Before the
United States Copyright Office
The Library of Congress
Washington, DC

In the Matter of:	)	
Exemption to Prohibition on	)	
Circumvention of Copyright	)	
Protection Systems for Access	)	Docket No. RM 2011-7
Control Technologies	)	
Notice of Inquiry and Request for Comments	)	

COMMENTS OF

Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
Gallaudet University
Participatory Culture Foundation

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Pursuant to the Copyright Office's September 29, 2011 Notice of Inquiry and Request for Comments of Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies ("NOI"),[1] Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), Gallaudet University, and the Participatory Culture Foundation submit the following comments and respectfully ask the Librarian of Congress to exempt the proposed classes of works from the prohibition on the circumvention of access control technologies in 17 U.S.C. § 1201(a)(1)(A).

I. Proposed Classes

We request that the following classes of works ("Class 1, Class 2, Class 3, and Class 4") be exempted from the anti-circumvention provisions of the Digital Millennium Copyright Act ("DMCA"):[2]

1) Motion pictures and other audiovisual works delivered via Internet protocol (IP) protected by technological measures that control access to such works when circumvention is accomplished to facilitate the creation, improvement, or rendering of visual representations or descriptions of audible portions of such works for the purpose of improving the ability of individuals who may lawfully access such works to perceive such works.
2) Motion pictures and other audiovisual works delivered via Internet protocol (IP) protected by technological measures that control access to such works when circumvention is accomplished to facilitate the creation, improvement, or rendering of audible representations or descriptions of visual portions of such works for the purpose of improving the ability of individuals who may lawfully access such works to perceive such works.
3) Motion pictures and other audiovisual works on fixed disc-based media protected by technological measures that control access to such works when circumvention is accomplished to facilitate the creation, improvement, or rendering of visual representations or descriptions of audible portions of

[1] Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Notice of Inquiry and Request for Comments, United States Copyright Office Docket No. RM 2011-7, 76 Fed. Reg. 60,398 (Sept. 29, 2011) (to be codified at 37 C.F.R. pt. 201) [hereinafter NOI].
[2] 17 U.S.C. § 1201(a)(1) (2006).

such works for the purpose of improving the ability of individuals who may lawfully access such works to perceive such works.

4) Motion pictures and other audiovisual works on fixed disc-based media protected by technological measures that control access to such works when circumvention is accomplished to facilitate the creation, improvement, or rendering of audible representations or descriptions of visual portions of such works for the purpose of improving the ability of individuals who may lawfully access such works to perceive such works.

Classes 1 through 4 are narrowly tailored and closely follow the requirements of a class as set out in the NOI.[3] The legislative history of the DMCA indicates that each class should begin with one of the categories of works from 17 U.S.C. § 102.[4] A proposed class should then be refined and tailored based on the applicable factual circumstances.[5] Appropriate limitations to the scope of a proposed class include references to the medium, access control mechanisms, and type of user.[6]

Each of the proposed classes closely follows the tailoring requirements of the NOI. The starting point for each proposed class is a section 102 category—"[m]otion pictures and other audiovisual works"; the classes are then appropriately tailored to: 1) the medium in which they are delivered, including fixed media and IP-delivered video; 2) the technological measures controlling access to the works, including CSS and AACS; and 3) the type of use of the works—namely, the creation, improvement, or rendering of visual or audible representations of portions of the works. As with classes granted exemptions during the 2010 rulemaking, each of the proposed classes is narrowly tailored to reduce the risk that circumvention will be accomplished for an improper purpose and deter further investment by rightsholders.[7]

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[3] NOI, *supra* note 1, at 60,402.
[4] *Id.*
[5] *Id.*
[6] *Id.* at 16.
[7] Recommendation of the Register of Copyrights: Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, United States Copyright Office Docket No. RM 2008-08, at 25 (Jun. 11, 2010), *available at* http://www.copyright.gov/1201/2010/initialed-registers-recommendation-june-11-2010.pdf [hereinafter Register Recommendation 2010].

In light of the ongoing pattern of conflict between the anti-circumvention provisions of 1201 and attempts to improve accessibility, we also encourage, in the alternative, the exemption of the following more general class of works ("Class 5"):

5) Literary works, musical works, dramatic works, pictorial and graphic works, motion pictures and other audiovisual works, and sound recordings protected by technological measures that control access to such works when circumvention is accomplished to facilitate the creation, improvement, or rendering of visual, audible, tactile, or other representations or descriptions of copyrighted works for the purpose of improving the ability of individuals who may lawfully access such works to perceive such works.

We acknowledge, as the Librarian has, that this proceeding is not perfectly suited to address the broad conflicts between accessibility and copyright law generally or the DMCA's anti-circumvention measures specifically.[8] We encourage the Librarian, however, to take notice of the many instances where the record supports granting a series of specific exemptions for multiple classes of works for related purposes, such as improving accessibility. In such cases we believe that it is entirely appropriate, and within the authority vested in the Copyright Office and the Librarian, to consider granting an exemption for a broader class of works. This broader exemption would encompass the series of narrow classes whose exemption from the anti-circumvention measures is likely to be supported by the record in this proceeding. Granting a broad exemption is the best way to ensure that the DMCA does not unintentionally prevent millions of disabled Americans from experiencing digital media on terms equal to their hearing and seeing peers.

II. Summary of Argument

These comments represent the joint concerns of Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), Gallaudet University, and the Participatory Culture Foundation, three organizations committed to facilitating equal access for all Americans to the full spectrum of educational, informational, and cultural

[8] Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies: Final Rule, United States Copyright Office Docket No. RM 2008-8, 75 Fed. Reg. 43,839 (Jul. 27, 2010) [hereinafter 2010 Final Rule].

opportunities reflected in the diverse digital media landscape of the twenty-first century.

Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI) is a non-profit organization originally established in 1968 to promote further distribution of text telephones (TTYs) in the deaf community and to publish an annual national directory of TTY numbers. Today, TDI provides leadership in achieving equal access to telecommunications, media, and information technologies for deaf and hard of hearing people.

Gallaudet University, federally chartered in 1864, is a bilingual, diverse, multicultural institution of higher education that ensures the intellectual and professional advancement of individuals who are deaf or hard of hearing through American Sign Language and English. Gallaudet maintains a proud tradition of research and scholarly activity and prepares its graduates for career opportunities in a highly competitive, technological, and rapidly changing world.

Participatory Culture Foundation (PCF) is a non-profit organization dedicated to supporting a democratic media by creating open and decentralized video tools and services. PCF is the operator of the Universal Subtitles website, which gives individuals, communities, and larger organizations the power to overcome accessibility and language barriers for online video.

Collectively, we join a growing chorus of voices concerned that the anti-circumvention measures of the Digital Millennium Copyright Act (DMCA) may impose barriers to facilitating and improving accessibility to digital media.[9] We urge the Copyright Office and the Librarian to consider how anti-circumvention measures threaten the ability of people who are deaf, hard of hearing, blind, or

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[9] *See, e.g.*, Statement of the United States of America, on Improving Accessibility to Copyrighted Works for Blind and Visually Impaired Persons, World Intellectual Property Organization
Standing Committee on Copyright and Related Rights (SCCR) (May 26, 2009), *available at* http://www.copyright.gov/docs/sccr/statement/us-intervention.pdf [hereinafter U.S. WIPO Statement]; Jodie Griffin, *Copyright Does Not Trump Disability Rights Law*, PUBLIC KNOWLEDGE: POLICY BLOG (Nov. 2, 2011), http://www.publicknowledge.org/blog/copyright-does-not-trump-disability-rights-la; Danny O'Brien, *Wanted: Your Stories of Disability Versus Copyright Law*, ELECTRONIC FRONTIER FOUNDATION: DEEPLINKS BLOG (Apr. 15, 2009), https://www.eff.org/deeplinks/2009/04/wanted-your-stories-disability.

visually impaired to experience the rapidly expanding universe of digital video programming on equal terms with their hearing and seeing peers. In particular, we ask the Librarian to promulgate a narrowly tailored set of exemptions to the anti-circumvention measures for captions and video descriptions of digital video distributed via Internet protocol or on fixed media. These exemptions are particularly important to clear the way for accessibility technologists to fill gaps in recent legislative and regulatory efforts to require the captioning and video description of digital video programming. The efforts of these technologists are both legally permissible and socially desirable, but are hampered by the circumvention prohibition of the DMCA.

