

Before the
Senate Committee on the Judiciary

“The Analog Hole: Can Congress Protect Copyright And Promote Innovation?”
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for
The Consumer Electronics Association and
The Home Recording Rights Coalition

On behalf of the Home Recording Rights Coalition and the Consumer Electronics Association, I greatly appreciate the Committee’s invitation to appear today. At CEA, we have more than 2,000 corporate members who contribute more than \$120 billion to our economy and serve almost every household in the country. Any proposal that would impose a design mandate on new consumer technologies and devices needs to be considered carefully and at length, because the consequences may be far-reaching, unanticipated, and damaging.

The Home Recording Rights Coalition was founded almost 25 years ago, in response to a court decision that said copyright proprietors could stop the distribution of one such new and useful product – the VCR. Even the motion picture industry has admitted that it is glad that the Supreme Court allowed the VCR to be sold to consumers. But after saying they will never do so again, the entertainment industry keeps coming back to the Congress with proposals to subject new, legitimate consumer products to prior restraints on their usefulness in the hands of consumers.

We live in an analog world but do virtually all our processing in the digital domain. Semiconductor components and software products that alone, or in combination, convert analog video inputs to digital signals are, and will be, everywhere. We have

considered the subject of “analog hole” legislation for a decade, but over time it gets more, rather than less, complex and daunting. There are *lacunas* left in any draft legislation we have seen on the subject that reflect its complexity, the uncertainties caused by technological change, the lack of consensus, or all of these problems. Their continued presence is reason enough for extreme caution. But we have additional concerns.

We worked closely with the music industry and this Committee to help draft and enact the Audio Home Recording Act of 1992 – only to find out, years later, that the music industry no longer agrees with us that a consumer’s right to make a first generation copy includes the right to play it back. Nor do they any longer agree that the words “No action may be brought under this title alleging infringement of copyright ...” have the meaning we all thought they did in 1992. (They do seem still to appreciate the word “royalties.”)

We worked with this Committee and the motion picture industry on the Digital Millennium Copyright Act of 1998 (the “DMCA”) and have also been surprised at some of the later interpretations of this law that have been urged on the courts. We are very cautious, therefore, in discussing, today, potentially the most sweeping technological mandate ever put into the copyright law.

Hard experience counsels that you establish some touchstones before even considering any such legislation. First, given the government’s poor record in anticipating technological developments, the proponents must prove unequivocally that the drastic step of a technology mandate is necessary.

The motion picture industry has not met this burden. At this time, there is little evidence that the “analog hole” is contributing to the mass redistribution of content over the Internet, and even less that it is contributing to such redistribution of HDTV content.

Indeed, evidence points away from the analog hole as a source of pirated material. MPAA’s own website claims that 90% of pirated copies come from handheld camcorders in movie theaters. And an ATT Labs study shows that 77 percent of movies on P2P services were leaked by movie industry insiders

Given our concerns over the potential chilling effect of such legislation on technology, devices, and consumers, we cannot at this time endorse a legislative approach of the nature of any put forward to date. In addition, we would have these concerns about any mandate proposal:

- Any technical terms, and their consequences, must be absolutely clear and well understood.
- The mandated technologies, their effects in the marketplace and on consumers, and the entire terms under which they would be available to makers of the covered products must be similarly well understood.
- Mandating the use of the technology should not harm technological progress or unduly burden legitimate products.
- It is no longer enough that, as we have previously insisted, a mandate must be accompanied by “encoding rules” that protect a consumer’s right to make private, noncommercial recordings at home. Any mandate legislation also needs to protect, specifically, the consumer’s right to search for, index, store, and play back any home recorded content, in the desired order -- just as consumers do with their personal video and audio recorders today.

Any “Analog Hole” Bill Is About Copy Protection of In-Home Recordings

The aim of any “analog hole” mandate would be to impose on in-home products with analog interfaces the same “DRM” in-home copy protection rules that apply to digital in-home interfaces, in addition to preventing Internet redistribution. Since

effective protection of an analog signal cannot be done by license, the only way to do this is by requiring that any device receiving the analog signal must be subject to a legal mandate governing (1) its potential conversion to digital, and (2) that the applied “coding” not be stripped off or changed, even in the absence of such “A / D” conversion. This can only be accomplished by a mandate potentially covering every component and every piece of software capable of digitizing or changing analog video signals, and on every digital device capable of storing such signals.

