:

- (A) Such activity is carried out without any purpose of direct or indirect commercial advantage;
- (B) The DVD or Blu-ray disc is damaged or deteriorating;
- (C) The eligible institution, after a reasonable effort, has determined that an unused and undamaged replacement copy cannot be obtained at a fair price and that no streaming service, download service, or on-demand cable and satellite service makes the motion picture available to libraries, archives, and museums at a fair price; and
- (D) The preservation or replacement copies are not distributed or made available outside of the physical premises of the eligible library, archives, or museum.

(ii) For purposes of paragraph (b)(3)(i) of this section, a library, archives, or museum is considered “eligible” if—

- (A) 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;
- (B) The library, archives, or museum has a public service mission;
- (C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;
- (D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and
- (E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by paragraph (b)(3)(i) of this section.

(4)

(i) Motion pictures, as defined in 17 U.S.C. § 101, where the motion picture is on a DVD protected by the Content Scramble System, on a Blu-ray disc protected by the Advanced Access Content System, or made available for digital download where:

(A) The circumvention is undertaken by a researcher affiliated with a nonprofit institution of higher education, or by a student or information technology staff member of the institution at the direction of such researcher, solely to deploy text and data mining techniques on a corpus of motion pictures for the purpose of scholarly research and teaching;

(B) The copy of each motion picture is lawfully acquired and owned by the institution, or licensed to the institution without a time limitation on access;

(C) The person undertaking the circumvention views or listens to the contents of the motion pictures in the corpus solely for the purpose of verification of the research findings; and

(D) The institution uses effective security measures to prevent further dissemination or downloading of motion pictures in the corpus, and to limit access to only the persons identified in paragraph (b)(4)(i)(A) of this section or to researchers affiliated with other institutions of higher education solely for purposes of collaboration or replication of the research.

(ii) For purposes of paragraph (b)(4)(i) of this section:

(A) An institution of higher education is defined as one that:

(1) Admits regular students who have a certificate of graduation from a secondary school or the equivalent of such a certificate;

(2) Is legally authorized to provide a postsecondary education program;

(3) Awards a bachelor's degree or provides not less than a two-year program acceptable towards such a degree;

(4) Is a public or other nonprofit institution; and

(5) Is accredited by a nationally recognized accrediting agency or association.

(B) The term "effective security measures" means security measures that have been agreed to by interested copyright owners of motion pictures and institutions of higher education; or, in the absence of such measures, those measures that the institution uses

to keep its own highly confidential information secure. If the institution uses the security measures it uses to protect its own highly confidential information, it must, upon a reasonable request from a copyright owner whose work is contained in the corpus, provide information to that copyright owner regarding the nature of such measures.

(5)

(i) Literary works, excluding computer programs and compilations that were compiled specifically for text and data mining purposes, distributed electronically where:

(A) The circumvention is undertaken by a researcher affiliated with a nonprofit institution of higher education, or by a student or information technology staff member of the institution at the direction of such researcher, solely to deploy text and data mining techniques on a corpus of literary works for the purpose of scholarly research and teaching;

(B) The copy of each literary work is lawfully acquired and owned by the institution, or licensed to the institution without a time limitation on access;

(C) The person undertaking the circumvention views the contents of the literary works in the corpus solely for the purpose of verification of the research findings; and

(D) The institution uses effective security measures to prevent further dissemination or downloading of literary works in the corpus, and to limit access to only the persons identified in paragraph (b)(5)(i)(A) of this section or to researchers or to researchers affiliated with other institutions of higher education solely for purposes of collaboration or replication of the research.

(ii) For purposes of paragraph (b)(5)(i) of this section:

(A) An institution of higher education is defined as one that:

(1) Admits regular students who have a certificate of graduation from a secondary school or the equivalent of such a certificate;

(2) Is legally authorized to provide a postsecondary education program;

(3) Awards a bachelor's degree or provides not less than a two-year program acceptable towards such a degree;

(4) Is a public or other nonprofit institution; and

(5) Is accredited by a nationally recognized accrediting agency or association.