On October 8, 2010, President Obama signed into law the Twenty-First Century Communications and Video Accessibility Act ("CVAA"). The purpose of the CVAA, among other things, was to update communications laws to ensure that individuals with disabilities could fully access video programming.[10] The CVAA mandated that the Federal Communications Commission ("FCC") promulgate rules requiring closed captioning and video description[11] of certain video programming and form an advisory committee to investigate and advise the Commission on technical issues surrounding captioning and video description of video programming.[12]

While the FCC's rules likely will require a substantial amount of digital programming to be captioned, the CVAA excludes a significant amount of digitally distributed programming from captioning and video description requirements, including video distributed exclusively via Internet protocol and on fixed media, such as DVDs, Blu-ray Discs, and HD DVDs.[13] And industry commenters in the FCC rulemaking stated that mandatory captioning was burdensome and costly, suggesting that the voluntary provision of captions and

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[10] S. Rep. No. 111-386, at 1 (2010) [hereinafter CVAA Senate Report].
[11] "Video description makes television programming more accessible to individuals who are blind or visually impaired [by inserting] audio descriptions of a television program's key visual elements into natural pauses in the program's dialogue." F*CC Encyclopedia*, http://www.fcc.gov/encyclopedia/video-description (last visited Nov. 29, 2011).
[12] *See* Twenty-First Century Communications and Video Accessibility Act of 2010, P.L. 111-260, 124 Stat 2751 (2010) [hereinafter CVAA].
[13] See discussion *infra* Part VI.A.2.

video description outside the CVAA's mandates will not soon be forthcoming, if at all.[14]

The rapid evolution of web technologies could provide a partial solution. Accessibility technologists, including members of non-profit organizations and academic researchers, now have access to a cornucopia of tools to address the captioning and video description gaps left by industry's refusal or inability to voluntarily implement captions and video description, where not mandated to do so by law. For example, crowdsourcing technology offers the potential to funnel the efforts of accessibility-minded volunteers to generate and improve captions and video descriptions for existing video programming, allowing video programming creators and distributors to reach previously unserved markets of consumers who are deaf or hard of hearing at little or no cost.[15]

During the course of the FCC's CVAA rulemakings, however, many video programming creators and distributors cast doubt on the goals of accessibility technologists, insisting that the creation or improvement of captions and video descriptions is impossible without the express permission of a video's copyright holder.[16] In short, these industry representatives suggested a regime in which

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[14] *See, e.g.*, Comments of the Motion Picture Association of America, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154, at 13 (Oct. 19, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=702175184 [hereinafter MPAA Comments]; Comments of the National Association of Broadcasters, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154, at 24-25 (Oct. 19, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=702175184 [hereinafter NAB Comments]; Comments of the National Cable and Telecommunications Association, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154, at 13, (Oct. 19, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021715163 [hereinafter NCTA Comments].

[15] *See*, *e.g.*, UNIVERSAL SUBTITLES, http://www.universalsubtitles.org/en/about (last visited Nov. 29, 2011).

[16] *See e.g.*, Comments of Starz Entertainment, LLC, In re Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket

copyright holders are gatekeepers for accessibility, reserving the exclusive right to unilaterally determine if and when consumers who are deaf, hard of hearing, blind, or visually impaired will be able to experience video programming on the same terms as everyone else. This industry proposition—that copyright law, a system specifically designed to promote accessibility of creative works, could be used to *inhibit accessibility*—is wholly without merit. At most, the addition or improvement of captions or video descriptions constitutes noninfringing fair use.[17] Moreover, Congress's extensive efforts to require captioning and video description for a substantial amount of video programming provide strong indicia that accessibility cannot be legally impeded by copyright law.

Notwithstanding the noninfringing nature of adding and improving captions and video descriptions, the DMCA's anti-circumvention measures still pose a legal threat to accessibility technologists seeking to engage in such activities. As the Copyright Office and the Librarian are well aware, video programming creators and distributors have long encumbered video distributed on fixed media, such as DVDs, with digital rights management ("DRM") technology, the circumvention of which is generally impermissible under the anti-circumvention measures.[18] And similar DRM technology now pervades Internet-distributed video.[19]

Thus, the potential for liability under the DMCA is adversely affecting the utilization of existing technology and the research and development of new technology to facilitate accessibility to digital video programming. Moreover, there is strong reason to expect that potential DMCA liability will chill accessibility efforts over the course of the next three years. As a result, we ask the Librarian to give breathing room to deaf, hard of hearing, blind, and visually impaired people, and the technologists committed to aiding them. The Librarian should grant anti-circumvention exemptions to facilitate the creation and improvement of captions and video descriptions of digital video programming, and the research and experimentation necessary to facilitate the necessary technologies underpinning these pursuits.

No. MB 11-154, at 3-4 (Oct. 18, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021715018 [hereinafter Starz Comments].

[17] *See* discussion *infra* Part V.

[18] Register Recommendation 2010, *supra* note 7, at 46-48.

[19] *See* discussion *infra* Part III.A.

Furthermore, in light of the pattern of existing and likely future conflict between the anti-circumvention measures and attempts to improve accessibility, we encourage the Librarian and the Copyright Office to consider a general exemption for circumvention necessary to facilitate and improve the accessibility of digital media. Improving accessibility is not a trivial measure of convenience, but rather a core issue of equal access and civil rights for the millions of Americans who are deaf, hard of hearing, blind, visually impaired, or who face other physical, cognitive, or mental challenges. These Americans should have the freedom to fully participate in the rich cultural and societal experiences afforded by digital media, and the Librarian and the Copyright Office should take advantage of this opportunity to remove the barriers created by the prohibition on circumvention that prevent these Americans from doing so. Removing these barriers would allow accessibility technologists to research and develop important technologies that improve accessibility to copyrighted works—and for people with disabilities to utilize those technologies.

We note that video programming is merely the tip of the iceberg with respect to the chilling effects of the anti-circumvention measures and DRM technology on the development and utilization of innovative accessibility technology. In the previous three rulemakings conducted pursuant to 17 U.S.C. § 1201(a)(1)(C), the Librarian has recognized the strong potential for the combination of access controls and the DMCA's anti-circumvention measures to impede accessibility, granting exemptions to facilitate improved access to ebooks for people who are blind or visually impaired.[20] And in 2009, the United States delegation to the World Intellectual Property Organization's Standing Committee on Copyright and Related Rights acknowledged that access controls and the DMCA's anti-circumvention measures impede accessibility of copyrighted works to people who are blind or visually impaired, pointing to the exemption promulgated by the Librarian as exemplary solutions to this problem.[21] We understand that other commenters plan to seek renewal and expansion of this exemption.

Moreover, people who are deaf, hard of hearing, blind, or visually impaired are not the only ones potentially affected by the chilling effects of the DMCA and copyright law on accessibility improvements. For example, a 2010 report by the

[20] 2010 Final Rule, *supra* note 8, at 43,839.
[21] *See* U.S. WIPO Statement, *supra* note 9, at 4.

Silicon Flatirons Center for Law, Technology, and Entrepreneurship and the Coleman Institute for Cognitive Disabilities noted that cloud-based accessibility technologies were poised to improve the accessibility of web content to people with physical, sensory, or cognitive disabilities, but that copyright and related barriers—presumably including the DMCA—could prevent academic researchers, non-profit organizations, and entrepreneurs from implementing such technology.[22]

Furthermore, DMCA-centric chilling effects are not limited to content; many devices whose operating systems and applications are encumbered with DRM technology lack important accessibility features. For example, Microsoft asserted to the FCC that implementing captioning functionality on its mobile devices was a feat of "novel engineering"[23] that would take years to accomplish—despite the existence of captioning functionality on competing devices.[24] And Amazon's Kindle device is capable of reading ebooks aloud, but disables the functionality unless a copyright holder has granted permission.[25]

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[22] *See* Jeffery A. Hoehl & Kaleb A. Sieh, Cloud Computing and Disability Communities: How Can Cloud Computing Support a More Accessible Information Age and Society?, *available at* http://www.silicon-flatirons.org/documents/publications/report/7302010CloudComputingandDisabilityCommunities.pdf.

[23] Comments of Microsoft, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. 11-154, (Oct. 19, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021715161 [hereinafter Microsoft Comments].

[24] Although it is difficult to evaluate the performance of captioning functionality in a continuously evolving marketplace, Research in Motion and Apple offer captioning functionality on their smartphones. *See* Comments of Research in Motion, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154, at 3 (Nov. 2, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021744231; *see also* FCC Chairman's Awards for Advancement in Accessibility, Federal Communications Commission, at 21:57 (Oct. 28, 2011), *available at* http://www.fcc.gov/events/chairmans-awards-advancement-accessibility (noting that Apple's iPhone supports captions).

[25] AMAZON, KINDLE USERS GUIDE, at 64 (3rd ed.), *available at*

These devices may be altered through the process of "jailbreaking" to support important accessibility features like the display of captions, the playback of video descriptions, and the ability to read text aloud, but consumers who jailbreak their devices—along with the researchers who jailbreak their own devices to research and develop such technologies—could run afoul of the DMCA's anti-circumvention measures without an appropriate exemption. Again, we understand that other commenters plan to seek the renewal and expansion of the Librarian's previously granted jailbreaking exemption.

