

April 25, 2002

CONTENT PROTECTION **STATUS REPORT**

Overview

For many years and within many forums MPAA and its member companies have engaged with the Information Technology ("IT") and Consumer Electronics ("CE") industries in collaborative efforts aimed at creating viable markets for digitally delivered media. The development of the DVD standard serves as a shining example of a vibrant consumer market that results when these collaborations hit their mark.

While positive progress is being made on many fronts, ever-increasing levels of online piracy may destroy the market for digital entertainment before it has a chance to be fully birthed. In recent Congressional testimony, executives from the motion picture and television industries laid out three key goals that must be attained if this trend toward rampant piracy is to be stemmed and give way to the development of a legitimate market. These include:

***Goal One:** Implementing a "broadcast flag" to prevent the unauthorized redistribution of in-the-clear digital over-the-air broadcast television including its' unauthorized redistribution over the Internet.*

***Goal Two:** Plugging the "analog hole," that results from the fact that digital devices are not generally designed to respond to current analog protection mechanisms. Thus, protected analog content, including content that originated in protected digital format but was stripped of its digital protection when it was converted to analog for display on analog TV receivers, is left unprotected when converted to a digital format.*

***Goal Three:** Putting an end to the avalanche of movie theft on so-called "file-sharing" services, such as Morpheus, Gnutella, and other peer-to-peer (p2p) networks.*

This report is divided into two sections. The first section provides an update on progress in activities relating directly to attaining these three goals while the second provides some brief insight into the many other activities where MPAA and its member companies are engaged to ensure that consumers will see the benefits of a vibrant digital media marketplace.

Status Update on the 3 Key Goals

1.1 The Broadcast Flag

The "Broadcast Flag" is a means for signaling that digital over-the-air broadcast television programming, transmitted "in-the-clear" by terrestrial TV stations, is to be protected against unauthorized retransmission including its' unauthorized redistribution over the Internet. Detection and response to the Broadcast Flag does not mean less functionality for video devices, including PCs that receive DTV. Rather it *adds* to these devices the ability to determine the difference between protected and unprotected works. The MPAA and its member companies have no desire to reduce the functionality of PCs or other devices and in fact want them to be MORE functional, not less. That is, so that they are able to provide a secure environment for digital over-the-air broadcast television content, in addition to everything else they do today.

The forum for discussion and action regarding the Broadcast Flag is the Broadcast Protection Discussion Group ("BPDG"), which is run under the auspices of the Copy Protection Technical Working Group ("CPTWG"). CPTWG is an open, cross-industry forum that includes representatives from the entertainment, information technology and consumer electronics industries, as well as consumer group representatives and other interested parties.

The goals of the BPDG are:

1. To provide a detailed technical specification for the detection and response to the Broadcast Flag,
1. To define the secure handling, output and recording of broadcast content marked with the Flag (via a set of Broadcast Flag Compliance and Robustness Rules) and,
1. Via the Policy Group set up in "parallel" to the BPDG, to recommend how the Flag should be implemented and what governmental / regulatory actions are needed to support its enforcement and sustain the Broadcast Flag in the US market.

A drafting committee was also formed to create the required documentation for the Broadcast Flag Compliance and Robustness Rules. Since the inception of the BPDG on November 28, 2001 the group has met regularly both in person and via teleconference. Specifically:

Face-to-Face Meetings

11/28/01 – 1st BPDG meeting
01/15 - CPTWG meeting and 2nd BPDG
02/27 - CPTWG meeting and 3rd BPDG
03/21 - 4th BPDG meeting
04/03 - 5th BPDG meeting

BPDG Conference Calls

12/18 - BPDG conf. call
01/24 - BPDG conf. call
02/07 - BPDG conf. call
02/21 - BPDG conf. call
03/14 - BPDG conf. call
03/27 - BPDG conf call
04/01 - BPDG conf. call

Policy Group Conference Calls

03/27 - Policy group call
04/01 - Policy group call

In addition to these meetings there have been numerous Drafting Committee meetings & conference calls.

Status

The initial deadline for the completion of BPDG's work was March 31, 2002 and, when this goal was not attained, a second deadline of April 17, 2002 was agreed upon. While significant progress was made during the first two weeks of April, the second deadline was not met as additional time was needed for cross-industry agreement on the Broadcast Flag Compliance and Robustness Rules. However during the week of April 15, 2002 substantial progress was made and it is hoped that a consensus document will be circulated later in the week of April 22 to the whole BPDG for discussion at its April 29 meeting. Subsequently, the BPDG Co-Chairs will deliver a final report on the Compliance and Robustness Rules.

