

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of:)	
)	
Implementation of Section 304 of the Telecommunications Act of 1996)	CS Docket No. 97-80
)	
Commercial Availability of Navigation Devices)	
)	
Compatibility Between Cable Systems and Consumer Electronics Equipment)	PP Docket No. 00-67
)	

**COMMENTS OF THE NATIONAL CABLE &
TELECOMMUNICATIONS ASSOCIATION**

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The National Cable & Telecommunications Association (“NCTA”) hereby submits its comments in support of the Agreement on cable-consumer electronics compatibility reached by cable operators and television set manufacturers. In particular, we support prompt Commission action on the proposed FCC rules which the parties to the Agreement recommend for Commission adoption.

NCTA is the principal trade association of the cable television industry, representing operators serving over 90 percent of the nation’s cable customers. These companies also provide high-speed access to the Internet and other services. NCTA’s members also include more than 200 cable program networks, as well as companies that provide equipment and services to the industry.

INTRODUCTION AND SUMMARY

On December 19, 2002, eight cable companies representing more than 75% of cable subscribers in the United States, and fourteen consumer electronics (“CE”) manufacturers, representing the majority of HDTV sales in the United States (“the Signatories” or the “Parties”),

submitted a landmark agreement on cable-CE compatibility and related issues to the Commission. That MSO-CE Agreement (the “Agreement”), which was facilitated by NCTA and the Consumer Electronics Association (“CEA”), consists of a package of provisions which include (1) voluntary commitments by the Signatories, and (2) proposals for rules to be adopted by the Commission that, once adopted, would resolve other issues. The Commission promptly put out for comment the rules proposed in the Agreement and, by these comments, NCTA explains why adoption of those rules would be in the public interest and urges expeditious Commission action on them.

As the Signatories said in announcing the Agreement, it benefits consumers because it will ensure that the next generation of digital television sets will receive one-way cable services without the need for set-top converter boxes; enable consumers with HDTV sets to receive HDTV signals with full image quality and easily record digital content; allow for an array of new devices easily to be connected to the new HDTV sets; permit access to cable’s two-way services through digital connectors on high-definition digital TV sets; encourage manufacturers to speed the production of new sets and services for delivery to the market; and ensure that digital cable services will remain easy to access and use by consumers.

The Agreement will encourage the development and distribution of high-quality digital content. A key element of the Agreement relates to secure digital interfaces that protect consumers' home recording capabilities along with copyright owners' rights to secure their digital content. Cable operators have agreed to support recordable IEEE 1394 connections on high-definition set-top boxes. In turn, digital TV manufacturers have agreed to support FCC labeling regulations that specify Digital Visual Interface (DVI)/High-bandwidth Digital Content Protection (HDCP) (or HDMI/HDCP when available) display interfaces with copy protection

controls in future “cable ready” HDTV products. Moreover, the Agreement establishes “rules of the road” on home recording capabilities and proposes copy protection rules for digital content which are based on existing law and studio-CE agreements and which are applicable to all Multichannel Video Programming Distributors (“MVPDs”).

We appreciate the Commission’s efforts in putting the Agreement’s proposed rules out for comment promptly and we hope final Commission action can similarly be taken in an expeditious manner. As detailed herein, this Agreement, reached by industries that have had serious disagreements, is good for both industries and, most important, good for the consumer. It will spur the digital transition and it demonstrates that other industries can and should voluntarily work together to fulfill the goals of the digital TV transition.

The Agreement creates a path for rapid development of the next generation of digital TV products and relieves CE manufacturers of their concerns about delay in the process. It creates a strong presence for cable operators at consumer electronics retailers like Circuit City and Best Buy, spurring competition with DBS at the point of sale which can only benefit consumers. It standardizes and streamlines technology that enables devices to interoperate and allows those devices to be used by consumers on digital cable systems throughout the country. And it establishes a voluntary inter-industry process going forward to establish technical specifications for interactive digital devices. In addition, it establishes digital tools and guarantees to provide digital programming for home viewing and copying.

Finally, as for the one major issue put out for comment that was not addressed in the Agreement – down-resolution of high-value digital content delivered over component analog outputs – the cable industry’s primary interest is that any method used to close the “analog hole” should not put cable operators at a competitive disadvantage and should result in as much high

value content being made available to *all* MVPDs – and thus to their customers – as possible, consistent with the legitimate concerns of content providers. In this regard, NCTA is participating in the Analog Reconversion Discussion Group (“ARDG”) under the auspices of the Copy Protection Technical Working Group (“CPTWG”) to address the issue. Several different approaches, including watermarking technologies, CGMS/A, MPEG-21 (Moving Picture Experts Group), Multimedia Framework and Macrovision are being investigated by this group.