Although the remainder of our comments focuses on Classes 1 through 4, which are limited to improving the accessibility of motion pictures and other audiovisual works, we believe that the supporting record necessary to grant our requested exemption for Class 5, which would extend protection from the anti-circumvention measures to improving the accessibility of digital media more generally, has been established in the past and will be sufficiently supported by other commenters in this proceeding. Granting a broad exemption is the best way to ensure that the DMCA does not deny all Americans the right to experience digital media on equal terms.

Nevertheless, should the Copyright Office decline our request to grant an exemption for Class 5, our comments below sufficiently demonstrates the necessity of an exemption for Classes 1 through 4. The addition or improvement of captions or video description to promote accessibility is an exemplary purpose for circumvention envisioned by Congress under the user exemption process for the DMCA's anti-circumvention measures.

Congress created the exemption process to ensure that the prohibition against circumvention did not diminish the availability of copyrighted materials to particular groups or individuals due to changes in the marketplace.[26] Changes in the marketplace have led to fixed media overtaking videocassettes,[27] and the rapidly growing amount of uncaptioned IP-delivered programming is poised to supplant traditional broadcasting and cable. Because video delivered via IP and fixed media often lacks proper captions and video descriptions, denying the requested exemptions could result in the diminished availability of works for deaf and blind consumers.

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http://kindle.s3.amazonaws.com/Kindle_Users_Guide_v3.pdf.

[26] Register Recommendation 2010, *supra* note 7, at 8-9.

[27] *Id.* at 57-59.

The analysis that follows demonstrates that based on the criteria set out in the NOI, exemptions should be granted for Classes 1 through 4. First, the works in the proposed classes are protected by technological measures put in place by the copyright owner that control access to those works. Second, the enumerated noninfringing activities are prevented by the access control measures. Third, the activities described are all exemplary noninfringing fair uses. Finally, the balance of the statutory factors enumerated in 17 U.S.C. § 1201(a)(1)(C) militate in favor of granting an exemption for Classes 1 through 4.

III. The Technological Access Control Measures

To qualify for an exemption from the prohibition on circumvention of section 1201, the works in the proposed classes must be protected by technological measures put in place with the authority of the copyright owner and designed to control access to those works.[28] This section describes the technological measures used to control access to the proposed classes of works, both for works delivered via Internet protocol and those delivered via fixed media.

A. Motion Pictures and Other Audiovisual Works Delivered via Internet Protocol

Access to IP-delivered video is moderated by a variety of constantly evolving DRM technologies. The technologies commonly include a server-based authentication mechanism in conjunction with trusted client code that handles license validation, license restrictions, and decryption of content.[29] It is impossible, however, to give a single coherent account of the mechanisms at issue because different distributors of IP-delivered video utilize different DRM technologies to protect access to the videos they deliver. While vendors like Adobe and Microsoft offer specific DRM products for use in distributing video over Internet protocol,[30] the market for IP-delivered video is currently in a state

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[28] NOI, *supra* note 1, at 60,399-400.

[29] Email from Dr. Christian Vogler, Gallaudet University Technology Access Program, to Blake Reid, Institute for Public Representation, (Nov. 22, 2011, 4:43p.m. EST) (on file with author).

[30] Chris Hock, *DRM and digital media protection with Flash Media Server*, ADOBE DEVELOPER CONNECTION / FLASH MEDIA SERVER DEVELOPER CENTER / (Mar. 19, 2007),

of flux with respect to DRM, leaving uncertain which product or products distributors of video will settle upon.

For example, Netflix, a leading distributor of video via Internet protocol, selected Microsoft's PlayReady DRM technology for use on Netflix's streaming video product in May 2010.[31] Yet several months later, Netflix complained about inconsistencies in PlayReady, acknowledging that PlayReady did not work on many devices and that Netflix would have to adapt its DRM strategy.[32] Facing a similar operational issue with its DRM scheme, Google blocked certain mobile devices with its Android operating system from downloading movies from the official Android Market.[33]

Other distributors have similarly changed their DRM strategies. For example, Hulu, another distributor of IP-delivered video, first implemented simple Javascript-based DRM technology, engaging in a "cat-and-mouse game" with manufacturers of television-connected devices like the Boxee Box and Google TV in an effort to block them from accessing Hulu's content.[34] Later, Hulu

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http://www.adobe.com/devnet/flashmediaserver/articles/digital_media_protection.html; *Microsoft Play Ready: Control Access Technology for Digital Entertainment*, MICROSOFT, http://www.microsoft.com/playready/default.mspx (last visited Dec. 1, 2011); MSDN: Digital Rights Management (DRM), http://msdn.microsoft.com/en-us/library/cc838192(v=vs.95).aspx, (last visited Nov. 30, 2011).

[31] Press Release, Microsoft, Netflix Taps Microsoft PlayReady as Its Primary DRM Technology for Netflix Ready Devices and Applications (May 25, 2010), *available at* http://www.microsoft.com/Presspass/press/2010/may10/05-25PlayReadyNetflixPR.mspx.

[32] *Netflix on Android*, THE NETFLIX BLOG (Nov. 12, 2010), http://blog.netflix.com/2010/11/netflix-on-android.html.

[33] Mike Isaac, *Netflix App Released for Android Phones, Sorta,* WIRED: EPICENTER BLOG (May 12, 2011), http://www.wired.com/epicenter/2011/05/netflix-android-phone/.

[34] Tim Conneally, *Hulu whips up its own DRM to block people from watching videos outside browsers,* BETANEWS, http://betanews.com/2009/04/02/hulu-whips-up-its-own-drm-to-block-people-from-watching-videos-outside-browsers/ (last visited Nov. 30, 2011); Clint Boulton, *Google TV Blocked on ABC, CBS, NBC Websites*, EWEEK.COM (Oct. 23, 2010), http://www.eweek.com/c/a/Web-Services-Web-20-and-SOA/Google-TV-Blocked-on-ABC-CBS-NBC-Websites-638513/.

adapted a device-specific rollout of its premium Hulu Plus service, owing to what analysts suggested was a changing DRM implementation.[35]

Further compounding this uncertainty is the imminent departure of incumbent distributors of DRM technology from the marketplace. For example, Adobe recently announced plans to cease development of mobile versions of the Flash video distribution platform[36]—which underpins several IP video services such as Hulu[37]—leaving the platform's DRM features unsuited for the rapidly growing world of video delivered to mobile devices. And rumors abound that Microsoft plans to imminently cease development of Silverlight[38]—the platform on which its PlayReady DRM technology operates.[39]

Adobe and other video distribution vendors have committed to adopting the Hypertext Markup Language 5 ("HTML5") standard of the World Wide Web Consortium ("W3C") for future distribution of video.[40] But it is unclear how that standard will implement DRM for the distribution of video.[41] A technical discussion among developers during the development of that platform made clear that DRM would be a requisite for many video distributors to deliver video,

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[35] Mike Isaac, *Hulu Plus Hits Android, One Handful of Devices at a Time*, WIRED: EPICENTER BLOG (Jun. 23, 2011), http://www.wired.com/epicenter/2011/06/hulu-plus-android/.

[36] Danny Winokur, *Flash to Focus on PC Browsing and Mobile Apps; Adobe to More Aggressively Contribute to HTML5*, ADOBE FEATURED BLOGS (Nov. 9, 2011), http://blogs.adobe.com/conversations/2011/11/flash-focus.html; *see also* Ryan Paul, *Adobe guts mobile Flash player strategy*, ARS TECHNICA (Nov. 9, 2011), http://arstechnica.com/gadgets/news/2011/11/adobe-reportedly-planning-to-gut-mobile-flash-player-strategy.ars.

[37] Hulu Frequently Asked Technical Questions, HULU, http://www.hulu.com/support/technical_faq (last visited Nov. 30, 2011).

[38] Mary Jo Foley, *Will there be a Silverlight 6 (and does it matter)?*, ZDNET: ALL ABOUT MICROSOFT (Nov. 8, 2011), http://www.zdnet.com/blog/microsoft/will-there-be-a-silverlight-6-and-does-it-matter/11180?tag=mantle_skin;content.

[39] MSDN: Digital Rights Management (DRM) http://msdn.microsoft.com/en-us/library/cc838192(v=vs.95).aspx, (last visited Nov. 30, 2011).

[40] *See* Ryan, *supra* note 36.

