

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of )  
 ) MB Docket No. 02-230  
Digital Broadcast Copyright Protection )  
 )

**COMMENTS OF VERIZON<sup>1</sup>**

**INTRODUCTION**

Verizon strongly supports the content industry's goal of protecting copyrighted works from unauthorized distribution, and applauds the Commission in its efforts to resolve these issues and speed the transition to DTV. However, Verizon respectfully urges the Commission to engage in further study before implementing the broadcast flag standard and consider other alternatives that will better protect digital content and will not curb the development of future technologies. If not narrowly tailored, the broadcast flag standard could set a dangerous precedent for future regulation of the Internet and could create serious enforcement problems for the Commission. If the Commission decides to take action at this time, we urge the Commission to adopt a narrow mandate that applies the broadcast flag standard only to digital television receivers of the MPEG-2 transport stream and not more broadly to any modulator or demodulator in a transport network or the home.

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<sup>1</sup> The Verizon telephone companies ("Verizon") are the local exchange carriers affiliated with Verizon Communications Inc., and are listed in Attachment A. For purposes of this filing, Verizon includes Verizon Internet Services Inc., which provides Internet access to more than one million subscribers.

**I. THE BROADCAST FLAG PROPOSAL.**

The broadcast flag is a technical standard proposed by the Broadcast Protection Discussion Subgroup (“BPDG”), a subgroup of certain representatives of the content and consumer electronics industries.<sup>2</sup> The BPDG was convened to evaluate a copy protection technology proposed by an industry group known as the “5C.”<sup>3</sup> The “broadcast flag” (technically referred to as an ATSC redistribution control descriptor) is a marker embedded in a digital television broadcast, which contains certain restrictions that dictate when the content may be copied. The content is not encrypted at its source, but travels unencrypted over-the-air or “in the clear” with the flag embedded. The BPDG did not consider a technical standard by which content providers encrypt digital signals at the source (*i.e.*, the transmitter), a standard that would not require regulation of downstream technologies. For the flag to be effective, the electronics device that receives the digital television signal must be equipped to detect the flag and act on those copying instructions.

The BPDG recommended that the broadcast flag standard be implemented by mandating the use of certain digital output (or recording) technologies that have been “approved” for use in consumer electronic devices. These technologies were collected on a list (referred to in the BPDG report as “Table A”). The BPDG did not recommend a process for supplementing Table A with other technologies but requested that a “parallel group” consider “proposed criteria” in order to determine whether a particular technology should be authorized for use. BPDG Final Report at Section 6.6.1. The BPDG did consider, however, a proposal offered by the Motion

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<sup>2</sup> See Final Report of the Co-Chairs of the Broadcast Protection Discussion Subgroup to the Copy Protection Technical Working Group (June 3, 2002) (“BPDG Final Report”).

<sup>3</sup> The “5C” companies are Intel Corp., Hitachi Ltd., Matsushita Electric Industrial Co. Ltd., Sony Corp., and Toshiba Corp.

Picture Association of America (“MPAA”) and others that would require various combinations of content providers (some of which must be studios) and device manufacturers to approve protection technologies before they may be added to Table A. BPDG Final Report, Tab F-1: 5C/MPAA/CIG Proposal Table A Criteria (April 25, 2002).

**II. THE COMMISSION SHOULD STUDY OTHER ALTERNATIVES BEFORE IMPLEMENTING THE BROADCAST FLAG STANDARD.**

The Commission should not require use of the broadcast flag at this time, but should instead carefully review all aspects of the broadcast flag standard and its potential impact on all industries.

**A. The Broadcast Flag Standard As It Presently Exists Will Not Prevent Digital Piracy Over The Internet.**

It is important to keep in mind that the broadcast flag standard alone will do little to prevent unauthorized redistribution of copyright protected works over the Internet. For example, as the BPDG acknowledged in Section 2.5 of the BPDG Final Report, the broadcast flag proposal does nothing to solve the problem of the “analog hole.” The “analog hole” problem results from the fact that regardless of how a digital file is copy-protected, its contents eventually must be converted to an analog signal. When a digital stream is converted into analog form, the “broadcast flag” will disappear and any user may re-digitize the signal, with no flags, and copy the protected content.