In this proceeding, to ensure competitive parity, the Parties have requested that the FCC apply its encoding rules – including whatever down-resolution rules it may adopt – to all MVPDs within its jurisdiction. As for the merits of down-resolution, the critical question to be answered is whether the consumer will have more – or fewer – choices of high-value digital content should down-resolution be prohibited, mandated or permitted. *If the FCC determines, as a number of content providers have suggested, that permitting down-resolution of high-value digital content delivered over analog outputs is the only means of assuring that such content will be made available to MVPDs and thus to consumers, NCTA supports adoption of rules achieving that result.*

I. THE AGREEMENT AND ACTION REQUESTED BY THE COMMISSION

A. The MSO-CE Agreement

As noted above, the Agreement between cable MSOs and consumer electronics manufacturers – facilitated by NCTA and CEA – consists of (1) a set of private industry agreements and (2) joint proposals for certain government rules. As the Signatories said in their letter transmitting the Agreement to the Commission: “When implemented, this agreement will provide the certainty the cable and CE industries need to build products and develop services to spur the digital transition, while preserving the ability of both industries to create innovative

products and services on a timely basis in the rapidly-changing digital environment.” As a result of the Agreement, consumers will be able to buy digital TVs (DTVs) that connect to digital cable without a set-top box, and enjoy easy access to high-definition television services offered by cable operators. As the Parties said in their joint press release announcing the Agreement, it “sets the stage for a national ‘plug-and-play’ standard between digital television products and digital cable systems, will help speed the transition from analog to digital television and establish much-needed marketplace, technical, and regulatory certainty for the cable and consumer electronics (CE) industries.”

Specifically, the joint recommendations to the FCC include: (1) a set of technical standards for cable systems and “cable-ready” (or the equivalent) DTV products (and testing procedures to assure compatibility); (2) a proposed regulatory framework for support of digital TV receivers, digital recorders, and other digital devices with secure interfaces on cable systems; and (3) “encoding rules” applicable to all MVPDs to help to resolve pending concerns about home recording and viewing. In addition, the Parties have agreed upon a security technology license to ensure that high-value content can be transferred securely in the home network by consumers. No FCC action is requested or required with respect to that license.

In particular, the Agreement addresses the following critical issues:

Effect on TV Products

- The Agreement allows set-top box functionality to be built into “one way” digital TV sets and other products (such as digital video recorders) so that they may receive scrambled premium programming without a cable box.
- A separate security card (know as a “Point-of-Deployment” or “POD” module which is similar to a smart card) supplied by the cable operator plugs into the DTV (or other device) to enable receipt of scrambled services.
- A set-top box is needed to access advanced interactive digital cable services such as video-on-demand or a cable operator’s enhanced program guide. (The Parties are

continuing discussions concerning DTV sets and other devices that can receive cable's advanced, two-way services without a cable box.)

- The Agreement addresses the need for DTV sets and set-top boxes to have secure digital connectors to permit copy-protected display and recording of high-value digital content. These digital connectors will “future-proof” the HDTV set so that advanced interactive services of a cable system can be delivered to the one-way HDTV set through connection to a set-top box.
- In particular, CE manufacturers will add the secure digital DVI/HDCP digital connector to POD-equipped high-definition DTV sets on an agreed-upon schedule. As of December 31, 2003, upon consumer request, MSOs will provide their customers with a high-definition set-top box with both a DVI connector and a secure 1394/5C digital connector, to support DTV sets and home recorders which have only the 1394 digital connector. As of July 1, 2005, MSOs will include both a DVI or HDMI connector and a 1394/5C connector on all high definition set-top boxes acquired for distribution to customers.

Home Recording Issues

- Devices built to the proposed standards must recognize and respect the copy-control signals needed to protect high-value digital content as such content passes through the digital connectors.
- The Parties propose that the FCC adopt a set of “encoding rules” (consumer home recording capabilities) that apply to all MVPDs (such as cable and DBS). The rules are modeled on standards previously adopted by Congress and used in private licensing agreements between studios and consumer electronics companies. The Parties also agree to jointly request that Congress apply such rules to Internet delivery systems, DSL and similar competitive technologies. These rules provide that:
 - Subscribers may make at least one copy for their private and personal use of any digital program sold by monthly subscription.
 - Programs sold by the one (PPV, VOD and SVOD) may be marked as copy never, but cable subscribers may pause or store them (on PVRs) for 90 minutes (or longer, if agreed to by the program provider).
 - These devices may not permit content to flow only through a particular type of output. (This prohibition on “selectable output controls” will be effective when the FCC makes the restriction applicable to all MVPDs.)
 - Free over-the-air broadcast signals may be copied freely, and may not be reduced in resolution (“down-res’d”) when output from unprotected high-definition analog ports.

- The proposed rules are neutral on down-resolution of all other content, leaving it to the FCC to decide how to address the “analog hole” through which high-quality high-value programming passes in unprotected format.

Support for Products

- Digital cable systems with an activated channel capacity of 750 MHz or greater shall meet agreed-upon technical standards in order to assure delivery of digital services to these POD-enabled devices. These standards will be embodied in FCC rules. All digital cable systems will comply with other complementary technical standards, including support of retail devices intended for use with operator-supplied PODs.

DFAST License

- The patent license for the POD-Host interface will be provided for use in “basic” (one-way) products with fewer conditions than are required from the current CableLabs’ POD-Host Interface License Agreement (“PHILA”).
- The license does not include detailed receiver or other specifications, relying instead on general warranties that the devices will not technically disrupt, impede or impair delivery of services to cable subscribers, promote theft or cause harm to the network or to the POD.

Testing and Certification

- These products will be tested to assure that TVs can tune and display scrambled digital services. The tests will also assure that all POD-enabled products will not technically disrupt, impede or impair delivery of services to cable subscribers, promote theft or cause harm to the network or to the POD. The testing and certification process has been streamlined, utilizing a consensus testing process and CableLabs’ participation while providing a path towards self-certification by manufacturers.
- The POD may be revoked for products that do not adhere to the compliance and robustness rules as specified in the patent license governing the POD interface.