[41] One possible strategy for delivery of HTML5 would utilize Dynamic Adaptive Streaming over HTTP ("DASH"). *See* Ryan Paul, *The trials and tribulations of HTML video in the post-Flash era*, ARS TECHNICA (Nov. 21, 2011), http://arstechnica.com/business/news/2011/11/the-trials-and-tribulations-of-html-video-in-the-post-flash-era.ars.

but showcased widespread disagreement among developers about whether and how to incorporate DRM into the standard.[42] And Flash, Silverlight, and HTML5 are only a few of the technologies that will be used to distribute video with DRM over the next three years; leading media playback software such as Apple's Quicktime and Microsoft's Windows Media Player both apparently support their own forms of DRM.[43]

Regardless of the specific type of DRM employed, it is increasingly likely that a substantial portion of IP-delivered video uses, and will continue to use, DRM technologies that likely meet the statutory threshold of a technological measure that controls access to a copyrighted work. This is evident from the insistence of content creators that manufacturers of video-playback devices employ strong DRM to control access to their works.[44]

Proposed Classes 1 and 2 involve copyrighted works where access may be controlled by any of the aforementioned varieties of DRM. As in previous proceedings where exemptions were granted, both proposed classes involve instances where the individual seeking to circumvent the access control has purchased or otherwise obtained the lawful right to access the copyrighted works. Each class contemplates circumvention by deaf, hard of hearing, blind, or visually impaired users seeking to meaningfully perceive the works and by technologists seeking to research and develop technologies to improve the accessibility of the works. In each instance, lawful access to the copyrighted work is prevented by DRM.

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[42] *Bug 10902 - <video> element needs to support some form of DRM solution*, W3.ORG, http://www.w3.org/Bugs/Public/show_bug.cgi?id=10902 (last visited Nov. 30, 2011).

[43] *Protected content not playing in iTunes or QuickTime*, APPLE SUPPORT (Jul. 15, 2009), http://support.apple.com/kb/TS2749; *Windows Media Player DRM: frequently asked questions*, WINDOWS, http://windows.microsoft.com/en-US/windows-vista/Windows-Media-Player-DRM-frequently-asked-questions (last visited Nov. 30, 2011).

[44] David Pogue, *Nook's Specs Are Exaggerated, Again*, N.Y. TIMES, Nov. 17, 2011, http://pogue.blogs.nytimes.com/2011/11/17/nooks-specs-are-exaggerated-again/ / (quoting a Barnes & Noble representative who noted that the "Nook Tablet is one of the first tablets which integrates high security silicon and meets all the security and DRM requirements of HD video content providers and movie studios.").

B. Motion Pictures and Other Audiovisual Works Delivered via Fixed Media.

Unlike the ever-evolving landscape of DRM for IP-delivered video, access to DVDs and other fixed media tends to be protected by one of only a limited few technical protection measures. DVDs and certain other fixed media are generally protected by the Content Scramble System (CSS), a form of encryption. CSS is a form of encryption-based DRM technology that protects nearly all commercially produced DVDs.[45] CSS employs an algorithm to encrypt the copyrighted contents of a DVD and protect that content from unauthorized access and copying.[46] Encryption technology such as CSS likely meets the statutory definition of a technological measure that controls access to a work.[47] More recently developed forms of fixed media such as Blu-ray discs and HD DVDs are protected by Advanced Access Content System (AACS), which is simply a more technologically advanced variant of CSS designed to protect content from unauthorized access or copying.[48] Because AACS is similar in operation and effect to CSS, it likely meets the statutory threshold of a technological measure that controls access to a copyrighted work.[49]

Encrypted works protected by CSS or AACS are automatically decrypted whenever a person who possesses a video disc places it in an authorized player. Thus, anyone in possession of the disc is granted access to the underlying work. In utilizing CSS or AACS, copyright owners are not preventing all access to a work but simply narrowing the scope of that access to authorized players.[50] Manufacturers that produce DVD, Blu-ray, and HD DVD players are given licensed keys that decrypt the DRM and allow access to the copyrighted work.[51] The existence of and data about these keys is hidden from consumers and the process of decryption is unseen by the user of the player.[52]

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[45] *See* Register Recommendation 2010, *supra* note 7 at 57.
[46] *See, e.g.*, Realnetworks, Inc. v. DVD Copy Control Ass'n, 641 F. Supp.2d 913, 919 (N.D. Cal. 2009).
[47] Register Recommendation 2010, *supra* note 7, at 44.
[48] *What is AACS?*, ADVANCED ACCESS CONTENT SYSTEM, http://www.aacsla.com/home (last visited Nov. 30, 2011).
[49] Register Recommendation 2010, *supra* note 7, at 57.
[50] *Id.* at 45.
[51] *Id.*
[52] *Id.* at 46.

The Register of Copyrights recognized as early as 2000 that DRM may interfere with lawful uses of a copyrighted work in a manner not contemplated by Congress.[53] The Librarian declined to grant an exemption for a class involving motion pictures protected by DRM in that first proceeding, in part based on an underdeveloped factual record.[54] Since 2000, however, the factual record has been significantly developed. In 2010, the Register recognized that proponents of classes involving motion pictures on fixed media such as DVDs have demonstrated that noninfringing uses are being affected by the prohibition and that alternative formats are unavailable.[55]

Proposed Classes 3 and 4 involve copyrighted works where access is controlled by DRM in the form of either CSS or AACS. As in previous proceedings where exemptions were granted, both proposed classes involve instances where the individual seeking to circumvent the access control has lawful right to access the copyrighted works. Each class contemplates circumvention by deaf, hard of hearing, blind, or visually impaired users seeking to meaningfully perceive the works or by technologists seeking to research and develop technologies to improve the accessibility of the works. In each instance, lawful access to the copyrighted work is prevented by DRM.

IV. The Noninfringing Activities

Each of the proposed classes limits the requested exemption to circumvention accomplished solely for the noninfringing purpose of increasing accessibility. We enumerate below three specific examples of noninfringing uses implicated by the proposed classes of works that are prevented by access control measures: 1) overlaying a visible transcription of the audible portion of an audiovisual work on the visible portion of the work or an audible description of the visible portion of the work on the audible portion; 2) extracting the captioning or video description data from an audiovisual work for the purpose of making corrections to the content of the caption or video description file; and

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[53] See Recommendation of the Register of Copyrights: Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, United States Copyright Office, Docket No. RM 99–7D, 65 Fed. Reg. 64,568 (Nov. 17, 2006), *available at* http://www.copyright.gov/fedreg/2000/65fr64555.pdf.

[54] *Id*.

[55] Register Recommendation 2010, *supra* note 7, at 47-48.

3) extracting the captioning or video description data for the purpose of improving the rendering of that data in its audible or visual form. Each of the enumerated uses meets the Copyright Office's requirement that an access-protected copy of the work is needed for the noninfringing activity.[56] Other formats of the work are either insufficient to facilitate the use, or are unavailable.[57]

A. Overlaying User-Generated Captions and Video Descriptions on IP- or Fixed Media-Delivered Video

Access control measures prevent lawful users such as technologists and consumers from engaging in the noninfringing use of overlaying captions and video description onto video that does not include captions or video description. Video programming delivered without any captions or video description is pervasive, while congressional efforts to require captioning and video description have been met with strong industry opposition.[58] Yet, accessibility technologists and researchers are poised to fill in missing captions and video descriptions with technologies that harness the power of the Internet to coordinate legions of volunteers to transcribe captions and video descriptions for videos distributed over IP and on fixed media.[59]

Unfortunately, the chilling effects of the DMCA prevent accessibility technologists, academic researchers, and others from taking the necessary step of circumventing access controls to overlay user-generated captions and video descriptions onto programming encumbered with DRM. For example, to synchronize a user-generated caption or video description file with a video being lawfully viewed over a subscription service such as Netflix, it may be necessary to access the location of the playhead of the video—an indicator of what moment of the video the user is currently watching—to display the captions or play back the video description in time with the video.[60] Obtaining the location of the

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[56] NOI, *supra* note 1, at 60,403.
[57] *See* discussion *supra* Parts VI.A.2-3.
[58] *See generally* MPAA Comments, *supra* note 14; Microsoft Comments, *supra* note 23; NAB Comments, *supra* note 14; NCTA Comments, *supra* note 14.
[59] *E.g.*, *Volunteer*, UNIVERSAL SUBTITLES, http://blog.universalsubtitles.org/volunteer/ (last visited Dec. 1, 2011).
[60] In some circumstances, accessing the playhead may not be enough; it may be necessary to load the video in a third-party player because of site or browser-

playhead to overlay captions onto IP-delivered programming does not conceivably implicate any of the copyright holder's exclusive rights in the video under 17 U.S.C. § 106. DRM, however, may prevent access to the playhead, and researchers cannot circumvent the DRM to access the playhead without potentially violating the anti-circumvention measures.

Thus, the anti-circumvention measures prevent necessary access to IP- and fixed-media-delivered video and hinder socially beneficial research into technologies to promote access for the disabled to video programming. Furthermore, as the popularity of IP-delivered services such as Netflix, Hulu, and Amazon continues to increase, the anti-circumvention measures will in increasing measure serve to deprive the community of consumers who are deaf, hard of hearing, blind, or visually impaired from being able to fully perceive copyrighted works they have a legal right to access. Accordingly, granting an exemption will permit technologists and researchers to develop technologies that help all consumers access videos on equal terms.