Thus, the “analog hole” issue affects more than just free, over the air broadcasts. Every set-top box from a cable or satellite service has analog outputs for HDTV and / or standard definition video. For about the first five years that HDTV was available, the “component analog” interface was the only way of moving an HDTV program from a set-top box to a device that could display HDTV.¹

Content owners have been concerned that, in the future, consumers may be able to tap the analog outputs of set-top boxes to digitize and record programs, including content that otherwise might be classified as “no copy” material under applicable “encoding rules.”² To help explore whether addressing this issue might be feasible, HRRC and CEA and their members participated in a work group of the Copy Protection Technical Working

¹ This interface is still probably the way a majority of U.S. cable and satellite subscribers receive HDTV and DTV programming from set-top boxes. Even purely “digital” displays have HD component analog inputs. At present we know of no product in the consumer marketplace that is configured to digitize or record from the Component Analog interface, which involves three separate wires and a great deal of bandwidth.

² Examples of “encoding rules” enacted to protect legitimate consumer expectations in the presence of copy control technologies include those in Section 1201(k) of the DMCA and the FCC “Plug & Play” regulations.

Group (“CPTWG”).³ Our experience left us with many open questions, none of which seems adequately addressed by any legislative proposal we have seen to date.

The “Analog Content Protection Act” Illustrates Difficulties Rather Than Solutions

The only available legislative reference is H.R. 4659, the “Analog Content Protection Act” introduced last year in the House by Reps. Sensenbrenner and Conyers. In this bill, and in “stakeholder” discussions since its introduction, we see more problems than solutions:

- The scope of the legislation is so broad that it would appear to cover just about any component or piece of software code that can function as an “analog to digital converter,” in addition to covering the end-product, integrated device.
 - Hardware and software performing this function are found in a great variety of products that have nothing to do with television – airplanes, automobiles, medical devices, PCs, measurement equipment, and many, many, more.
 - Yet, essentially, any such component or software would have to be configured to look for certain codes, and to be licensed and technically equipped to encrypt the output. Devices receiving this output would then have to be licensed and equipped to decrypt it.
 - It is unclear under what circumstances the combination of a hardware component, and downloaded firmware or software, would be considered a single “portion” of a device, as the mandate would be defined.
- One would think that after a decade of study by three industries, the sponsors of legislation would be given a consensus definition of the linchpin of the bill: what is “a covered format”—
 - A definition of this term is essential to defining the scope of the devices to be covered by the technical mandate.
 - Instead, this definition is left to be determined, after enactment, by the Patent & Trademark office.

³ The CPTWG is an open forum, of which CEA, the MPAA and the Computer Industry Group are the active founding members. Participants in the content, information technology, and consumer electronics industries have met there regularly for more than ten years.

- The inability, after a decade of discussion, to settle on a definition of “covered format,” suggests that –
 - The proponents are hesitant to indicate the breadth of the semiconductor components, software, and firmware that would be covered;
 - There is a lack of consensus within or among industries; and / or,
 - Technology is changing so rapidly that the proponents are afraid to enshrine a definition in legislation.

Any of these should be a full stop in considering passage of a mandate.

- Two technologies, “CGMS-A” and “VEIL,” would be specified to work in tandem. VEIL is present as a backstop for the stripping out of CGMS-A encoding, which is said to be relatively easy to do. However, the result of the VEIL technology would be to achieve a default “no copy” outcome even where the content provider did not intend to, or should not be allowed to, prevent copying.⁴
 - Although CGMS-A has a long history of actual use in consumer electronics products, the VEIL technology is largely an unknown entity in this respect, particularly as to key concerns such as implementation cost, burdens on devices that would have to detect or preserve it, any intellectual property rights covering the technology and, if applicable, any license terms, fees and conditions for its use.⁵
- There are lengthy “Compliance” and “Robustness” rules on the operation of products containing the covered components. The narrower the definition of covered semiconductor and software components, the tighter the Compliance and Robustness rules on end products would have to be, to assure compliance.
- As in the case of the Broadcast Flag, there would need to be a process to qualify encryption technologies for downstream protection.
 - Unlike the case of the Flag, however, the subject here is not just televisions that process regulated signals, it would be all devices capable of processing an analog signal to produce a digital result.