Consumer Information

- Voluntary labels will describe and distinguish between one-way products and those products that also have a secure DVI or 1394 connector. TVs may not be marketed as digital cable ready (or words that have the same effect) unless they include the DVI ports indicated above, tune channels in a manner consistent with the output of the cable system, and respond to EAS signals. Post-sales material will inform the customer of equipment capability.

B. Requested Commission Action

The Parties have recommended draft regulations that would provide that digital cable systems with 750 MHz or greater activated channel capacity be equipped to support the operation of cable compatible DTV and HDTV products. Under the proposed rules, cable operators must support, in such digital cable systems, devices with a POD-Host Interface built to SCTE standards, supply compatible separate security POD modules to customers, and upon their request, HD set-top boxes with IEEE 1394 digital connectors.

The proposed regulations also provide that products, including DTV receivers that are labeled or marketed as able to connect directly to digital cable systems meet certain criteria. In particular, those HDTVs that bear the specified labels, or are otherwise marketed as “cable ready,” “cable compatible,” or as accepting a POD, or otherwise convey the impression that the device is fully compatible with digital cable service, must include DVI/HDCP or HDMI/HDCP secure digital connectors on a phased-in basis. Under the proposed rules, cable operators and CE manufacturers will have a number of obligations, including the following:

Cable Operator Obligations:

- No later than July 1, 2004, cable systems with an activated channel capacity of 750 MHz or greater shall meet agreed-upon standards (subsets of existing SCTE 40, 65, 54, with some adjustments, plus the February 2000 NCTA/CEA PSIP agreement) designed for providing service to one-way televisions.
- All digital cable systems shall comply with SCTE 28 and 41.
- After July 1, 2004, MSOs shall provide PODs to customers coincident to manufacturers’ product roll-outs, in sufficient quantity and convenience to ensure access for consumers.
- Effective December 31, 2003, upon request of a customer, MSOs must replace any leased HD set-top box, which does not include a functional 1394 interface, with one that includes a functional 1394 interface or upgrade the customer's set-top box by download or other means to ensure that the 1394 interface is functional.

- Effective July 1, 2005, MSOs must include both a DVI (or HDMI) interface and a 1394 interface on all high-definition set-top boxes acquired by a cable operator for distribution to customers.
- The set-top box will be controllable by a TV or other devices equipped with a 1394 connector for the tune function, mute function, restore volume function, power on, power off, and status inquiry.¹

CE Manufacturer Obligations:

- TVs may not be marketed as digital cable ready, cable compatible or the equivalent, unless they:
 - include a POD-Host Interface and, if HD sets, DVI connectors on a phased-in schedule
 - tune channels in a manner consistent with the output of the cable system
 - respond to EAS signals
- Post-sales material will inform the customer, in language agreed to by the Parties, that a POD is needed to receive scrambled digital programming and a set-top box is needed to access advanced interactive digital cable services such as video-on-demand, a cable operator’s enhanced program guide, and data enhanced television service.
- A manufacturer’s first TV product will be submitted for interoperability testing to CableLabs (or an appropriately approved third party laboratory). The manufacturer must self-certify to passing an agreed-upon test suite (to be developed by cable and CE representatives) and submit the results to CableLabs. Certain “critical” tests and tests for harm to the network must be rerun and resubmitted until passed. Later products are subject only to self-certification. If a manufacturer’s first product is not a TV, it must submit proof of no harm to the network.

The Parties are also recommending draft regulations related to copy protection issues, including “encoding rules.” These proposed consensus encoding rules are (1) based upon and generally consistent with the principles and policies of Section 1201(k) of the Digital

¹ Separate and apart from the proposed FCC rules, under the Agreement, the operators will provide manufacturers with head-end configuration information and hardware profiles used in head-ends. The MSOs will use commercially reasonable efforts to facilitate the purchase of head-end equipment by CE manufacturers or make CableLabs or MSO testing facilities available on fair, reasonable, and non-discriminatory terms. In addition, operators and CE manufacturers will meet at least annually to discuss technology sunsets, and may submit recommendations to the FCC as part of the bi-annual review process, or earlier review.

Millennium Copyright Act of 1998 and the DTCP/5C license; and (2) contain a process providing for the launch of new business models, subject to review by the FCC.

The Parties have agreed that rules for encoding content that are substantially similar to those embodied in the 5C Agreement are acceptable to them for current business models. However, the consensus encoding rules that the Parties have asked the FCC to adopt include a process that is different from the 5C process for addressing new and as-yet-undefined business models and for changing the encoding rules for new services within defined business models because cable operators, among others, are not parties to the 5C change process. As a result, a new change method, and evaluation criteria for updating encoding rules, are described in the encoding rules proposal to the FCC.

In particular, the proposed encoding rules include the following provisions:

- Any digital program sold by monthly subscription (e.g., premium channels like HBO and basic cable nets) may not be marked more strictly than copy one generation. For example, cable subscribers may make at least one single copy for their private and personal use of any digital program sold by monthly subscription.
- Programs sold by the one (PPV, VOD and SVOD) may be restricted as copy never, but cable subscribers may pause or store them (on PVRs) for 90 minutes (or longer if the programmer agrees).
- Free over-the-air broadcasts may be copied freely, and may not be reduced in resolution (“down-res’d”).
- The rules are neutral on down-resing of all other content, leaving it to the FCC to decide how to address the “analog hole.”
- These rules will not apply to cable operator (or affiliate) use of a cable modem or the Internet for content distribution.
- These rules will apply to all MVPDs.
- Cable may launch any service under any or no encoding rules on a bona fide trial basis without notice.

