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Copyright Protection of Digital Audio Radio Broadcasts: The "Audio Flag"

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Summary

Protecting audio content broadcasted by digital and satellite radios from unauthorized dissemination and reproduction is a priority for producers and owners of those copyrighted works. One technological measure that has been discussed is the Audio Protection Flag (APF or "audio flag"). The audio flag is a special signal that would be imbedded into digital audio radio transmissions, permitting only authorized devices to play back copyrighted audio transmissions or allowing only limited copying and retention of the content. Several bills introduced in the 109th Congress would have granted the Federal Communications Commission (FCC) authority to promulgate regulations to implement the audio flag. The parties most likely affected by any audio flag regime (including music copyright owners, digital radio broadcasters, stereo equipment manufacturers, and consumers) are divided as to the anticipated degree and scope of the impact that a government-mandated copyright protection scheme would have on the "fair use" rights of consumers to engage in private, noncommercial home recording. Critics of the audio flag proposal are concerned about its effect on technological innovation. However, proponents of the audio flag feel that such digital rights management (DRM) technology is needed to thwart piracy or infringement of intellectual property rights in music, sports commentary and coverage, and other types of copyrighted content that is transmitted to the public by emerging high-definition digital radio services (HD Radio) and satellite radio broadcasters.

This report provides a brief explanation of the audio flag and its relationship to digital audio radio broadcasts, and summarizes legislative proposals considered by the 109th Congress, including H.R. 4861 (Audio Broadcast Flag Licensing Act of 2006) and S. 2686 (Digital Content Protection Act of 2006), that would have authorized its adoption. Although not enacted, these two bills represent approaches that may be taken in the 110th Congress to authorize the use of an audio flag for protecting broadcast digital audio content.

Introduction

Although the advent of digital technology has brought about higher quality for audio and video content, creators of such content and policy makers are concerned that, without adequate content protection measures, unlawful digital copying and distribution of copyrighted material may endanger the viability of the motion picture, television, and music industries.[1] As a result, technological measures have been proposed that are aimed at protecting copyrighted media from, among other things, unauthorized reproduction, distribution, and performance. One of these content protection schemes is the Audio Protection Flag (APF or "audio flag"), which would protect the content of digital radio transmissions against unauthorized dissemination and reproduction.

Background

What Is Digital Audio? To understand digital audio, an explanation of how analog and digital technology differ is helpful. Analog technology is characterized by an output system where the signal output is always proportional to the signal input. Because the outputs are analogous, the word "analog" is used. An analog mechanism is one where data is represented by continuously variable physical quantities like sound waves or electricity. Analog audio technologies include traditional radio (AM/FM radio), audio cassettes, and vinyl record albums. These technologies may deliver imprecise signals and background noise. Thus, the duplication of analog audio often erodes in quality over time or through "serial copying" (the making of a copy from copies).

The term "digital" derives from the word "digit," as in a counting device. Digital audio technologies represent audio data in a "binary" fashion (using 1s and 0s). Rather than using a physical quantity, a digital audio signal employs an informational stream of code. Consequently, the code from a digital audio source can be played back or duplicated nearly infinitely and without any degradation of quality. Digital audio technologies include digital radio broadcasts (such as high-definition radio, or "HD Radio"), satellite radio, Internet radio, compact discs, and MP3-format music files.

Digital Content Protection. With the advent of digital technology, content providers have been interested in using content security measures to prevent unauthorized

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[1] *See Internet Streaming of Radio Broadcasts: Balancing the Interests of Sound Recording Copyright Owners with Those of Broadcasters: Hearing Before the House Subcomm. on Courts, the Internet, and Intellectual Property*, 108th Cong., 2d Sess. (2004)(statement of David O. Carson, General Counsel for the U.S. Copyright Office), at 34, *available on January 10, 2007 at* [http://www.copyright.gov/docs/carson071504.pdf] ("In the absence of corrective action, the rollout of digital radio and the technological devices that promise to enable consumers to gain free access at will to any and all music they want will pose an unacceptable risk to the survival of what has been a thriving music industry. . . "); *The Audio and Video Flags: Can Content Protection and Technological Innovation Coexist?: Hearing Before the House Subcommittee on Telecommunications and the Internet,* 109th Cong., 2nd Sess. (2006)(statement of Mitch Bainwol, Chairman and CEO of the Recording Industry Association of America) ("[T]he music industry has faced an immense challenge in online piracy over the past several years. In addition to sharply declining sales figures, composers, artists, musicians, technicians, and a multitude of others engaged in the music industry have seen their jobs disappear.").