Work is also progressing within the Policy Group. At this time there are several significant open issues and it is unclear when consensus will be reached. Among other issues under discussion is the overall issue of an appropriate framework for enforcement, including various combinations of legislative, regulatory, and/or private contractual licensing.

1.2 Plugging the Analog Hole

While the entertainment industry is marching toward an all-digital future environment where robust digital content protection measures will enable a viable market, analog connections to conventional televisions, VCRs and the like will remain for a long time to come. This presents a problem in that digital devices can capture and digitize unprotected analog signals (including formerly protected digital signals that are stripped of their protection as they pass through analog outputs) with complete disregard for current analog copy protection mechanisms, thus enabling a major source of unauthorized duplication and/or redistribution. This attribute will keep analog devices and interconnects around well past their natural extinction.

The primary means to address this issue, dubbed the "analog hole", is via embedded watermarks (which have additional applications as will be discussed below). In order to help plug the hole, watermark detectors would be required in all devices that perform analog to digital conversions. In such devices (e.g., PC video capture cards), the role of the watermark detector would be to detect the watermark and ensure that the device responds appropriately.

Detection and response to the watermarks does not mean less functionality for video devices, including PCs.. Rather, it *adds* to these devices the ability to determine the difference between protected and unprotected works.

The realization of watermarking as a vehicle in plugging the analog hole has two steps:

1. A robust watermarking technology must be selected, and
2. Compliance and enforcement rules for detection and response to this technology in various platforms (including PC and PC-like devices) must be drafted and agreed upon.

In the case of DVDs, the selection of a watermark technology has been underway for some time under the auspices of the DVD Copy Control Association ("DVD-CCA"). Once chosen, the watermark would be implemented in conjunction with CSS licensed DVD players (both consumer electronics devices and DVD PC drives).

While the DVD-CCA watermark process will, we hope, select a consensus watermark that is agreeable to the copyright, IT and CE industries, it only represents a solution that is specific to CSS-licensed DVD players. Comprehensively addressing such issues as the analog hole beyond DVD players will require cross-industry agreement in a (tbd) cross-industry forum.

Status: DVD-CCA Watermark Selection

In early 2001, the DVD-CCA provided notice to interested parties that it would be seeking to evaluate and select an industry consensus watermark. Seven entities responded with expressions of interest. Later in the year, DVD-CCA issued an invitation to bid. Two of the entities, the VWM group and Toshiba, submitted bids. Two other entities sent letters indicating that they believed they had patent claims that would be infringed by any watermark technology.

The DVD-CCA is currently evaluating and testing the two bids and has set meetings during the week of April 15, 2002, with its members to discuss the results of this work. If the results are favorable, the current board, which is made up of representatives of Fox, Warner Bros., Matsushita, Toshiba, Intel and Microsoft, could select a watermark this month. If the results are unfavorable and no final decision is made before May 1, 2002, any subsequent approval decision will be left to a new board of directors and will be subject to a more complicated approval process pursuant to the DVD-CCA's bylaws.

Status: Watermark Detection and Response in A/D Converters

As noted, the selection of a watermark is only the first step in plugging the analog hole. Subsequently, a cross-industry forum must be created or chosen in determining how and under what compliance framework watermark detection and response would take place in A/D converters.

1.3 Peer to Peer ("P2P")

The first step in addressing the P2P problem is in creating a forum for a dialogue with the IT industry to examine this problem in detail.

Status

No cross industry meetings have been held and none are currently scheduled. The MPAA Office of Technology is prepared to meet at any time in an inter-industry dialog. More specifically, the CEOs of MPAA and its member companies have responded in the affirmative to a letter sent by a group of IT CEOs urging private dialog. The studio response specifically offers to designate appropriate high-level executives to meet with representatives of the IT industry on this critical issue.

Other Activities

The MPAA and its members are actively engaged in a panoply of ongoing efforts with the IT and CE industries, including through private forums and negotiations as well as standards setting activities.

Among others, these include:

2.1 5C / DTCP

5C, a private consortium consisting of Sony, Matsushita, Intel, Toshiba and Hitachi, developed the DTCP (Digital Transmission Content Protection) cryptographic protocol for use in protecting audio/video entertainment content from illegal copying, interception and tampering as it traverses high performance digital connections, notably IEEE 1394 (a.k.a. "Firewire").

Status: MPAA members have been in negotiation with 5C for over 4 years. Two studios have signed licensing agreements with 5C while five others remain in license negotiations primarily due to their desire to augment the 5C license agreement to mandate a response to the broadcast flag as a triggering mechanism in protecting digital broadcast television against unauthorized redistribution including its' unauthorized redistribution over the Internet (see the Broadcast Flag section of this report for further information).