- Cable may apply different encoding rules for permanent new business models, but is subject to challenge on complaint to the FCC.
 - If a new service falls outside of the current business models, notice must be given and the FCC may decide (after the fact) whether the encoding rules applied are in the public interest.
 - If a new service falls inside the current business models, different encoding rules may be applied only with advance approval from the FCC that the proposal is in the public interest.
 - Any dispute is resolved at the FCC, rather than in arbitration between studios and the 5C licensing authority, DTLA, as is the structure under 5C today.

II. THE JOINT RECOMMENDED RULES ARE IN THE PUBLIC INTEREST AND SHOULD BE ADOPTED AS PROPOSED BY THE PARTIES

A. The Agreement and the Proposed Rules Which are an Integral Part of the Agreement Will Benefit Consumers

The Agreement will benefit consumers in many ways. Most obviously, it will insure that the next generation of digital television sets will receive one-way cable services (e.g., basic and premium cable channels) without the need for set-top boxes. It will also enable consumers to receive HDTV signals with full image quality and easily record digital content, and it will allow for an array of new consumer-friendly digital devices easily to be connected to the new HDTV sets. The Agreement also covers digital recorders that can record premium digital cable services without a set-top box, and other one-way devices with POD slots.

While most terms of the Agreement were addressed to one-way digital products, it also will permit access to cable's two-way services through digital connectors on high-definition digital TV sets. Those "one-way" sets will therefore be "future-proofed," permitting consumer access to two-way services as they are developed through use of the required digital connector. With the certainty the Agreement brings, it should encourage manufacturers to speed the

production of new digital sets and services for delivery to the market. The Agreement will ensure that digital cable services will remain easy to access and use by consumers.

The Agreement provides for consumer information and education with regard to new DTV products. Post-sales material will inform the customer of equipment capability. As a result, when consumers purchase DTV products built under the Agreement's provisions, they will have available to them materials describing the capabilities and functionalities of that equipment. In addition, the consumer electronics industry, on a voluntary basis, will use labels to describe and distinguish between one-way, non-interactive products and those products that also have a secure DVI or 1394 port. DTV receivers may not be marketed as "digital cable ready" unless they include the DVI ports indicated above, tune channels in a manner consistent with the output of the cable system, and respond to Emergency Alert System (EAS) signals.

B. The Agreement Will Encourage the Development and Distribution of High Quality Digital Content

By proposing that the Commission adopt and enforce "encoding rules" on all multichannel video programming distributors, the Parties hope to unleash a flood of new high value content – not currently sent to retail devices – once content providers are assured that their valuable content is appropriately protected against unauthorized copying. These provisions should not be read as restrictions on content available to consumers because content providers have indicated that, without them, the high value content to which they are applicable would never be made available to MVPDs for distribution to consumers.

The Commission has recognized the legitimate concerns content providers have over unauthorized copying of high-value digital content and why any rules regarding such content may differ from the "rules" governing the analog world. The Parties – who had been in sharp

disagreement over how to protect high value content while permitting consumers to watch and record programming as they had done with analog programming – have attempted to address these concerns in the proposed encoding rules. Those rules also assure parity among MVPDs with respect to copy protection requirements so that neither cable nor DBS customers would be disadvantaged if their providers could not assure content providers of their ability to protect high value content. The Agreement’s recommended copy protection rules for digital content are based on existing law and studio-CE agreements.

But encoding rules are just one element of the Agreement which will assure the increased availability of high-value digital content. In addition, under the Agreement, the cable and CE industries agree to take a number of actions that relate to secure digital interfaces that protect consumers' home recording capabilities along with copyright owners' rights to secure their digital content. In particular, cable operators have agreed to support recordable IEEE 1394 connections on high-definition set-top boxes. In turn, digital TV manufacturers have agreed to support FCC labeling regulations that specify Digital Visual Interface (DVI)/High-bandwidth Digital Content Protection (HDCP) (or HDMI/HDCP when available) display interfaces with copy protection controls in future cable-ready HDTV products.

C. The Agreement Will Benefit Both The Cable And Consumer Electronics Industries in their Efforts to Provide Innovative Digital Services And Products to Consumers

Both the cable and CE industries will benefit from the Agreement as it will bring certainty and stability to the marketplace. In particular, provisions specifying the required digital inputs and connectors on the new HDTV sets and cable set-top boxes will assure each industry – and their customers – that they will have the opportunity to access all of cable’s services – both one-way and two-way and will be able to record them as otherwise permitted by law. In

addition, the Agreement standardizes and streamlines technical processes to enable devices to inter-operate with each other and to allow those devices to be used by consumers on cable systems throughout the country.

It also creates a self-certification process for manufacturers to ensure compatibility between digital television products and digital cable systems and ensures cooperation between the two industries on a number of research and development fronts. For example, CE manufacturers will be provided with head-end configuration information and hardware profiles used in head-ends. Cable operators will assist with access to headend equipment for use by CE manufacturers for their own research and development efforts. Similarly, it establishes a path for a joint process to develop technical specifications for interactive services. That joint process should relieve concerns over delays in achieving interoperability of the next generation of DTV sets with cable systems.