distribution and reproduction of copyrighted works. These technology-based measures are generally referred to as "digital rights management," or DRM. As the name suggests, DRM applies only to digital media (which would include analog transmissions converted into digital format). Examples of DRM include Internet video streaming protections, encrypted transmissions, and Content Scrambling Systems (CSS) on DVD media.

In 1998, Congress passed the Digital Millennium Copyright Act (DMCA). The DMCA added a new chapter 12 to the Copyright Act, 17 U.S.C. §§ 1201-1205, entitled "Copyright Protection and Management Systems." Section 1201(a)(1) prohibits any person from circumventing a technological measure that effectively controls access to a copyrighted work. This newly created right of "access" granted to copyright holders makes the act of gaining access to copyrighted material by circumventing DRM security measures, itself, a violation of the Copyright Act. Prohibited conduct includes descrambling a scrambled work, decrypting an encrypted work, and avoiding, bypassing, removing, deactivating, or impairing a technological measure without the authority of the copyright owner.[2] In addition, the DMCA prohibits the selling of products or services that circumvent access-control measures, as well as trafficking in devices that circumvent "technological measures" protecting "a right" of the copyright owner.[3]

In contrast to copyright infringement, which concerns the unauthorized or unexcused use of copyrighted material, the anti-circumvention provisions of the Copyright Act prohibit the design, manufacture, import, offer to the public, or trafficking in technology produced to circumvent copyright encryption programs, regardless of the actual existence or absence of copyright infringement.

The "Audio Flag"

One form of DRM technology that may be used to protect the content of digital audio transmissions from unauthorized distribution and reproduction is the "audio flag." The flag has two primary aspects: a physical component and rules and standards that define how devices communicate with flagged content transmitted from digital audio sources. For instance, a satellite digital audio radio stream of a particular broadcast music program could contain an audio flag (the mechanism) that prohibits any reproduction or further dissemination of the broadcast (the standard). The audio flag, according to its proponents, would operate in a similar manner as the broadcast video flag that has been proposed for digital television transmissions.[4] Functionally, the audio flag system would work by embedding a special signal within transmitted digital audio data, informing the receiving device of certain copyright restrictions on the use of the content by the listener — for example, limiting the number of copies of a recording that the user may make.

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[2] 17 U.S.C. § 1201 (a)(3).

[3] *Id.* §§ 1201(a)(2), (b).

[4] *See* CRS Report RL33797, *Copyright Protection of Digital Television: The Broadcast Video Flag*, by Brian T. Yeh. The broadcast video flag is an embedded signal in digital television broadcasts that prohibits unauthorized redistribution of broadcast programs. *See also,* CRS Report RL31260, *Digital Television: An Overview*, by Lennard G. Kruger.

Those advocating the use of an audio flag for digital radio programming include musicians, songwriters, record labels, and other providers of audio content that could be broadcast to the public through digital transmissions. The Copyright Act bestows several exclusive rights upon the creator of a work (or the individual having a legal interest in the work) that permit the copyright holder to control the use of the protected material. These statutory rights allow a copyright holder to do or to authorize, among other things, reproducing the work, distributing copies or phonorecords of the work, and publicly performing the work.[5] Parties holding a copyright interest in content transmitted through digital radio services are interested in ensuring that such content is protected from unauthorized reproduction and distribution by the broadcast recipient; the audio flag, in their view, is an effective way to achieve this objective and enforce their rights.

