DIGITAL WATERMARKING ALLIANCE

www.digitalwatermarkingalliance.org

The Federal Communications Commission
Washington DC 20554

In the Matter of	)	
	)	
Implementation of the Child Safe Viewing	)	MB Docket No. 09-26
Act; Examination of Parental Control Technologies	)	
for Video or Audio Programming	)	
	)	
Notice of Inquiry	)	
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Comments of the Digital Watermarking Alliance

Introduction

The Digital Watermarking Alliance ("DWA") is pleased to submit the following comments in response to the above-captioned Notice of Inquiry ("NOI").

Executive Summary

The DWA is an international alliance of industry leading companies that deliver valuable digital watermarking technology and solutions to a broad range of customers and markets around the world. The Digital Watermarking Alliance is made up of organizations that are successfully delivering digital watermarking technology and solutions to various markets, including media and entertainment, state and national governments, mobile communications and other commercial markets. Members include: AquaMobile, Civolution, DataMark Technologies, Digimarc, Gibson, ISAN-IA, MarkAny, Media Science International, Streamburst, Thomson, Université catholique de Louvain, Verance, and Verimatrix.

Digital watermarking is the process by which identifying data is woven into media content, giving it a unique, digital identity. Imperceptible to the human senses yet easily recognized by special software detectors, a digital watermark remains constant even through recording, manipulation and editing, compression and decompression, encryption, decryption and broadcast — without affecting the quality of the content. Today, digital watermarks are broadly deployed with billions of watermarked objects and hundreds of millions of watermark detectors in the market, supporting various commercial and government applications. For example, even the newest generations of video disc players employ digital watermarking to protect copyrighted material

On March 2, 2009, FCC issued a *Notice of Inquiry* ("*NOI*"), implementing a provision of the Child Safe Viewing Act of 2007, adopted December 2, 2008. This Act directed the CC to initiate a proceeding to examine "the existence and availability of advanced blocking technologies that are compatible with various communications devices or platforms."

Congress defined "advanced blocking technologies" as "technologies that can improve or enhance the ability of a parent to protect his or her child from any indecent or objectionable video or audio programming, as determined by such parent, that is transmitted through the use of wire, wireless, or radio communications."

FCC will examine blocking technologies that

1. may be appropriate across a wide variety of distribution platforms and devices,
2. can filter language based upon information in closed captioning,
3. can operate independently of pre-assigned ratings, and
4. may be effective in enhancing a parent 's ability to protect his or her child from indecent or objectionable programming, as determined by the parent.

The Digital Watermarking Alliance ("DWA") believes that digital watermarking is a key enabling technology to achieve the above objectives.

1. Problem

The media environment encountered by children is becoming increasingly complex. As a result of the transition to digital technology and the continuing technological convergence of media,

children today can access the same content from a variety of media platforms, some of which are portable.

The ubiquity of media in the lives of children and the portability of many media devices makes direct adult supervision of the content to which children are exposed increasingly difficult.

In 1998, the Commission adopted rules requiring that, starting in 2000, television sets with screens 13 inches or larger must be equipped with a V-chip.

- Today the V-chip is not widely used and many parents remain unaware of it. The cited reasons include the difficulty of programming the V-chip
- The V-chip has been referred to as an "orphaned technology," meaning that no entity has a financial incentive to promote its use
- The V-chip is available for blocking TV content on the family television set only. It is neither designed for or implemented to block the same content over the Internet, on the family computer, or on the child's own laptop or wireless device.

2. Scope of Inquiry and DWA's interests

The Inquiry invites public comments on a broad range of 44 subjects.

Among these 44 inquiring subjects, the following areas are of DWA expertise and comment::

1) Whether there are blocking technologies currently available or in development that are capable of operating across multiple platforms. Page 20, Paragraph 44.
2) Whether tagging or labeling content is an effective solution to protect children from inappropriate content. Page 18, Paragraph 18.
3) Advanced blocking technologies and parental empowerment tools that assist parents in controlling their children's access to audio and video programming on the Internet. Page 17, Paragraph 39.
4) Existence and availability of blocking technologies for non-networked devices capable of receiving video or audio programming, particularly DVD players and VCRs, as well as similar non-networked devices, such as digital audio players (MP3 players) and portable media players. Page 15, Paragraph 36.

5) Blocking technology currently available for content on wireless devices (such as "Internet Content Access Control" being developed by the wireless industry to enable account holders to filter and block access to specific websites), as well as ways of encouraging the development, deployment, and use of such technology. Page 12, Paragraph 28, and Page 13, Paragraph 31.
6) "Methods of encouraging the development, deployment, and use" of advanced blocking technologies. Page 5, Paragraph 9.
7) Efforts to improve or expand V-chip technology and to encourage increased use of the V-chip by parents. Page 5, Paragraph 10.
8) Blocking technology that operates based on ratings established by an entity other than the creator of the programming. Section 2(b) of the Act. Page 9, Paragraph 20.
9) Blocking technology for digital video recorders (DVRs). Page 11, Paragraph 26.