Finally, it helps cable operators establish a presence in retail stores to compete with DBS providers who have long had that outlet to themselves. That competition cannot help but benefit consumers as well as they may compare and contrast competitive offerings at the point-of-sale of DTV products.

III. THE AGREEMENT PRESENTS A BALANCED APPROACH AGREED TO BY THE PARTIES MOST DIRECTLY AFFECTED WHICH MAKE THE PROPOSED RULES – A KEY ELEMENT IN THE PACKAGE – SUITABLE FOR ADOPTION WITHOUT AMENDMENT

Thus far, we have described the benefits of the end-result of adopting such rules as have been proposed. But the proposed rules themselves are the result of intense negotiations among

competing interests. They represent a delicate balance that, for a number of reasons, warrant adoption as proposed.

First, the rules as proposed were negotiated by the immediately affected parties, not mandated by the government. The proposed technical rules prescribe very specific technical standards that must be met by cable systems, and very specific technological features that must be met by CE receivers that are marketed with PODs. The imposition of “technological mandates” is often a source of controversy. But, in this case, the precise standards have been negotiated by the affected parties, and only then submitted for adoption by government regulation. “Mandating” negotiated standards avoids the hazards that might otherwise arise from governmentally-imposed technological mandates.

Second, in many cases, negotiated standards may simply be incorporated in private agreements, which, by their nature, can be more rapidly modified with changing conditions than can regulations. In this case, government codification is required in order to achieve parity among MVPDs. Consider the issue that had created the most controversy prior to this Agreement: CE manufacturers had objected to the requirements in the CableLabs’ PHILA that POD-enabled devices respect signals for selectable output control and down-resolution of “copy-never” HD content transmitted over unprotected component analog outputs. They also objected to incorporating copy-control capabilities in their recording devices unless there were sufficient constraints on the use of those capabilities so that consumers would feel confident in the future utility of the devices they bought. Cable operators were equally adamant that they needed such tools in order to match the capabilities built into DBS set-top boxes and business plans. Operators could not unilaterally abandon them without disadvantaging themselves in competing against DBS for program acquisition. By applying the proposed rules to all MVPDs, parity is

assured, and issues which have been pending before the Commission and debated in Congress for years will be resolved.

Third, the rules also strike a balance in the running debate over home recording. Program providers have been quite clear in warning that copy-controls need to be employed in order to induce them to supply high-value digital programming across mass media distribution channels. The national debate has been quite polarizing, ranging at the extremes between those who propose licensing every use of digital home entertainment and those who propose that any digital content that enters the home may be used, altered, and redistributed by the consumer without limits. The problem has been to strike a balance that provided enough protections to program owners to promote their dissemination of high-value content through digital networks.

For example, consumers are unlikely to be able to enjoy new motion pictures for home viewing over cable while the movies are in theaters if the lack of copy controls prevents cable operators from securing the rights to those movies in the first place. The proposed rules follow the model set by Congress in Section 1201(k) of the DMCA, setting *permissible* graduated limits on the use of copy-control tools, ranging from the most restrictive (copy-never) for those works in the earliest release window (e.g., VOD) to the least restrictive (copy-freely) for free, over-the-air broadcasts. The bulk of content carried by MVPDs – services sold by monthly subscription – carry a guaranty that they will be copiable for at least “one generation,” meaning that the original can be copied not just once, but from the original onto every other compliant device in the home. Even copy-never content may be paused for at least 90 minutes on PVRs. It is important to note that no content is required to be marked at these maximum levels: there remains room for marketplace negotiations, so that MVPDs may bargain in their affiliation agreements for lesser restrictions.

These rules are well within the FCC’s jurisdiction – vested in it by various sections of the Communications Act, including (1) the “compatibility” labeling and commercial availability requirements of Section 624A, (2) the MVPD “navigation device” requirements of Section 629, and (3) the digital transition requirements of Section 336(b)(4) and (5). The Courts have already held that FCC “exclusivity” rules do not run afoul of copyright jurisdiction.² *The proposed rules do not alter the rules for what may be copyrighted, or for how long.* They merely require recognition of DMCA-protected technological measures by those MVPDs within the FCC’s jurisdiction.

Fourth, cable operators who rely upon secure outputs and retail devices to deliver cable services, and whose systems interoperate with devices that recognize copy control signals, have to have some assurance that these devices actually work. Otherwise, the consumer will not be able to tune to the services ordered, nor will the cable operator be able to assure program suppliers that their networks are sufficiently secure to meet the requirements of affiliation agreements. The certification requirements proposed in the CableLabs PHILA were modeled on certification regimes common across other technology platforms. However, CE manufacturers expressed great concern over delays they might introduce in bringing product to market.

The set of proposed rules strikes a balance for one-way products: for such products (which by definition are not integrated with head-end functions, and do not directly receive VOD copy-never programming without a set-top box), the Parties were able to relax the certification process. The first TV product must be certified by CableLabs or an appropriately qualified third party testing lab. Thereafter, the path is laid out for self-certification.

² United Video v. FCC, 890 F.2d 1173 (D.C. Cir. 1989).