B. Extracting Captioning and Video Description Data to Correct Performance Problems.

Just as the anti-circumvention measures hinder the overlay of captions and video descriptions to videos where none exist, those same measures also hinder the correction of performance problems in existing captions and video descriptions. Such performance problems are pervasive. For example, the Congressionally-created Video Programming Accessibility Advisory Committee ("VPAAC"), comprised of industry and consumer representatives, found that performance objectives for captions were necessary to achieve accessibility, because the captions provided are often inadequate.[61] Prior to the VPAAC

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specific restrictions that prevent simply overlaying captions on the original page. Email from Dr. Christian Vogler to Blake Reid, (Nov. 29, 2011, 9:01p.m. EST) (on file with author).

[61] *See* VIDEO PROGRAMMING ACCESSSIBILITY ADVISORY COMMITTEE, FEDERAL COMMUNICATIONS COMMISSION, First Report of the Video Programming Accessibility Advisory Committee on the Twenty-First Century Communications and Video Accessibility Act of 2010: Closed Captioning of Video Programming Delivered Using Internet Protocol, at 13-14 (July 12, 2011), *available at* http://transition.fcc.gov/cgb/dro/VPAAC/First_VPAAC_Report_to_the_FCC_7-11-11_FINAL.pdf [hereinafter VPAAC Report].

Report, a 2010 study by the FCC noted that over forty percent of captioning complaints reported to the agency were regarding performance problems with captioning.[62] The VPAAC and others have noted that captions are often incomplete, inaccurate, or difficult for users who are deaf or hard of hearing to see.[63]

Entertainment programming is replete with captioning performance issues that could potentially be addressed by accessibility technologists if an exemption is granted. For example, some subtitled motion pictures on DVDs are uncaptioned, which is problematic for viewers who rely on captions when portions of such pictures cease subtitles when dialogue shifts into English. In the motion picture "Politiki Kouzina," the Greek dialogue is subtitled in English throughout the film. During a critical scene however, the dialogue transitions to English and the subtitles disappear, leaving deaf and hard of hearing viewers left to guess as to what has transpired.[64] And even when captions are consistently presented, they are often riddled with errors that make comprehending what is being said difficult.[65]

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[62] See REPORT ON DIGITAL CLOSED CAPTIONING INFORMAL COMPLAINTS: REVIEW AND ANALYSIS, Presented to, The Digital Closed Captioning and Video Description Technical Working Group, Government and Media Affairs Bureau, Federal Communications Commission, at 6 (Oct. 27, 2010), *available at* http://transition.fcc.gov/cgb/dro/ccreport.pdf.

[63] *See generally* VPAAC Report, *supra* note 61; National Center for Accessible Media: Caption Accuracy Metrics Project, Caption Viewer Survey: Error Ranking of Real-time Captions in Live Television News Programs (Dec. 2010), *available at* http://ncam.wgbh.org/invent_build/analog/caption-accuracy-metrics [hereinafter NCAM Report].

[64] Interview by Blake Reid with Dr. Christian Vogler, Dir., Gallaudet TAP, via Skype Chat (Nov. 16, 2011). Subtitles are a particularly pervasive source of accessibility problems. For example, standard subtitles often omit descriptions of background noises or fail to note who is speaking the words on the screen, a particularly important piece of information when the speaker is off-screen or when the speaker's identity is otherwise unclear. Email from Dr. Christian Vogler to Blake Reid, (Nov. 29, 2011, 9:01p.m. EST) (on file with author). These are just several of the many examples of caption performance issues in motion pictures and entertainment programming. *See generally* CAPTIONFAIL.COM, http://www.captionfail.com/ (last visited Dec. 1, 2011).

[65] See Email from Dr. Christian Vogler, Dir., Gallaudet TAP, to Blake Reid, Institute for Public Representation, (Nov. 29, 2011, 9:01p.m. EST) (on file with

News programming is also plagued by captioning performance problems. Such errors often originate on television. An increasing percentage of viewers get their news online,[66] however, and when that programming migrates from television, any caption errors often migrate with it. Errors in television news captioning are so common that at least one Internet site is dedicated exclusively to cataloguing captioning failures.[67] Several examples include:

1) Two gubernatorial candidates in Illinois who were reported to be "rubbing against" one another instead of "running against" one another;[68]
2) "[T]ourists", instead of "terrorists" being linked to Al Qaeda;[69]
3) A report on expected turnout for an election that noted that the elderly were the most elderly voters likely to turn out.[70]

While humorous when taken out of context, these types of errors can introduce confusion or even completely prevent deaf or hard of hearing viewers from being able to understand what words are being spoken by news anchors and others on screen during important news stories.[71]

The VPAAC acknowledged the seriousness of these errors, specifically noting the importance of completeness, placement, accuracy, and timing of captions to the user experience.[72] But copyright owners and video distributors objected to any performance objectives, suggesting to the FCC that providing complete, properly-placed, accurate, and properly-timed captions would be too economically burdensome or technically infeasible.[73] Again, accessibility

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[66] See discussion *infra* Part VI.A.2.

[67] *See generally* CAPTIONFAIL.COM, http://www.captionfail.com/ (last visited Dec. 1, 2011).

[68] *See* CAPTIONFAIL.COM, http://www.captionfail.com/wp-content/uploads/2010/02/37.gif (last visited Nov. 30, 2011).

[69] *See* CAPTIONFAIL.COM, http://www.captionfail.com/wp-content/uploads/2010/02/2.gif (last visited Nov. 30, 2011).

[70] *See* CAPTIONFAIL.COM, http://www.captionfail.com/wp-content/uploads/2010/04/16.gif (last visited Nov. 30, 2011).

[71] *See generally* NCAM Report, *supra* note 63.

[72] See VPAAC Report, *supra* note 61, at 13-14.

[73] *See, e.g.*, Comments of the Consumer Electronics Association, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154 (Oct. 18, 2011), *available at*

technologists and researchers are poised to resolve problems that the industry can or will not by implementing Internet technologies that coordinate volunteers to correct problems with captions. But the DMCA's anti-circumvention measures prevent the research and development of technologies that extract existing captions from DRM-encumbered video for the purpose of improving grammar, spelling, punctuation, timing, positioning, and other errors. Therefore, granting the requested exemptions would enable technologists and researchers to develop technologies that could allow viewers who are deaf or hard of hearing to fully perceive digitally distributed videos.

C. Extracting a Captioning or Video Description File for the Purpose of Improving or Enabling Rendering

Finally, the anti-circumvention measures prevent accessibility technologists and consumers from engaging in the noninfringing use of extracting a caption or video description file for the purpose of improving or enabling its visual or audible rendering in a media player. Even when a motion picture or other audiovisual work is captioned, the default character size, color, and opacity of the captions may hamper accessibility.[74] And video description files, where they exist, may be played back at a volume that is inappropriate relative to the original audio track of a video, or conflict with the original audio track.[75] Finally, technical shortcomings of consumer video playback equipment and software may preclude the display of captions or play back of video descriptions altogether.[76]

Again, technologists and researchers are poised to resolve these rendering problems. For example, alternative media players such as Xine include, or can be modified to include, functionality that allows deaf and hard of hearing users to

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http://fjallfoss.fcc.gov/ecfs/document/view?id=7021715095, MPAA Comments, *supra* note 14, at 12-13; NCTA Comments, *supra* note 14, at 15-16.

[74] VPAAC Report, *supra* note 61at 13-16.

[75] Reply Comments of the American Council of the Blind, Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act, FCC Docket No. 11-43, at 9-10 (May 27, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021672953 [hereinafter ACB Comments].

[76] Some DVD players sold in the U.S. do not support CEA-608 closed captions. Email from Dr. Christian Vogler to Blake Reid (Nov. 29, 2011, 9:01p.m. EST) (on file with author).

control the color, font size, or positioning of captions on screen in ways not accommodated by existing media players.[77] Moreover, these alternative players may be used to overcome technical problems that prevent users from rendering captions altogether on mainstream DVD playback software such as Windows Media Player.[78] Yet, such software cannot be developed and utilized without installing additional software to circumvent the encryption on DVDs—in potential violation of the anti-circumvention measures.[79]

The anti-circumvention measures similarly hamper efforts to improve the rendering of video description on copyrighted works. Video description sometimes conflicts with dialogue or other important audio.[80] Video description, like captioning, may also be out of sync with the action it is describing.[81] Technologists could improve the rendering of the video description of a video by giving users control over the volume of the description relative to that of the primary audio feed. And in instances where the description is out of sync, it could be manually resynchronized with the video track. Unfortunately, DRM may restrict access to the video description file and the development of alternative software with robust user controls, even where users or technologists can legally access the video.

Finally, captions on fixed media-distributed video sometimes cannot be rendered on modern high-definition television sets because the High-Definition Multimedia Interface ("HDMI") cable used to connect the DVD player to the television does not pass through captioning information.[82] Technologists could

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[77] XINE: A FREE VIDEO PLAYER, http://www.xine-project.org/home, (last visited Dec. 1, 2011).