3. Discussion of Digital Watermarking Technology for Parental Control

Digital watermarks are data embedded directly within content which are imperceptible to human eyes but readable by computers (see http://www.digitalwatermarkingalliance.org/glossary.asp). Digital watermarks are currently deployed in billions of audio, video, image and print objects and hundreds of millions of watermarked enabled applications. These can be recognized by enabled software or hardware to provide copyright information, authenticate, track, monitor, enhance security and enable access to additional data, information and e-commerce opportunities across devices and networks. The technology helps:

- Broadcasters track, verify and measure TV programming and advertising
- Movie and music studios deter piracy of movies, music and DVDs used in the Academy Award Screener program. It is also used to secure the distribution of digital cinema content
- Central banks deter digital counterfeiting of banknotes
- Photographers identify and manage image copyrights
- Federal, State and international government organizations authenticate IDs presented as proof of identity, and deter identity theft, fraud and document counterfeiting

As indicated, one of the key applications of digital watermarking is to use the watermark as a flag within content to enable copyright communication and enforcement. The watermark which carries rights flags is embedded by right holders prior to content distribution. Compliant entertainment devices such as DVD player, TV or portable devices examine content for the flags and enforce the rights asserted in the flags. Because such watermarks survive a great deal of content transformation which typically occur when content moves across multiple platforms and devices, the right flags are persistent and rights are ubiquitously enforceable.

Digital watermarking can also enable content identification and copyright communication on a broad scale and can provide a range of solutions for identifying, securing, managing and tracking digital images, audio, video, and printed materials. In fact, digital watermarking technology has already been adopted by many photographers, movie studios, record labels, television broadcasters, and corporate enterprises as a way to identify, protect and manage the rights to their content while still offering their consumers the convenience and portability to which they have become accustomed.

In light of the capabilities of digital watermarking and experiences in using it, DWA, on behalf of its members, would like to provide the following comments in the nine areas identified in the previous section:

a. **Digital watermarking is capable of operating across multiple platforms for parental control.**

Digital watermarks provide consistent and persistent flags across multiple platforms. Such flags can be embedded in various stages such as in content production and content distribution. Once they are embedded in content, they can be read and enforced by all downstream devices.

Watermarking-based flags may also be overwritten in case the content distributor or the parents need to reset or update the ratings. We are not aware of any other technology which may provide such capability.

b. **Digital watermarking is a tagging or labeling technology and we believe that it is an effective solution to protect children from inappropriate content.**

c. **As digital watermarking persistently associates ratings with content, it can enable parents to control their children's access to audio and video programming on the Internet**

Digital watermarking has emerged as a key technology for content filtering and monetization of Internet video and audio content. In addition to the rating information, the watermarks can also carry a uniform content identifier, and this identifier can allow parents to automatically obtain third-party ratings from their trust communities or organization for more personalized decision-making.

d. Digital watermarking can enable parental control on non-networked devices capable of receiving video or audio programming.

e. Digital watermarking can enable parental control on wireless devices capable of receiving video or audio programming.

While "Internet Content Access Control" is intended to enable parents to filter and block access to specific websites via wireless devices, it doesn't address cases where the content is already acquired from other sources. Digital watermarking allows ratings related information to be embedded into the content itself, so that any enabled device may detect and act according to the rating, independently of whether the access provider has verified the content rating.

f. While digital watermarking can enable parental control, it can also enhance consumer's experience in enjoying content, which should be a common interest for all parties in the content value chain from content producer, distributor to device manufacturers.

Digital watermarking has already been widely adopted by content owners as a way to identify, protect and manage the rights to their content. Through watermarking-based content identifiers, parents may connect to their trusted communities and third-party ratings organizations to exchange information and obtain advice to make better decision for their children regarding the content ratings. It can also enhance children's entertainment and learning experience by providing rich metadata and additional information about the content. These watermarking-based content identifiers may also enable children to connect to safe online communities developed around their favorite content.

g. Digital watermarking can be incorporated into V-chip and also work with additional new technologies.

Digital watermarking is not a "orphaned technology" like the referred V-chip. It is an "orthogonal" technology, which can work together with and provide information to control systems such as ‘'Internet Content Access Control" being developed by CTIA or TiVo KidZone.

h. Watermarking-based content identifier enables parents to obtain ratings established by an entity other than the creator of the programming.

Watermarking-based flags can be overwritten by parents, such as in the case when they connect with their most trusted source of ratings.

i. As watermarking-based parental control is enforced by playback devices, it is effective for digital video recorders (DVRs).

4. Summary

The members of the Digital Watermarking Alliance assert that digital watermarking is an ideal technology for content identification for the purposes of parental control of content. The members are prepared to provide additional information to the FCC and demonstrate various applications of digital watermarking that could be relevant to the needs of the Child Safe Viewing Act.

Respectfully Submitted by John Raffetto on behalf of the DWA
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