Proponents of audio flag technology also suggest that it would help prevent certain digital radio services (like satellite radio) from becoming a music download service through the creation of recording and storage devices that allow for further reproduction and distribution of audio broadcasts.[6] Some copyright holders argue that these broadcasters must either pay additional royalties for the privilege of offering what appears to be a music download service, or comply with an audio flag regime that will effectively prevent broadcasters from allowing the recording in the first place.[7]

Rights That May Be Affected by the Audio Flag Proposal

Critics of the audio flag proposal raise concerns that such a government-mandated measure may stifle technological innovation and restrict the rights of consumers to record broadcast radio — conduct that, according to audio flag opponents, is protected by the Audio Home Recording Act of 1992, as well as "fair use" principles in copyright law.

The Audio Home Recording Act of 1992. The introduction of the Digital Audio Tape (DAT) by Sony and Philips in the mid-1980s prompted passage of the Audio Home Recording Act (AHRA) in 1992.[8] A DAT recorder can record CD-quality sound onto a specialized digital cassette tape. Through the Recording Industry Association of America (RIAA), sound recording copyright holders turned to Congress for legislation in response to this technology, fearing that a consumer's ability to make near-perfect digital copies of music would displace sales of sound recordings in the marketplace.[9]

The AHRA requires manufacturers of certain types of digital audio recording devices to incorporate into each device copyright protection technology — a form of DRM called the Serial Copying Management System (SCMS), which allows the copying of an original digital work, but prevents "serial copying" (making a copy from a copy). In exchange,

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[5] 17 U.S.C. § 106.

[6] For detailed information about satellite radio and music licensing matters, *see* CRS Report RL33538, *Satellite Digital Audio Radio Services and Copyright Law Issues*, by Brian T. Yeh.

[7] *See* RIAA's Executive Comments to the FCC on HD Radio, *available on January 10, 2007, at* [http://www.riaa.com/news/newsletter/061604_2.asp].

[8] P.L. 102-563 (1992), codified at 17 U.S.C. §§ 1001 et seq.

[9] H.REPT. 102-873, at 18-19 (1992).

the AHRA *exempts* consumers from copyright infringement liability for private, noncommercial home recordings of music for personal use. Manufacturers of audio equipment, sellers of digital recording devices, and marketers of blank recordable media are also protected from contributory infringement liability upon payment of a statutory royalty fee — royalties that are distributed to the music industry. Opponents of the audio flag contend that the AHRA created a "right" for consumers to make digital recordings, a practice that might be limited or even effectively revoked by audio flag mandates.[10]

Fair Use. The doctrine of "fair use" in copyright law recognizes the right of the public to make reasonable use of copyrighted material, in certain instances, without the copyright holder's consent. Because the language of the fair use statute is illustrative, determinations of fair use are often difficult to make in advance — it calls for a "case-by-case" analysis by the courts.[11] However, the statute recognizes fair use "for purposes such as criticism, comment, news reporting, teaching, scholarship, or research."[12] A determination of fair use by a court considers four factors: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.[13]

In the context of digital music downloads and transmissions, some alleged copyright infringers have attempted to use the doctrine of fair use to avoid liability for activities such as sampling,[14] "space shifting,"[15] and peer-to-peer (P2P) file sharing.[16] These attempts have not been very successful, as several federal appellate courts have ruled against the applicability of the fair use doctrine for these purposes.[17] No litigation has yet settled the extent to which home recording of an audio broadcast (whether transmitted through digital or analog means) is a legitimate fair use.

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[10] *See, e.g., The Audio and Video Flags: Can Content Protection and Technological Innovation Coexist?: Hearing Before the House Subcommittee on Telecommunications and the Internet,* 109th Cong., 2nd Sess. (2006)(statement of Gary J. Shapiro, for the Consumer Electronics Association and the Home Recording Rights Coalition), at 8-9.

[11] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 577 (1994).

[12] 17 U.S.C. § 107.

[13] 17 U.S.C. §§ 107(1)-(4).