[78] Windows Media Player on Windows 7 x64 frequently stutters when DVD subtitles are turned on, even using a properly configured, top-of-the-line computer. Email from Dr. Christian Vogler to Blake Reid (Nov. 29, 2011, 9:01p.m. EST) (on file with author).

[79] *E.g.*, *DVD Playback with Xine: How do I Playback DVDs with Xine?*, http://www.xine-project.org/faq#id673477; *Daily Xine RPMS (Linux DVD Player*, CETUC - INSTRUMENTATION LABORATORY, http://cambuca.ldhs.cetuc.puc-rio.br/xine/ (last visited Dec. 1, 2011).

[80] ACB Comments, *supra* note 75, at 9-10.

[81] *Id.* at 10.

[82] Proposed Rule, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, 76 Fed. Reg. 59,978 (proposed Sept. 19, 2011)

develop software that would extract the caption file from the DVD and convert the file to rendered subtitles for playback, thereby enabling deaf and hard of hearing consumers to access the video as intended. Again, the anti-circumvention measures chill the research and development of such software by attaching legal liability to the circumvention necessary to access the caption files.

V. Fair Use Analysis

Each of the uses implicated by our requested exemptions is a noninfringing use of a copyrighted work. Making a work accessible to consumers with disabilities who have lawfully obtained access to that work is a noninfringing use. In 2010, the Librarian noted that there was no doubt that making an ebook accessible to consumers who are blind is a noninfringing use.[83] Similarly, making videos accessible to consumers who are deaf, hard of hearing, blind, or visually impaired through the addition or improvement of captions or video descriptions is a noninfringing use. Even assuming that doing so would constitute a *prima facie* instance of infringement, it is nevertheless a noninfringing fair use. The addition of captions or video description to promote accessibility is an exemplary example of the type of use envisioned in the preamble to section 107. That accessibility falls well within the scope of fair use is evident when applying the factors outlined in 17 U.S.C. § 107: 1) the purpose and character of the use; 2) the nature of the copyrighted work; 3) the amount and substantiality of the use; 4) the market effect of the use.

A. The Purpose and Character of the Use

The purpose of each use in question is for research, scholarship, and increasing the accessibility of existing copyrighted works for people with disabilities, thus weighing the first factor in favor of fair use. Moreover, that a use

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(to be codified at 47 C.F.R. pt. 15, 79). Essentially, closed captions are encoded in the analog portion of the video signal and the DVD or Blu-ray player does not render the captions directly on the video. Email from Dr. Christian Vogler to Blake Reid (Nov. 29, 2011, 9:01p.m. EST) (on file with author).

[83] 2010 Final Rule, *supra* note 8, at 43,837. Whether making an ebook accessible to people who are blind is a fair use was not in question during the 2010 rulemaking. The only issue was whether DMCA access-control measures diminished the availability of copyrighted works to the blind, and therefore necessitated an exemption. *Id.*

is for non-profit or educational purposes will tend to render it fair.[84] For example, Gallaudet University's Technology Access Program ("TAP") and the Participatory Culture Foundation do not seek to distribute captions for profit, but rather to facilitate their provision as a public service to increase accessibility of original copyrighted works. Research and scholarship into making copyrighted works more accessible to the disabled falls well within the types of uses envisioned in the preamble to Section 107.[85] And that the requested exemption is sought by non-profit and educational institutions is an additional indication that the first factor favors a finding of fair use.[86]

Furthermore, the captioning or video description of the audible or visible portion of an audiovisual work is essentially a quotation of the work—a use long recognized as being at the core of fair use.[87] Thus, creating or improving the captioning or video description of a work does not create new copies of the work, but merely allows all audiences who have lawfully obtained access to the work to fully perceive it on equal terms. Accordingly, the purpose and character weigh in favor of finding the uses to be fair.

B. The Nature of the Works

A general analysis under the second factor is difficult to perform as the proposed classes include a range of works, from the purely factual—such as news broadcasts and documentaries, to the purely creative—such as sitcoms and motion pictures with fictional storylines.[88] Thus, although many of the works in the proposed classes will be highly copyrightable, many others will not.

Factual works such as news broadcasts, however, are increasingly inaccessible to people who are deaf, hard of hearing, blind, or visually impaired.

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[84] *See* 2 Melville B. Nimmer and David Nimmer, Nimmer on Copyright § 13.05 (Matthew Bender, Rev. Ed.).
[85] *See* Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 578. A fair use analysis can be guided by the examples given in the preamble of Section 107.
[86] *See* Perfect 10 v. Amazon.com, 508 F.3d at 1169 (finding that because the creation of browser cache copies was for non-commercial purposes weighed in favor of a finding of fair use).
[87] Register Recommendation 2010, *supra* note 7, at 50 (citing Eldred v. Ashcroft, 537 U.S. 186, 220 (2003)).
[88] "In general, fair use is more likely to be found in factual works than in fictional works." Stewart v. Abend, 495 U.S. 207, 237 (1990).

When news programming originates online without being shown on television, it does not trigger the CVAA's captioning requirements.[89] Thus, as online news becomes more prevalent, a growing portion of news programming becomes inaccessible to consumers who are deaf or hard of hearing.[90]Accordingly, the second factor is at worst neutral, and at best weighs in favor of fair use.

C. The Amount and Substantiality of the Use

The third factor weighs in favor of finding the uses fair because only the use of the minimum amount of copyrighted works necessary to make them accessible is at issue. This factor involves a qualitative as well as a quantitative analysis.[91] Thus, the resolution of the third factor depends on "whether the amount taken is reasonable in light of the purpose of the use and the likelihood of market substitution."[92] If the use is qualitatively substantial enough to reduce the demand for the copyrighted works or its authorized derivative, then this factor will weigh against fair use.[93]

Adding or improving the captions on a video, however, uses only the audible portion of the video or the existing closed captions included with the video. Adding or improving video descriptions conversely uses only the visible portion of the video or the existing video description included with the video. Thus, each process makes use of the video only to the minimum extent necessary.

Moreover, that adding or improving captions or video descriptions may utilize all of either the audible or video portion of a video is not determinative.[94] By using only the video or audible portion of a video, adding or improving

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[89] The CVAA requires the captioning of only IP-delivered video that is first exhibited on television with captions. *See* CVAA, *supra* note 12, at § 202(c)(2)(A).
[90] *See Americans Spending More Time Following the News*, PEW RESEARCH CENTER FOR THE PEOPLE & THE PRESS (Sept. 12, 2010), http://www.people-press.org/2010/09/12/americans-spending-more-time-following-the-news/.
[91] *See* 2 Melville B. Nimmer and David Nimmer, Nimmer on Copyright § 13.05 (Matthew Bender, Rev. Ed.).
[92] *See* Peter Letterese & Assocs. v. World Inst. of Scientology Enters., 533 F.3d 1287, 1314 n.30 (11th Cir. 2008).
[93] *Id.* at 1315.
[94] *See* Bill Graham Archives, LLC. v. Dorling Kindersley Ltd., 386 F. Supp. 2d 324, 330-331 (S.D.N.Y. 2005) (finding that even in cases of reproductions of entire images this factor can favor fair use).

captions or video descriptions does not capture the heart of the work in a manner that reduces demand for the copyrighted work.[95] The amount taken is reasonable as neither captioning nor video description takes any more of the work than the bare minimum necessary to accomplish the purpose of improving accessibility. Accordingly, the third factor weighs in favor of fair use.

D. The Market Effect of the Use

The fourth factor—"undoubtedly the single most important element of fair use"—rests on the effect on the market of the allegedly infringing use.[96] Even where the market for the copyrighted works is affected, courts engage in a balancing between the benefit the public would derive from the use, if permitted, and the personal gain the owner would receive if the use is impermissible.[97] The less the use causes detriment to the expectations of the copyright owner, the less public benefit needs to be shown to justify the use.[98]

Adding or improving captions or video description on video programming will enhance, not impair, the market value of the programming—a strong indication that such practices are a fair use. Improving the accessibility of video programming—while maintaining the requirement that consumers obtain lawful access to the programming in the first instance—can only serve to improve the marketability of the programming to the millions of potential customers who depend on captions or video description to perceive programming.[99]

In addition to enhancing the value of a copyrighted work, the addition or improvement of captioning or video description cannot harm the market for programming because copyright owners have repeatedly indicated that they have no interest in serving the market of consumers that rely on captions or video descriptions to fully perceive programming. Copyright owners have expressly demonstrated this distinct lack of interest in the FCC's ongoing

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[95] *See* Harper & Row, Publishers, Inc. v. Nation Enters., 471 U.S. 539, 566 (1985).
[96] *Id.*
[97] *See* MCA, Inc. v. Wilson, 677 F.2d 180, 183 (2d Cir. 1981).
[98] *Id.*
[99] *See* Comments of Public Knowledge, Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, FCC Docket No. MB 11-154, at 5 (Nov. 2, 2011), *available at* http://fjallfoss.fcc.gov/ecfs/document/view?id=7021744406.

rulemaking implementing captioning requirements for video programming delivered via IP.