2.2 4C / CPRM

4C, a private consortium consisting of IBM, Intel, Matsushita and Toshiba developed the CPRM (Copy Protection, Recordable Media) cryptographic method for protecting entertainment content when recorded on physical media. CPRM is designed to work in conjunction with other link content protection systems such as 5C.

Status: The music industry has been working for some time with the 4C companies in negotiating licensing terms for Content Protection for Pre-recorded Media (CPPM), used in the protection of DVD-Audio discs. The MPAA and its members are awaiting a response from 4C to engage the MPAA in a discussion of the licensing terms for the use of CPRM for making secure recordings of video content.

2.3 HDCP

Developed by Intel Corporation, the HDCP (High-bandwidth Digital Content Protection) protocol is designed to protect digital entertainment content as it travels across a Digital Visual Interface ("DVI") connection, which connects digital devices to digital displays.

Status: The MPAA and its member companies have been negotiating HDCP licensing terms for over two years and discussions are ongoing. Significant progress has been made and the MPAA facilitation of this process is nearly completed after which individual studios will be in a position to conclude the process through discussions directly with Intel as they deem fit.

2.4 CableLabs

A non-profit research and development consortium of cable television system operators representing North and South America, CableLabs is leading research and development for cable standards including the development of the OpenCable specification.

Status: The MPAA and its members have been actively discussing with CableLabs its OpenCable specification, specifically in regard to the incorporation of content protection protocols and in reviewing licenses and copy protection technologies.

2.5 DVB

An industry-led, historically more Euro-focused forum of over 300 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries, the Digital Video Broadcasting (DVB) Forum is committed to designing global standards for the delivery of digital television and data services.

Status: The MPAA and its members are actively engaged in the DVB Copy Protection Commercial and Technical Module groups and continue to work through the specification development process for defining a DVB Content Protection and Copy Management (DVB CPCM) specification. It has also worked with the pertinent DVD groups on issues surrounding the need for an effective licensing mechanism for the DVB CPCM specification in order to enforce compliance.

2.6 CPTWG

CPTWG is a cross-industry working group which brings together IT & CE technology companies as well as the studios six times a year to discuss new technologies and methodologies for content protection.

Status: The MPAA and its members, together with the CE and IT industries, initiated this activity many years ago to address copy protection of DVD material and we continue to facilitate and participate in CPTWG content protection activities, including the previously noted activities of the BPDG sub-group.

2.7 MPEG

A working group of ISO/IEC, MPEG has been tasked with the development of international standards for compression, decompression, processing, and the coded representation of moving pictures and audio.

Status: The MPAA and its members actively participate in all aspects of MPEG including MPEG-4, 7 and 21. Most recently the MPAA participated in a consortium that successfully developed and submitted the core technology selected as the foundation for the MPEG-21 Rights Data Dictionary.

2.8 TV Anytime

TV Anytime is a relatively new association of industries (IT, CE and Entertainment), which seeks to develop specifications to enable audio-visual and other services for Personal Video Recorders.

Status: The MPAA and its members companies have participated in this forum, providing liaison between this organization and other relevant bodies (for example MPEG and DVB).

2.9 ATSC

Yet another cross-industry forum, the Advanced Television Systems Committee is an international, non-profit membership organization developing voluntary standards within various communications media including digital television, interactive systems, and broadband multimedia communications.

Status: The MPAA and its members actively participate in the ATSC. A recent example would be within the work of the T3S8 technical group in the development of the technical broadcast standards for the Broadcast flag that is being discussed in the Broadcast Protection Discussion Group of CPTWG.

2.10 The DVD Forum

The DVD Forum is an international association of hardware manufacturers, software firms and other users of Digital Versatile Discs created for the purpose of exchanging and disseminating ideas and information about the DVD Format and its technical capabilities, improvements and innovations. The Forum works to promote broad acceptance of DVD products on a worldwide basis, across the entertainment, consumer electronics and IT industries.

Status: The member companies of the MPAA actively participate in this forum.

2.11 ISMA

The Internet Streaming Media Alliance, Inc. is a non-profit corporation formed to provide a forum for the creation of specification(s) that define an interoperable implementation for streaming rich media (video, audio and associated data) over Internet Protocol (IP) networks

Status: The MPAA is actively monitoring the activities of this organization to ensure that the technological and licensing concerns of the copyright industries are represented.

2.12 WAEA

The World Airline Entertainment Association is a non-profit entity made up of MPAA member companies, most of the world's airlines and the CE industry. The WAEA establishes industry standards for the use of entertainment technology such as DVDs and Video on Demand in airlines.

Status: The MPAA and its members participated heavily in the development of these standards, which include the means to copy protect both early window and home video product as they are deployed on the airlines.