Also, as the National Music Publishers’ Association (“NMPA”) has noted in its comments, the broadcast flag’s “propriety is dependent on what downstream capabilities and control are included in the copyright protection scheme.”<sup>4</sup> Because of the wide variety of

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<sup>4</sup> Comments of the National Music Publishers’ Association at 3 (filed Oct. 30, 2002) (“NMPA Comments”).

technologies that may receive and distribute digital signals, NMPA argues that limiting the broadcast flag copyright protection technology to only digital television receivers will be a wasted effort: “we believe that it would be contradictory to mandate a technology narrowly focused on redistribution of the DTV broadcast while requiring that other downstream use and re-distribution be permitted. . . . enforcement of compliance by DVD-R manufacturers while allowing PC software developers to build DTV storage and retransmission programs without consequence is no protection at all.” NMPA Comments at 12. For the broadcast flag to work, NMPA argues, the Commission must at least consider applying those same copyright protection technologies to personal computers and computer networks.

The danger in this position is that it has no logical stopping point. Many devices receive and distribute digital television signals or will be able to do so in the future. If the Commission adopts the broadcast flag standard, will it also require computer manufacturers to design personal computers with the capability to detect files containing the broadcast flag? Will the Commission forbid companies from manufacturing or selling software or products that permit a user to receive or distribute digital broadcasts? Must ISPs or other providers that carry digital content over their networks configure or reconfigure their hardware or software systems to detect the broadcast flag? Will the broadcast flag standard apply to home networks, personal digital assistants, or even cell phones? It goes without saying that these types of regulations are far beyond the Commission’s traditional mandate and area of expertise and could have serious consequences for the high technology sector.

Nor is the Commission’s intervention necessary in this area. Copyright law already governs standards under which providers will accommodate digital rights management technologies. The Digital Millennium Copyright Act (“DMCA”), as one example, governs ISPs’

agreements to develop standards to protect copyrights. Section 512(i) of the DMCA requires that an ISP accommodate and not interfere with “standard technical measures.” Standard technical measures are standards used to identify or protect copyrighted works, which (A) have been developed pursuant to broad consensus of copyright owners and service providers in an open, fair, voluntary, multi-industry standards process; (B) are available to any person on reasonable and nondiscriminatory terms; and (C) do not impose substantial costs on service providers or substantial burdens on their systems or networks. 17 U.S.C. § 512.<sup>5</sup>

Verizon respectfully suggests that the Commission carefully consider these implications before proceeding down this slippery slope. To date, the Commission has been careful to comply with Congress’ clear direction “to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation.” 47 U.S.C. § 230(b)(2). The Commission has wisely allowed market forces to determine the shape and configuration of the Internet and the computer industry, recognizing that the Internet’s explosive growth has largely been the result of relatively few governmental constraints. If the Commission determines that it must regulate in this area, such regulations should be narrowly tailored and make clear that the broadcast flag will not dictate how computer manufacturers and ISPs may design their networks.

**B. The Broadcast Flag Standard Must Not Stifle The Development And Deployment Of New Technologies.**

As a company that delivers multimedia content over its DSL broadband access network, Verizon has another concern with the current broadcast flag proposal: the technologies it

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<sup>5</sup> As the Commission recognized in the NPRM, there are also serious questions concerning the Commission’s authority to mandate copyright standards.

mandates are incompatible with those used in Verizon's network and will restrict the development of new technologies that will bring better and faster service to its customers.

First, the broadcast flag standard currently specifies only two modulation schemes to embed digital information in a carrier wave for broadcast: quadrature amplitude modulation (QAM) and vestigial sideband (VSB). Thus, under this proposal, delivering networks must provide multimedia content through a carrier that has been modulated to either QAM or VSB. But many DSL networks, including Verizon's, employ discrete multitone (DMT) modulations instead of QAM or VSB. This requirement could effectively preclude Verizon from carrying any sort of broadcast multimedia content over its DSL network. Verizon would also be hamstrung in its selection of modulation schemes for any new broadband access technologies deployed in the future.