In that proceeding, representatives of prominent owners of the copyrights in video programming sought to dramatically narrow the scope of programming they would be required to caption.[100] For example, the National Cable and Telecommunications Association and the National Association of Broadcasters stated that requiring the captioning of certain programs online would be so burdensome and costly to industry that such a requirement would disincentivize voluntary captioning altogether.[101] And the Motion Picture Association of America commented that addressing caption quality issues would be prohibitively burdensome to industry.[102] Because many copyright owners and distributors of mainstream copyrighted programming have indicated that they are unable or unwilling to facilitate accessibility by providing high-quality captioning or video descriptions for all video programming, the addition or improvement of captions and video descriptions by third-party technologists, researchers, and others merely addresses an unfilled market niche and does not harm any copyright owner's legitimate market interest. [103]

Moreover, it is unclear whether U.S. copyright law can serve to support a market for a video with captions above and beyond the market for the same video without captions. In both the 1996 Telecommunications Act and the CVAA, Congress mandated that significant amounts of programming could not be distributed via broadcast television, cable, satellite, or Internet protocol without captions or video descriptions—under penalty of significant fines from the FCC.[104] Thus, it is arguably impermissible under the 1996 Telecommunications Act and the CVAA for a copyright owner to separately market certain videos with and without captions.

Congress was plainly aware of the interests of copyright holders when it passed the 1996 Telecommunications Act and the CVAA. To the extent that these

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[100] *See, e.g.*, MPAA Comments, *supra* note 14, at 7-8; NAB Comments, *supra* note 14, at 27-28.
[101] *See* NCTA Comments, *supra* note 14, at 18; NAB comments, *supra* note 14, at 24-25.
[102] *See* MPAA Comments, *supra* note 14, at 13.
[103] See Twin Peaks Prods., Inc. v. Publ'ns Int'l, Ltd., 996 F.2d 1366, 1377 (2d. Cir. 1993).
[104] *See* 47 C.F.R. § 79.1(g)(8) (1997).

or other accessibility statues implicate copyright concerns, the later passage of the accessibility statutes trump any interest the copyright statute might have initially granted copyright holders in capitalizing on markets for accessibility.[105]

Given that no copyright owner's market interest is likely to be harmed by the addition or improvements of captions or video descriptions, that such uses are likely to increase the market value of underlying videos, that accessibility statutes may have eliminated the copyright interest in such uses, and that significant public benefit will result from the uses, the fourth factor almost certainly weighs in favor of a finding that the uses are fair.

VI. Statutory Factors to Consider

Section 1201(a)(C) requires the Librarian to consider 1) the availability for use of copyrighted works; 2) the availability for use of works for non-profit archival, preservation, and educational purposes; 3) the impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship or research; 4) the effect of circumvention of technological measures on the market for or value of copyrighted works; and 5) other factors the Librarian considers important. The balance of these factors weighs strongly in favor of a granting of the proposed exemptions.

A. The Availability for Use of Copyrighted Works

The proposed exemptions should be granted because they will likely have a positive effect on the availability of copyrighted works. "Under the first factor, the Register has interpreted the relevant inquiry to include (1) whether the availability of the work in protected format enhances and/or inhibits public use of particular works, (2) whether the work protected is also available in other formats (and whether those formats are protected by access controls), and (3) if alternative formats are available, whether such formats are sufficient to accommodate noninfringing uses."[106]

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[105] *See, e.g.*, Sorenson, v. Secretary of the Treasury, 475 U.S. 851, 863-64 (1986) (holding that Congress can be presumed to be aware of previous statues it is modifying when it enacts a new statute, and that the last enacted statute trumps any intent of the prior statute).

[106] Register Recommendation 2010, *supra* note 7, at 56.

1. Does the protection of the works enhance and/or inhibit the availability of the work for use?

The protection of the works at issue inhibits the availability of the works for effective use by the millions of Americans who are deaf, hard of hearing, blind, or visually impaired. These consumers are currently unable to meaningfully access a large percentage of the copyrighted works at issue. Notwithstanding the overall decline of DVD sales, DVDs remain dominant in the fixed media marketplace. Thus, there is no basis to suggest that an exemption will deter distribution of works in this format.[107] Similarly, although the market for IP-delivered video is still maturing, it is growing rapidly and any suggestion that an exemption to improve accessibility will deter such growth is likely unfounded. To the contrary, an accessibility exemption is likely to *increase* interest in IP-delivered video among consumers who are deaf, hard of hearing, blind, and visually impaired. Because the technological prevention measures at issue currently serve to impair sales of copyrighted works, allowing the circumvention will not deter distribution of those works in the aforementioned formats.

2. Is the protected work available in other formats?

Although some of the protected works at issue are available in other formats, many are not. In the case of fixed media such as DVDs and Blu-ray discs, the Register acknowledged in 2010 that alternative formats such as videocassettes are no longer viable.[108] And an increasing amount of video content is available only on the Internet, where the CVAA's captioning and video description mandates may not apply to large portions of video.[109]

For example, certain news programming originates online and is not available in any other format. Nearly two-thirds of Americans now report that they get their news online, a higher percentage than newspaper or radio.[110] But an increasing percentage of news programming is only available online. For

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[107] *Id.* at 57

[108] Register Recommendation 2010, *supra* note 7, at 31.

[109] The CVAA requires the captioning of only IP-delivered video that is first exhibited on television with captions. *See* CVAA, *supra* note 12, at § 202(c)(2)(A).

[110] *See* Doug Gross, *Survey: More Americans get news from Internet than newspapers or radio*, CNN.COM (Mar. 1, 2010), http://articles.cnn.com/2010-03-01/tech/social.network.news_1_social-networking-sites-social-media-social-experience?_s=PM:TECH.

example, several major networks' Sunday political shows now include an online-only video component.[111] These news programs provide informative interviews and information on vital issues of public importance that is unavailable on television or in any other format.[112] However, these discussions of vital issues may be inaccessible to viewers who are deaf, hard of hearing, blind, or visually impaired. In this context, alternative formats of the protected works at issue are simply not available.

In a more recent development, popular entertainment programs are now originating and are only available online. Netflix recently announced that two popular shows will be distributed exclusively through its online streaming subscription service. The cult comedy favorite "Arrested Development," which originally aired on broadcast television, will run a new season exclusively via Netflix in 2013.[113] Similarly, a new political drama starring Kevin Spacey entitled "House of Cards" is slated to run exclusively on Netflix in late 2012.[114]

These developments could potentially turn Netflix into a competitor with networks such as HBO and Showtime, leading to an increasing amount of online-only premium television programming. While this is a positive development for the availability of high-quality IP-delivered programming, these online-only programs will not exist in any other format. Furthermore, because these programs originate online, the CVAA's captioning and video description requirements will not attach. Without the CVAA's captioning requirements, Netflix may choose not to caption or include video descriptions for these

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[111] *See, e.g.*, NBC PRESS PASS, http://presspass.msnbc.msn.com/ (last visited Nov. 30, 2011); ABC GREEN ROOM, http://abcnews.go.com/ThisWeek/video/green-room-perry-campaign-life-support-14892560?tab=9482930&section=1206874&playlist=8257591 (last visited Nov. 30, 2011); FOX WALLACE UNPLUGGED http://www.foxnews.com/on-air/fox-news-sunday/blog/category/wallace-unplugged/ (last visited Nov. 30, 2011).

[112] One recent study suggested that the Sunday programs are the most effective in helping the public to understand current events. See *Public Mind Poll*, Fairleigh Dickinson University (Nov. 21, 2011), http://publicmind.fdu.edu/2011/knowless/.

[113] *See* Brian Stelter, *Netflix to Back 'Arrested Development'*, N.Y. TIMES, Nov. 20, 2011, http://www.nytimes.com/2011/11/21/arts/television/netflix-to-back-arrested-development.html.

[114] *See* Dean Takahashi, *Netflix Confirms Deal to Launch Kevin Spacey Series Via Video Streaming*, REUTERS , Mar. 21, 2011, http://www.reuters.com/article/2011/03/21/idUS176332428720110321

shows—or may do so with insufficient quality.[115] And as more news and entertainment programming originates online, alternative formats of that programming will simply cease to exist.

3. If alternative formats are available, are they sufficient to accommodate the noninfringing use?

Any alternative formats of the works at issue are insufficient to accommodate the proposed noninfringing accessibility uses. The market forces driving the encumbrance of digitally distributed videos with DRM means that such videos are highly unlikely to be available without DRM. And because our proposed uses depend on cutting-edge Internet-based technology to facilitate improvements to accessibility, old-fashioned alternatives such as videocassettes, which lack commonly available means of interoperating with digital devices, cannot accommodate such uses. Moreover, where degradation in quality results from the use of an alternative format, that degradation may impede the purpose of the use itself.[116] Thus, the fair use purpose of accessibility for the deaf and hard of hearing is impeded by the insufficiency of alterative formats.