⁴ While both of these technologies, and others, have been examined in Work Group sessions of the CPTWG, the problems inherent in applying them – including the unacceptable default outcome from VEIL and the difficulty in defining a scope of covered devices – are also very familiar. There is no consensus in the technical community that this combination is appropriate as a mandated solution.

⁵ H.R. 4659 has extensive provisions for public scrutiny of licensing terms for improvements in VEIL technology, but contains so such scrutiny requirements as to the mandating of responses to VEIL in the first place.

- This raises issues as to how many such technologies should be qualified; how such a great variety of converter components might operate with a great variety of decryption devices, and whether the operation of some non-TV products – either intentionally or by mischief – could be brought to a sudden and disastrous halt.
- Many other elements of the legislation are left vague or punted to some future consensus –
 - the meaning of “associated software,”
 - the precise obligation on “analog to analog” conversion devices;
 - the meaning and scope of the exemption for “professional devices” (does this include “components” and “software”?);
 - whether there is a “professional” exemption for “circumvention” activity;
 - what the robustness rules mean by referring to a device that is “solely capable of playing and can’t be modified”?

In summary, drafters of this sort of legislation are on the horns of a dilemma:

Make it very specific, and the Congress will have established a technical mandate that could constrain technology, competition, and consumers for decades. Leave discretion to an administrative body, later, and the Congress will have simply postponed decisions that the private sector – for good reason – has been unable to resolve for a decade. It is not clear, in this case, what policy basis or preparation would equip the PTO to make these decisions, or who would exercise oversight over its judgments.

The Implications Are Much Broader Than Those Of The Video Broadcast Flag

We should emphasize that this is not the Broadcast Flag, in which there was no attempt to impose in-home copy protection constraints on any product with an A / D converter, and which did apply only to well-defined TV receiver circuitry that was already the subject of longstanding technical standards, and in which there was no attempt to impose design constraints at very specific component or software levels. (And even so, the Broadcast Flag remains controversial.)

At an inter-industry technical work group in 2004, Dr. Randy Cole of CEA member Texas Instruments made a presentation about the difficulties of trying to define and impose a mandate on the sort of semiconductor and software devices that now comprise the market. Recently he updated his analysis for consideration by Committee staff. We herewith submit it and ask that it be included in the record.

Is This Mandate Necessary?

Any “Analog Hole” legislation would be primarily about private, noncommercial, in-home conduct of the sort that consumers have been accustomed to for decades, and would cover anything with an analog input that can process video signals. In addition to answering all the questions that we and others have about the prospect that such legislation could do more harm than good, proponents should also have to demonstrate that, in light of the potential for unintended consequences, it is truly necessary.

CEA and HRRC have, in good faith, discussed the idea of “analog hole legislation” with motion picture industry representatives because (1) we recognized their desire for “rules” that would apply across all platforms, if possible, (2) they were willing to work with us on “encoding” rules to protect consumers’ fair use abilities to record, store, and play back content for use in the home and among family groups, and (3) we want to avoid truly harsh impositions on consumers, such as “Selectable Output Control” or “downresolution” of analog outputs.

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Finally, we must not ignore the overarching issue of technological progress and U.S. competitiveness. While other countries are busy developing their technology industries in order to compete more efficiently with the United States, on several fronts

we face proposals from the content community to suppress technological development on arbitrary or insufficient bases. This is a trend that ought not to be encouraged.

Again, thank you, Mr. Chairman, for the opportunity to appear before this Subcommittee to address these important issues. We have worked collegially with the content industries when they have been willing to do so. We appreciate being asked to be here today and look forward to working with you and your staff as you examine the important issues that have been raised for discussion today.