Fifth, one of the most hazardous aspects of technological mandates is the risk of inadvertently locking current technology into legal rules, and thereby freezing technological innovation. The proposed rules are carefully structured to avoid this hazard:

- Models. The encoding rules set forth rules developed for current business models, as of December, 2002. But they do not foreclose experiments or commercial launches of new ways to do business. Any MVPD may launch a bona fide experiment using different rules. If it wishes to launch a permanent new model of business, it may do so, but there is provision for FCC review after the fact if any resulting concerns cannot be resolved. There is even a means for adjusting encoding rules on current business models. However, the proponent of such a change must show in advance that the public interest would be served, after accounting for the availability of content in earlier release windows or the creation of original programming, the effect on innovation, how the service differs from current services, reasonable and customary expectations of consumers with respect to home recording, and similar interests.
- Connectors. The rules start with reciprocal industry support for the two current secure digital connectors: 1394/DTCP and DVI/HDCP. But there is no constraint on developing new connectors and new security. In fact, there are two paths for rapid acceptance of new secure connectors. CableLabs may validate a proposal, after which it may be used by all CE manufacturers. If CableLabs rejects the proposal, there is an automatic right of review at the FCC. Alternatively, if four studios approve a new connector, it is automatically approved. This provides two paths for rapid innovation, and assures that no one party will be a barrier to innovation.
- Security. The same paths exist for the development of new security protocols.

Sixth, although the proposed rules do ask for the adoption of federal regulations, this is actually a relatively small part of a comprehensive agreement, and makes sparing use of FCC resources. The mutual commitments among the Parties are spelled out in detail in the comprehensive Memorandum of Understanding (“MOU”) submitted to the Commission. That MOU covers not only recommendations for FCC rules to implement parts of the Agreement, but also includes voluntary, private commitments between the two sides. Moreover, the MOU includes a commitment and a schedule for future meetings to continue to develop cooperative relationships between the two industries, in particular with respect to developing interactive

(“two-way”) digital products capable of connection to cable systems without a set-top box.

Three joint cable-CE meetings have already been held to discuss these issues.

Similarly, the DFAST patent license for the POD-Host interface and the related compliance and robustness rules, are handled through private licensing (similar to the way the “5C” license is handled). The only possible involvement of the FCC is to entertain an appeal from certain discrete changes in compliance and robustness rules, should the internal procedures break down.

In the same vein, CableLabs serves as the forum for testing and approving new connectors and new security. The FCC serves only as a backstop should CableLabs deny a new connector and the applicant believes its technical reasons for doing so are wrong.

And, with respect to the encoding rules, if the Commission adopts the proposed rules it only becomes involved again if the internal consultation and dispute resolution process over new business models breaks down and it is asked to resolve such disputes. The standards for evaluation require the kind of balancing of interests for which the FCC is especially suited. The interests include the benefit to consumers of the service, including, but not limited to, the availability of content in earlier release windows, more favorable terms, the effect on innovation or original programming; the ways in which the service differs from current services offered by MVPDs; and the effect on reasonable and customary expectations of consumers with respect to home recording. Having the backstop of a neutral forum will help drive resolution outside of FCC processes.

Finally, the approach the parties have taken to this Agreement is a practical one and Commission endorsement of the joint recommendations may well encourage other industries to take similar steps. There is always a great temptation to try to solve all issues affecting the

digital transition in one bite. The negotiations leading to these proposed rules demonstrate that issues this complex can better be handled in manageable steps.

Accordingly, the Parties have approached cable-DTV compatibility issues in two steps: the first step is one-way devices. These can access one-way channels that largely use standard channelization schemes, that do not access the upstream path, and that do not have to work with the many different non-standardized VOD and EPG guide technologies now in use. The products covered are one-way only. They do not include a cable modem or IP delivery. These devices can still offer guide information: the Agreement provides that cable operators will deliver text labels and PSIP, which together will inform the consumer of the channels they are on and other details provided, for example, by HD digital broadcasters about the program being viewed. CE manufacturers are also free to provide other guide systems, as has Tivo. Of course, analog scroll-guides will also flow through on analog channels.

The Parties are currently working on the technically more difficult issues involved with two-way, interactive devices. In that regard, they are expending as much energy and resources as they did with the one-way Agreement with several meetings held already involving numerous executives from both cable and CE companies. For example, it has already been agreed that each operator will provide its full EPG through the OpenCable Application Platform (“OCAP”).³

Likewise, the parties approached the actual architecture of cable systems realistically. The rules propose one set of standards (including requirements to support POD-enabled devices)

³ The cable industry, through CableLabs, voluntarily developed the OpenCable Application Platform (“OCAP”) specification. The OCAP “middleware” permits the downloading and execution of applications, such as program guides, to any OCAP-enabled devices by any cable system supporting OCAP. In addition to enhancing the portability of set-top boxes and DTV sets, OCAP supports the nationwide portability of applications on such devices. Because OCAP is based upon an existing European specification (MHP), tremendous economies of scale and scope can be achieved.

for all digital cable systems,⁴ and a more aggressive set for systems which have already been rebuilt to 750 MHz.⁵ This recognizes that it is unrealistic to expect systems that have not yet been rebuilt to meet all of the requirements imposed on those that have been – but that it is realistic to launch products targeted at the large population served by 750 MHz systems. Outside of the proposed rules, the parties have agreed to use Go2Broadband – a locator service created by CableLabs and used by cable operators, retailers and others to determine whether cable’s broadband and HDTV services are available in a particular consumer’s area – to allow consumers and store clerks to determine exactly which systems have been rebuilt.