(B) The term "effective security measures" means security measures that have been agreed to by interested copyright owners of literary works and institutions of higher education; or, in the absence of such measures, those measures that the institution uses to keep its own highly confidential information secure. If the institution uses the security measures it uses to protect its own highly confidential information, it must, upon a reasonable request from a copyright owner whose work is contained in the corpus, provide information to that copyright owner regarding the nature of such measures.

(6)

(i) Literary works or previously published musical works that have been fixed in the form of text or notation, distributed electronically, that are protected by technological measures that either prevent the enabling of read-aloud functionality or interfere with screen readers or other applications or assistive technologies:

(A) When a copy or phonorecord of such a work is lawfully obtained by an eligible person, as such a person is defined in 17 U.S.C. § 121; provided, however, that the rights owner is remunerated, as appropriate, for the market price of an inaccessible copy of the work as made available to the general public through customary channels; or

(B) When such a work is lawfully obtained and used by an authorized entity pursuant to 17 U.S.C. § 121.

(ii) For the purposes of paragraph (b)(6)(i) of this section, a "phonorecord of such a work" does not include a sound recording of a performance of a musical work unless and only to the extent the recording is included as part of an audiobook or e-book.

(7) Literary works consisting of compilations of data generated by medical devices or by their personal corresponding monitoring systems, where such circumvention is undertaken by or on behalf of a patient for the sole purpose of

lawfully accessing data generated by a patient's own medical device or monitoring system. Eligibility for this exemption is not a safe harbor from, or defense to, liability under other applicable laws, including without limitation the Health Insurance Portability and Accountability Act of 1996, the Computer Fraud and Abuse Act of 1986, or regulations of the Food and Drug Administration.

(8) Computer programs that enable 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.

(9) 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 paragraph (b)(9), 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.

(10) Computer programs that enable smart televisions to execute lawfully obtained software applications, where circumvention is accomplished for the sole purpose of enabling interoperability of such applications with computer programs on the smart television, and is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. For purposes of this paragraph (b)(10), "smart televisions" includes both internet-enabled televisions, as well as devices that are physically separate from a television and whose primary purpose is to run software applications that stream authorized video from the internet for display on a screen.

(11) Computer programs that enable voice assistant 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 device, or to permit removal of software from the device, and is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. For purposes of this paragraph (b)(11), 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.

(12) Computer programs that enable routers and dedicated network 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 router or dedicated network device, and is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. For the purposes of this paragraph (b)(12), “dedicated network device” includes switches, hubs, bridges, gateways, modems, repeaters, and access points, and excludes devices that are not lawfully owned.

(13) Computer programs that are contained in and control the functioning of a lawfully acquired motorized land vehicle or marine vessel such as a personal automobile or boat, commercial vehicle or vessel, or mechanized agricultural vehicle or vessel, except for programs accessed through a separate subscription service, when circumvention is a necessary step to allow the diagnosis, repair, or lawful modification of a vehicle or vessel function, where such circumvention is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. Eligibility for this exemption is not a safe harbor from, or defense to, liability under other applicable laws, including without limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency.

(14) Computer programs that are contained in and control the functioning of a lawfully acquired device that is primarily designed for use by consumers, when circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device, and is not accomplished for the purpose of gaining access to other copyrighted works. For purposes of this paragraph (b)(14):

(i) The “maintenance” of a device is the servicing of the device in order to make it work in accordance with its original specifications and any changes to those specifications authorized for that device; and

(ii) The “repair” of a device is the restoring of the device to the state of working in accordance with its original specifications and any changes to those specifications authorized for that device. For video game consoles, “repair” is limited to repair or replacement of a console’s optical drive and requires restoring any technological protection measures that were circumvented or disabled.

(15) Computer programs that are contained in and control the functioning of a lawfully acquired medical device or system, and related data files, when circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device or system. For purposes of this paragraph (b)(15):

(i) The “maintenance” of a device or system is the servicing of the device or system in order to make it work in accordance with its original specifications and any changes to those specifications authorized for that device or system; and

(ii) The “repair” of a device or system is the restoring of the device or system to the state of working in accordance with its original specifications and any changes to those specifications authorized for that device or system.

(16)

(i) Computer programs, where the circumvention is undertaken on a lawfully acquired device or machine on which the computer program operates, or is undertaken on a computer, computer system, or computer network on which the computer program operates with the authorization of the owner or operator of such computer, computer system, or computer network, solely for the purpose of good-faith security research.