[14] In the digital music context, *sampling* is a term that refers to the supposed ability of a user to make copies of copyrighted materials prior to purchase. *See* A&M Records, Inc. v. Napster, Inc., 114 F.Supp. 896 (N.D. Cal. 2000), *aff'd in relevant part*, 239 F.3d at 1018 (9th Cir. 2001).

[15] *Id.* Space shifting occurs when users access CD sound recordings on their computers and portable audio devices.

[16] P2P file sharing is facilitated by software that establishes network connections between computers to enable the exchange of data over the Internet. For more information on this topic, *see* CRS Report RL31998, *File Sharing Software and Copyright Infringement: Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, by Brian T. Yeh and Robin Jeweler.

[17] *See, e.g.,* A&M Records, Inc. v. Napster, Inc., 114 F.Supp.2d 896 (N.D. Cal. 2000), *aff'd*, 239 F.3d 1004 (9th Cir. 2001); In re: Aimster Copyright Litigation, 334 F.3d 643 (7th Cir. 2003), *cert. denied,* 540 U.S. 1107 (2004).

Critics of the audio flag also suggest that it places technological, financial, and regulatory burdens that may stifle the innovation behind digital audio technologies. They argue that the audio flag may limit the functionality of digital audio transmissions in favor of analog transmissions — thereby negatively affecting the digital audio marketplace.[18]

Audio Flag Legislation Introduced in the 109th Congress

Legislation that expressly delegates authority to the FCC to mandate audio flags for digital radio transmissions would appear to be necessary before the FCC could take such steps, in the wake of a decision by the U.S. Court of Appeals for the District of Columbia Circuit in 2005 that vacated an FCC order requiring digital *televisions* to be manufactured with the capability to prevent unauthorized redistributions of digital *video* content. The court ruled that the FCC lacked the statutory authority to establish such a broadcast video flag system for digital television under the Communications Act of 1934.[19] Two bills were introduced in the 109th Congress that would have delegated such authority; these may represent legislative approaches that could be taken in the 110th Congress.

H.R. 4861, the Audio Broadcast Flag Licensing Act of 2006. This bill would have empowered the FCC to promulgate regulations governing the licensing of "all technologies necessary to make transmission and reception devices" for digital broadcast and satellite radio.[20] The bill directed that any such digital audio regulation shall prohibit unauthorized copying and redistribution of transmitted content through the use of a broadcast flag or similar technology, "in a manner generally consistent with the purposes of other applicable law."

S. 2686, the Digital Content Protection Act of 2006. Title IV, Subtitle C of S. 2686 would have granted the FCC the authority to issue "regulations governing the indiscriminate redistribution of audio content with respect to — digital radio broadcasts, satellite digital radio transmissions, and digital radios."[21] It also directed the FCC to establish an advisory committee known as the "Digital Audio Review Board," composed of representatives from several industries, including information technology, software, consumer electronics, radio and satellite broadcasting, audio recording, music publishing, performing rights societies, and public interest groups. The Board would have been responsible for drafting a proposed regulation that reflects a consensus of the members of the Board and that is "consistent with fair use principles," although the bill did not define whether such "fair use" has the same connotation as that used in the copyright law.

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[18] *See, e.g., The Audio and Video Flags: Can Content Protection and Technological Innovation Coexist?: Hearing Before the House Subcommittee on Telecommunications and the Internet,* 109th Cong., 2nd Sess. (2006)(statement of Gigi Sohn, President of Public Knowledge) at 5-6.

[19] Am. Library Ass'n v. FCC, 406 F.3d 689 (D.C. Cir. 2005).

[20] H.R. 4861, 109th Cong., 2d Sess. (2006)(bill as introduced).

[21] S. 2686, 109th Cong., 2d Sess. (2006)(bill as introduced). H.R. 5252, the Communications Opportunity, Promotion, and Enhancement (COPE) Act of 2006, was passed by the House, and then was amended in the nature of a substitute by the Senate Commerce Committee, which struck everything after the enacting clause and inserted the language of S. 2686. The House-passed version of H.R. 5252 did not contain an audio flag provision.