Finally, the encoding rules involve two steps as well. First, the FCC has been asked to adopt certain encoding rules applicable to all MVPDs over which it has jurisdiction. At the same time, the Parties have agreed to seek legislation permitting the FCC to apply such rules to other competing technologies over which the FCC might not have jurisdiction, such as Internet delivery systems.⁶

4 For example, all digital cable systems will comply with SCTE 28 and 41 – standards which provide support of retail devices intended for use with operator-supplied PODs. After July 1, 2004, MSOs shall provide PODs to consumers coincident to manufacturers product roll-outs, in sufficient quantity and convenience to ensure access for consumers.

5 Digital cable systems with an activated channel capacity of 750 MHz or greater shall meet agreed-upon technical standards (subsets of SCTE standards, with some adjustments) in order to assure delivery of digital services to POD-enabled devices. No later than July 1, 2004, cable systems with an activated channel capacity of 750 MHz or greater shall meet agreed-upon standards (subsets of existing SCTE 40, 65, 54, with some adjustments, plus the Feb. 2000 NCTA/CEA PSIP agreement) designed for providing service to one-way televisions.

6 Similarly, Section 2.9 of the MOU provides a “window” during which time the Parties agree not to seek a government solution to “two-way” issues until they have exhausted private efforts to do so. As proposed, the DFAST license may be used only to develop and build one-way devices, the so-called “field-of-use” restriction. That restriction remains in place until December 31, 2005, and thereafter, “unless appropriate regulations and legislation are then in effect that subject all MVPDs (including DBS), telephone and DSL providers, Internet and competing technologies for the distribution of video to the same encoding rules (including rules applicable to the use of selectable output controls and down-resolution).” However, if the Parties are unable to reach agreement on the requirements for Advanced Interactive (two-way) Digital Cable Products by December 31, 2005, then any Party may pursue independent solutions with respect to the field-of-use restriction of the DFAST license from the FCC or Congress.

In short, the Parties did not try to resolve all of the thorny problems of the DTV transition in one fell swoop, but are committed to playing a continuing role in addressing issues over which they have some control. It is not only an issue of trying to manage resources, although that is important in itself because a significant amount of time and energy will need to be expended by all sides in implementing the one-way Agreement. It is also a recognition that the one-way Agreement is a building block for future agreements and the experience to be gained from implementing the first Agreement will lead inexorably to benefits in reaching the second.

For the above reasons, the Parties have compelling reasons to consider the Agreement they reached a “package” – or as the MOU called it, “a system that necessarily relies on all of its parts to provide consumers with solutions to cable and CE issues affecting digital television.” The Parties labored long and hard, oftentimes compromising on long and deeply-held positions, to reach a comprehensive agreement that they could present to the Commission. While only part of the Agreement requires Commission action, those key technical and copy protection provisions are integral to the commitment the Parties have made to each other with respect to other provisions that do not need FCC endorsement. While the Commission has the power to modify, amend or delete some of the proposed regulations, we urge the Commission to be judicious in so doing given the history and context of the issues the Parties have addressed and presented for resolution.

IV. THE OPEN ISSUE: DOWN-RESOLUTION AND THE ANALOG HOLE

There is one significant issue which the proposed rules do not address but which requires FCC resolution: Under the proposed rules, unencrypted, free, over-the-air broadcast programming may not be subject to down-resolution, but the Parties have left it to the

Commission to determine whether or not to prohibit, permit or require the down-resolution of other high-value digital content delivered over unprotected component analog outputs.

The proposed rules provide a detailed path for the deployment and use of digital connectors which have been secured and equipped to respect copy control signals. They also provide for use of standard definition analog connectors that respect Macrovision – essentially relying upon Macrovision to instruct devices not to copy copy-never material, but relying upon the natural degradation of analog copies to limit the dissemination of unrestricted standard definition analog programming.

However, while the Agreement permits the use of component analog outputs with unencrypted, free, over-the-air broadcast programming, the Agreement does not resolve their use for output of non-broadcast high-value programming for which there is no generally accepted or deployed security mechanism. Over the past few years, consumers have purchased several million high-resolution television displays that use component analog connectors to pass digital programming to devices with analog inputs. Program owners have had legitimate concerns over the potential for taking such programming in analog form, redigitizing such programming and making it available in digital form for unlimited copying and redistribution – the so-called “analog hole.” As a result, program owners have inserted in the “5C” patent license a requirement that copy-restricted (copy-never or copy one generation) programming over component analog outputs be reduced in resolution.

At the urging of program owners, a similar but narrower requirement was included in the CableLabs’ PHILA – one that would require that devices built under PHILA include the technical means to reduce the resolution of copy-never programming over component analog outputs. Proponents of such a resolution reduction requirement have offered demonstrations and

argued that the effect of down-resolution is imperceptible on current displays; that it was intended as a lesser restriction than turning the analog port off; and that it was designed to provide incentives for consumers and CE manufacturers to migrate away from analog ports to secure digital ports, from which all programming could flow in full resolution.