Likewise, the broadcast flag could affect the customer premises equipment that broadband service providers may choose to support for home gateway systems.<sup>6</sup> Home gateway functionality has already been deployed in Very High Speed Digital Subscriber Line (VDSL) networks as the demodulation/re-modulation device in the home. There is great debate within the industry concerning the best modulation scheme to use in VDSL: either DMT or QAM. Further, the Open Services Gateway Initiative ("OSGi") – a non-profit corporation comprised of leading service and content providers, infrastructure/network operators, utilities, software developers, gateway and set-top box suppliers, consumer electronics/device suppliers and research institutions—has done considerable work promoting the development of specifications

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<sup>6</sup> A home gateway connects a home's local area network to the Internet. Home gateways differ in their capabilities, but generally support broadband service connectivity, Internet connection sharing, and a firewall.

for the delivery of multiple services over wide-area networks to local networks and devices.<sup>7</sup>

The broadcast flag standard would derail these cooperative efforts by arbitrarily mandating the use of only two types of transmission schemes.

The broadcast flag standard also has serious implications for ISPs' bandwidth management. The standard permits the use of only MPEG-2 to transport the broadcast flag.<sup>8</sup> But other encoding technologies are under development that promise significantly higher compression rates than MPEG-2, including MPEG-4. These new encoding technologies could be vital to the delivery of broadcast content because they will permit service providers to use bandwidth more efficiently. The broadcast flag standard, as currently proposed, could limit the use of these more promising compression algorithms.

If the Commission decides to adopt the broadcast flag, it should explicitly limit its application only to digital television receivers that operate in the MPEG-2 transport stream. It should make clear that it will not apply, not only to encoding technologies beyond MPEG-2 but to any developing Internet technology outside of digital television receivers.

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<sup>7</sup> The OSGI specification is designed to compliment and enhance virtually all residential networking standards and initiatives, such as Bluetooth™, CAL, CEBus, Convergence, emNET, HAVi™, HomePNA™, HomePlug™, HomeRF™, Jini™ technology, LonWorks, UPnP, 802.11B and VESA.

<sup>8</sup> The MPEG-2 standard was developed by the Moving Pictures Experts Group ("MPEG"), a working group of the International Standards Organization and the International Electrotechnical Commission, for the compression and transmission of digital television signals. DVDs and digital television set top boxes use MPEG-2 coding. MPEG-4, in development since the mid-1990s, is a multimedia content representation standard. It is intended for online and wireless multimedia, including Internet streaming of music, television programs, and movies.

**III. REQUIRING USE OF THE BROADCAST FLAG WOULD CREATE INTRACTABLE ENFORCEMENT PROBLEMS.**

The BPDG Final Report offers virtually no guidance as to how the Commission may enforce the use of the broadcast flag standard. But it is clear that if not narrowly tailored, the standard will be difficult, if not impossible, for the Commission to enforce.

First, the Commission could be forced to police the electronics industries to ensure that only the “approved” technologies (such as those in Table A of the BPDG Final Report) are being used on devices that may receive and output a digital television signal. These will be extremely fact-intensive inquiries involving a large number of device manufacturers. Second, the Commission could also be called upon to mediate disputes between competitors over whether a particular technology should be “approved” for Table A. In doing so, the Commission would be required to evaluate new and developing technologies for technical merit (presumably the technologies’ ability to prevent illegal copying). On the one hand, the Commission would face considerable pressure to move quickly so new technologies may be introduced into the marketplace as rapidly as possible. On the other hand, the Commission would have to manage this process carefully so as to safeguard the proprietary information, business plans, and competitive advantages of the various parties. Balancing these competing objectives would be an enormously difficult task.