(ii) For purposes of paragraph (b)(16)(i) of this section, “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 an 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.

(iii) Good-faith security research that qualifies for the exemption under paragraph (b)(16)(i) of this section may nevertheless incur liability under other applicable laws, including without limitation the Computer Fraud and Abuse Act of 1986, as amended and codified in title 18, United States Code, and eligibility for that exemption is not a safe harbor from, or defense to, liability under other applicable laws.

(17)

(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 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, local gameplay on a personal computer or video game console; or

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

(ii) Video games in the form of computer programs embodied in physical or downloaded formats that have been lawfully acquired as complete games, that do not require access to an external computer server for gameplay, and that are no longer reasonably available in the commercial marketplace, solely for the purpose of 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.

(iii) 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 (b)(17)(i)(B) or (b)(17)(ii) of this section.

(iv) For purposes of this paragraph (b)(17), the following definitions shall apply:

(A) For purposes of paragraphs (b)(17)(i)(A) and (b)(17)(ii) of this section, “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) For purposes of paragraph (b)(17)(i)(B) of this section, “complete games” means video games that meet the definition in



paragraph (b)(17)(iv)(A) of this section, or that consist of both a copy of a game intended for a personal computer or video game console and a copy of the game's code that was stored or previously stored on an external computer server.

(C) "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.

(D) "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.

(E) A library, archives, or museum is considered "eligible" if—

(1) 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;

(2) The library, archives, or museum has a public service mission;

(3) The library, archives, or museum's trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(4) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

(5) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(17).

(18)

(i) Computer programs, except video games, that have been lawfully acquired and that are no longer reasonably available in the commercial marketplace, solely for the purpose of lawful preservation of a computer

program, or of digital materials dependent upon a computer program as a condition of access, by an eligible library, archives, or museum, where such activities are carried out without any purpose of direct or indirect commercial advantage. Any electronic distribution, display, or performance made outside of the physical premises of an eligible library, archives, or museum of works preserved under this paragraph may be made to only one user at a time, for a limited time, and only where the library, archives, or museum has no notice that the copy would be used for any purpose other than private study, scholarship, or research.

(ii) For purposes of the exemption in paragraph (b)(18)(i) of this section, a library, archives, or museum is considered “eligible” if—

(A) 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;

(B) The library, archives, or museum has a public service mission;

(C) The library, archives, or museum’s trained staff or volunteers provide professional services normally associated with libraries, archives, or museums;

(D) The collections of the library, archives, or museum are composed of lawfully acquired and/or licensed materials; and

(E) The library, archives, or museum implements reasonable digital security measures as appropriate for the activities permitted by this paragraph (b)(18).

(19) Computer programs that operate 3D printers that employ technological measures to limit the use of material, when circumvention is accomplished solely for the purpose of using alternative material and not for the purpose of accessing design software, design files, or proprietary data.

(20) Computer programs, solely for the purpose of investigating a potential infringement of free and open source computer programs where:

(i) The circumvention is undertaken on a lawfully acquired device or machine other than a video game console, on which the computer program operates;

(ii) The circumvention is performed by, or at the direction of, a party that has a good-faith, reasonable belief in the need for the investigation and has standing to bring a breach of license or copyright infringement claim;

(iii) Such circumvention does not constitute a violation of applicable law; and

(iv) The copy of the computer program, or the device or machine on which it operates, is not used or maintained in a manner that facilitates copyright infringement.

(21) Video games in the form of computer programs, embodied in lawfully acquired physical or downloaded formats, and operated on a general-purpose computer, where circumvention is undertaken solely for the purpose of allowing an individual with a physical disability to use software or hardware input methods other than a standard keyboard or mouse.

(c) *Persons who may initiate circumvention.* To the extent authorized under paragraph (b) of this section, the circumvention of a technological measure that restricts wireless telephone handsets or other wireless devices from connecting to a wireless telecommunications network may be initiated by the owner of any such handset or other device, by another person at the direction of the owner, or by a provider of a commercial mobile radio service or a commercial mobile data service at the direction of such owner or other person, solely in order to enable such owner or a family member of such owner to connect to a wireless telecommunications network, when such connection is authorized by the operator of such network.