The counter-argument made by CE manufacturers and others was that permitting down-resolution would disenfranchise early adopters of high-resolution CE displays (those without digital inputs) and would work at cross-purposes with the goal of deploying more HD programming. Because of this dispute which has taken place at the Commission and in Congress, and because it was thought that the Commission was in the best position to hear from all affected interests and determine whether (and under what circumstances) prohibiting, requiring or permitting down-resolution of high value content was in the public interest, the proposed encoding rules (with the exception of unencrypted broadcast television) do not address down-resolution of programming.⁷

The issue is harder to resolve for high-value non-broadcast digital content than it is for broadcast content that is free, unencrypted and delivered over-the-air. Cable operators are dependent upon program suppliers for delivery of high value content that their customers want and expect. If program suppliers are not comfortable with a solution to the analog hole, then cable operators' ability to attract high-value digital programming is in jeopardy. Several solutions have been suggested:

7 For broadcasting, the parties reached agreement: unencrypted over-the-air broadcasting is free of copy controls and is not subject to down-resolution. This provides a clear path for broadcasters to use digital spectrum for value-added HD broadcasting free through to the viewer, with a reciprocal assurance to consumers that they may record and have full home use of over-the-air digital broadcasts, as they do in analog. This HD programming is the very type of programming Chairman Powell described in his April, 2002 DTV Transition Plan as that which "gives consumers something significantly different than what they currently receive in analog." On a related matter, the Agreement does not deal with the broadcast flag and efforts to prevent the unauthorized redistribution

- At one extreme is permitting unrestricted outputs with no sunset on the technology. Program suppliers have expressed concerns that such a “solution” provides a perpetual bypass of digital copy-protections such as those that are provided for in the Agreement.
- Another solution is to turn off unrestricted HD component analog ports when a copy-never program is detected. This would require the use of selectable output control, and, for an interim period, prevent the recording of certain marked programs—much as recorders will not record a program from a standard definition analog connector when marked with Macrovision. In theory, this would create incentives for consumers and CE manufacturers to migrate rapidly to devices with protected digital ports. However, under the Agreement, the Parties have agreed that all MVPDs should be prohibited from using selectable output controls.
- A third solution is to reduce the resolution of copy-never programming over component analog outputs. If demonstrations prove any difference in such content to be imperceptible for viewers on current displays, this solution would not penalize early adopters and would promote the distribution of high value content.
- Another solution may be the development and implementation of a consensus watermark. The DFAST license’s compliance rules make provision for such a watermark, but the affected industries have not yet come to consensus on the actual security of such a solution.
- One other approach that has been suggested is the development of a new technical solution for resolution of the analog hole issue. There are several approaches that have been proposed, such as the use of Copy Guard Management System-Analog (CGMS-A), but affected parties have not yet come to consensus on the actual security of such a solution.
- A final option is to outlaw high definition component analog inputs on TV sets by a date certain. The House Telecommunications and Internet Subcommittee Staff Discussion Draft included a similar suggestion.

The Commission and all affected parties need to explore these and other options, in order to solve this problem. MVPDs need to provide their customers with the high value content they want and expect as well as the capability to make appropriate use of such content. Yet, in the

of high-value broadcast programming over the Internet. That issue is the subject of a pending Commission proceeding.

end, MVPDs cannot offer distribution of such high-value digital content to consumers unless program providers have confidence in the security of those distribution platforms.

Cable operators understand the very real concerns of the content community with respect to the analog hole issue and strongly support the concept of working to close the analog hole. In this regard, NCTA is participating in the Analog Reconversion Discussion Group (“ARDG”) under the auspices of the Copy Protection Technical Working Group (“CPTWG”) to address the issue. Several different approaches, including watermarking technologies, CGMS/A, MPEG-21 (Moving Picture Experts Group), Multimedia Framework and Macrovision are being investigated by this group. Reference architectures as well as a representative set of rights that would persist through analog reconversion are currently under discussion. Further, historical work that had been accomplished in the field of content protection is being fully vetted by this group as a means to fast-track the solution development process.

The cable industry’s primary interest is that any method used to close the analog hole should not put cable operators at a competitive disadvantage and should result in as much high value content being made available to MVPDs – and thus to their customers – as possible consistent with the legitimate concerns of content providers. To ensure competitive parity, the Parties have requested that the FCC apply its encoding rules – including whatever down-resolution rules it may adopt – to all MVPDs within its jurisdiction. As for the merits of down-resolution, the critical question to be answered is whether the consumer will have more – or fewer – choices of high-value digital content should down-resolution be prohibited, required or permitted. NCTA has no reason to doubt the content providers’ assertions that they will not make high-value digital content available to MVPDs in the absence of down-resolution capability. *If the FCC determines, as those content providers have suggested, that permitting*

down-resolution of high value digital content delivered over analog outputs is the only means of assuring that such content will be made available to MVPDs and thus to consumers, NCTA supports adoption of rules achieving that result.

The issue of whether to permit down-resolution to address analog hole concerns is not an easy one to resolve. Affected interests have been grappling with it for years. But the time has arrived for resolution. We look forward to examining the comments on this issue and responding as appropriate. And, in any event, we believe that all parties concerned would benefit from a rapid resolution of this issue under FCC auspices.

CONCLUSION

For the reasons stated above, NCTA urges the Commission to adopt without change the rules proposed by cable companies and CE manufacturers in their Agreement.

Respectfully submitted,

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