Enforcement of the broadcast flag raises a host of other problems. In recent years, the Commission’s approach has been to encourage industry groups to manage these types of issues by consensus.<sup>9</sup> How would the Commission handle disputes if parties could not agree on what

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<sup>9</sup> Just recently, as one example, the Commission ordered the formation of the Administrative Council for Terminal Attachments to adopt and publish technical criteria for terminal equipment.

technologies should be included in Table A? Would companies seeking approval of “new” technologies have to test them in a lab and submit these test results to the Commission? Would the Commission accept “self certifications” on the technology’s capabilities by manufacturers? Would the Commission require a national database that listed all the equipment that has been approved for use? If so, who would pay for it and who would maintain it? What if a Table A “approved technology” is hacked or becomes obsolete – what process would govern removing such a technology from use?

These problems will only be exacerbated by the loose nature of the broadcast flag standard. The “standards” adopted by the BPDG are not typical standards. First, the BPDG did not follow the dispute resolution, procedural, and voting rules generally used by other standards-setting organizations.<sup>10</sup> Second, most technical standards may be satisfied by meeting objective criteria. Under the 5C/MPAA/CIG proposal for Table A, the approval process would be anything but objective. Under this proposal, a company seeking to add a new technology to Table A would be required to seek either the approval of various combinations of content providers and device manufacturers or meet subjective criteria that the technology is “at least as effective” as a Table A technology before it may reach the marketplace. BPDG Final Report,

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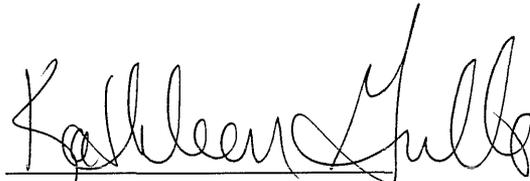
<sup>10</sup> The American National Standards Institute (“ANSI”) has outlined the basics of the standards-setting processes: decisions are reached through consensus among those affected; participation is open to all affected interests; balance is maintained among competing interests; the process is transparent and information on the process and progress is directly available; due process assures that all views will be considered and that appeals are possible; the process is flexible, allowing the use of directed methodologies to meet the needs of different technology and product sectors; the process is timely, purely administrative matters do not slow down the work; and standard activities are coherent, avoiding overlap or conflict. ANSI also outlines how successful standards processes yield the right results: standards are relevant, meeting agreed criteria and satisfying real needs by providing added value; standards are responsive to the real world, they use available, current technology and do not unnecessarily invalidate existing products or processes; and standards are performance based, specifying essential characteristics rather than detailed designs. *See* <http://www.ansi.org/public/nss.html>.

Tab F-1: 5C/MPAA/CIG Proposal Table A Criteria (April 25, 2002). Again, the burden would be on the Commission to manage this process. Would the Commission endorse a system by which a small subset of industries have the power to “sign off” on new technologies? Or would the Commission take on this function, a function far beyond its traditional mandate and fraught with difficulties?

**CONCLUSION**

The Commission should not mandate the use of the broadcast flag standard at this time but instead should consider this issue further consistent with these comments.

Respectfully submitted,



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THE VERIZON TELEPHONE COMPANIES

The Verizon telephone companies are the local exchange carriers affiliated with Verizon Communications Inc. These are:

Contel of the South, Inc. d/b/a Verizon Mid-States  
GTE Midwest Incorporated d/b/a Verizon Midwest  
GTE Southwest Incorporated d/b/a Verizon Southwest  
The Micronesian Telecommunications Corporation  
Verizon California Inc.  
Verizon Delaware Inc.  
Verizon Florida Inc.  
Verizon Hawaii Inc.  
Verizon Maryland Inc.  
Verizon New England Inc.  
Verizon New Jersey Inc.  
Verizon New York Inc.  
Verizon North Inc.  
Verizon Northwest Inc.  
Verizon Pennsylvania Inc.  
Verizon South Inc.  
Verizon Virginia Inc.  
Verizon Washington, DC Inc.  
Verizon West Coast Inc.  
Verizon West Virginia Inc.