In previous rulemakings, copyright owners have erroneously suggested that obtaining permission from a copyright owner could be an adequate substitute for circumvention. The Register, however, found such suggestions to be unworkable.[117] In the fourth rulemaking, the Register noted that there is no evidence that an efficient mechanism for seeking permission to access particular video clips on DVDs existed or was likely to exist in the following three years.[118] Here, such impossible-to-obtain permission would be necessary not just for individual video clips, but for all videos on a distribution-platform-by-distribution-platform basis—including the entire library of DVDs and Blu-ray discs. Of course, we are fully amenable to working with online distributors of video to pursue non-circumvention solutions to improving accessibility. Content owners, however, have noted that distributors are often not in a position to grant such permission since the distributors often do not own the copyright in the

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[115] Lance Whitney, *Netflix sued by deaf group over lack of subtitles*, CNET (Jun. 20, 2011), http://news.cnet.com/8301-13578_3-20072619-38/netflix-sued-by-deaf-group-over-lack-of-subtitles/.
[116] *See* Register Recommendation 2010, *supra* note 7, at 60.
[117] *Id. at 68.*
[118] *Id.*

videos they distribute.[119] Accordingly, alternative formats, including permission-based solutions, cannot serve as a reasonable substitute for circumvention in this instance.

B. The Availability for Use of Works for Non-Profit, Archival, Preservation, and Educational Purposes

There is no reason to believe that the requested exemptions would curtail the availability of works for non-profit or educational purposes. Instead, it is likely that an exemption would *increase* the availability of copyrighted works for educational uses. Video programming is an important educational tool, and captioning and video description are crucial to ensure that students who are deaf, hard of hearing, blind, or visually impaired can access such works for educational purposes. And the core purpose of the requested exemptions is to promote research into improving captioning and video description by educational and non-profit institutions. Thus, granting the requested exemptions is very likely to have a positive effect on the availability of works for non-profit and educational purposes.

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

The prohibition on circumvention of the technological measures for the copyrighted works at issue has a decidedly negative impact on teaching, scholarship, research, and criticism. Congress expressed concern that the anti-circumvention measures would inhibit these socially productive noninfringing uses.[120] In particular, research, teaching, and scholarship designed to increase accessibility for those who are disabled are at the core of socially productive uses that Congress intended this rulemaking to recognize.

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[119] *See e.g.*, Starz Comments, *supra* note 16, at 3-4.

[120] *See* Recommendation of the Register of Copyrights: Rulemaking on Exemptions from Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, United States Copyright Office RM 2005-11, at 23 (Nov. 17, 2006), *available at* http://www.copyright.gov/1201/docs/1201_recommendation.pdf [hereinafter Register Recommendation 2006].

For example, Gallaudet University's Technology Access Program ("TAP") is one of the nation's leading research centers in the field of accessibility and communication technology. Its researchers' efforts to develop and improve captioning technologies on DRM-encumbered video are hindered, however, by the potential for liability under anti-circumvention measures. Teaching is integral to TAP's mission, and provides educational opportunities to students in the classroom and through mentored research projects. Again, these teaching efforts are hindered by the chilling effects of the anti-circumvention measures.

More specifically, TAP is currently engaging its students in research to improve the accessibility of web-delivered video in telecollaboration software. Telecollaboration tools such as webinars and webcasts are increasingly important in both business and educational settings. These tools are often inaccessible to the deaf and hard of hearing community as they involve uncaptioned or poorly captioned IP-delivered video. TAP would like to engage its students in research to improve the accessibility of these tools.

One specific area of research TAP is interested in undertaking involves user control over captions where a presenter is using telecollaboration software and showing a video to the viewers of that presentation, or where a video feed of the presenter himself needs to be captioned or have captions corrected. Because the video may be encumbered with DRM, however, TAP's accessibility research may be chilled by the anti-circumvention measures.

More broadly, by hindering the ability of people who are deaf, hard of hearing, blind, or visually impaired to fully experience IP- and fixed media-delivered video, the anticircumvention measures hinder the ability for those people to participate in the criticism of copyrighted works that is central to our shared cultural identity. Motion pictures and other audiovisual works have an enormous influence on our social, political, and cultural identity.[121] The anti-circumvention measures serve to prevent meaningful access to countless significant works by deaf, hard of hearing, blind, and visually impaired consumers. If those consumers cannot access these works, they cannot meaningfully partake in criticism of these copyrighted works. Accordingly, granting the requested exemptions would widely expand participation in the social, cultural, and political dialogue at the core of the activities Congress intended to protect with this rulemaking.

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[121] *See* Register Recommendation 2010, *supra* note 7, at 71.

Furthermore, as more news programming migrates to the Internet, the ability of deaf and hard of hearing consumers to access that reporting is hindered by the lack of captions on a broad range of online news reporting. Thus, not only are deaf and hard of hearing consumers unable to access reporting and criticism itself, they are less able to access the original copyrighted works, making them less able to comment on and criticize those works. Accordingly, the negative impact of the prohibition on teaching, scholarship, research and criticism weighs heavily in favor of granting the requested exemptions.

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

The circumvention of the technological measures at issue will likely have a positive effect on the value of copyrighted works. The addition and improvement of captions and video description of a copyrighted work will increase the value of that work by expanding its potential market. Instead of creating derivative works that will compete with protected works in the marketplace, the proposed activities will provide value-added components for rightsholders' original copyrighted works. The narrow tailoring of the proposed classes insures that the circumvention will be accomplished only for the purpose of improving accessibility, insuring no adverse affect on the market for those works.[122]

Furthermore, industry commenters have argued in other proceedings that the addition of captions and video descriptions represents a significant cost to copyright owners and video distributors.[123] Accordingly, the requested exemption would offer copyright owners the benefit of an expanded market for their works, with accessibility technologists, non-profit organizations, and volunteers helping to shoulder and reduce the costs associated with the expansion. Accordingly, granting the requested exemptions will increase the value of copyrighted works—an indication that the request should be granted.

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[122] *Id.*

[123] *See, e.g.*, NAB Comments, *supra* note 14 at 24-25; NCTA Comments, *supra* note 14 at 18.

E. Other Factors the Librarian May Consider Appropriate

Other factors that are appropriate for the Librarian to consider indicate that the exemption should be granted. In particular, the anti-circumvention measures demonstrably affect socially-beneficial noninfringing uses, a factor weighing in favor of the granting of an exemption.[124] The proposed uses do not implicate matters of mere convenience, where proponents of a class seek to access copyrighted works in formats of their choosing rather than those offered by owners.[125] Rather, the proposed uses are measures of basic equal access to copyrighted works for consumers who are deaf, hard of hearing, blind, or visually impaired and the ability to research and develop technologies to facilitate improvements to accessibility. Moreover, there is a strong public interest and demonstrated Congressional intent to promote accessibility even when it comes at the expense of the rights of copyright holders.[126] Accordingly, the socially beneficial nature of the uses and the significant public interest in accessibility weigh strongly in favor of granting an exemption.

VII. Consideration of Requests to File Further Comments

Finally, we urge the Copyright Office to liberally consider requests for permission to file further comments in this proceeding. Although we understand the Office's concerns about the orderly presentation of evidence and arguments, we note that the technical and legal backdrops underpinning exemption requests generally, and ours in particular, are rapidly evolving. While we have provided extensive support for our requested exemptions, we hope that the Copyright Office will consider favorably requests by submitting parties such as ourselves to

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[124] *See* Register Recommendation 2010, *supra* note 7, at 71.
[125] *See id.* at 214.
[126] *See, e.g.*, H.R. REP. NO. 094-1476, at 73 (1976) (noting the application of the fair use doctrine to the noncommercial creation of Braille and audio recordings of books for use by those with vision disabilities), cited with approval by Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 455 n.40 (1984) ("Making 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."); CONF. REP. NO. 094-1773, at 70 (1976) (noting the applicability of fair use to generating captions for television programs in nonprofit schools for the deaf and hard of hearing).

supplement the record with further comments when warranted by important technological and legal developments.[127]

VIII. Conclusion

Granting exemptions for the proposed classes would allow non-profit and educational institutions to undertake the necessary measures to increase the accessibility of copyrighted works for all Americans. Accordingly, we respectfully request that the Register recommend and the Librarian grant exemptions for Classes 1, 2, 3, and 4, or in the alternative, for Class 5.

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Respectfully submitted,

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[127] For example, the FCC will likely issue a final rule during the course of its proceeding regarding Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010, 76 Fed. Reg. 59,963 (proposed Sept. 19, 2011) (to be codified at 47 C.F.R. pt. 15, 79).

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