

**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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TABLE OF CONTENTS

INTRODUCTION AND SUMMARY 1

I. THE OPENCABLE PLATFORM PROPOSAL IS THE ONLY SOLUTION CAPABLE OF BRINGING PRODUCT TO MARKET ANYWHERE NEAR THE COMMISSION’S PROPOSED TIMEFRAME 7

A. The Benefits of the OpenCable Technology 8

B. Key Elements of the November 2005 OpenCable Platform Proposal 13

1. OpenCable Platform Middleware Specifications 14

2. OpenCable Platform Hardware Specifications 16

3. Tools to Protect High-Value Content 18

4. Consumer Education 19

5. Licensing 21

6. Testing and Self-Verification 22

C. The OpenCable Technology Is Cleared for Intellectual Property 23

D. The OpenCable Technology, Agreed to by the CE Industry in the 2002 One-Way Plug-and-Play Agreement, Has Been Endorsed by Leading CE and IT Companies 24

E. The Technology is Bringing Products to Market Now 26

F. Cable Operators Have Committed to Supporting OpenCable Platform-Enabled Devices 27

G. The Proposed Regulations Are Based on the One-Way Rules Previously Adopted by the Commission .. 29

H. The OpenCable Platform Solution Should Be Adopted by the Commission 30

II. SWITCHED DIGITAL VIDEO MODIFICATIONS 32

III. THE CEA PROPOSAL SHOULD BE REJECTED ON POLICY GROUNDS 34

A. The CEA Proposal Would Create Consumer Confusion Over the Services Their “Cable Ready” DTV Sets Would Access 36

B. The CEA Proposal for “Standardization” Would Paralyze Innovation in the Rollout of New Cable Services and Technologies and Impose Substantial Costs on Cable Customers and Cable Operators Alike 39

1. The CEA Proposal Ignores the Realities and Delays of Standards Processes 39

2. CEA Proposes to Freeze Cable Offerings Until Standards Are Established 41

3. The CEA Proposal Ignores the Realities of Intellectual Property Rights 43

4. The CEA Proposal Would Delay Every Subsequent Advance in Cable Services 45

C. The CEA Proposal Requires Numerous New Inventions 46

1. New VOD Protocol 46

2. New Program Guide Protocols 49

3. New Impulse Pay-Per-View (IPPV) 50

4. No Switched Digital Video 50

5. New M-Card 51

6. New Leased Cable Set-Tops 52

D. The CEA Proposal Cannot be Achieved in Time to Further the DTV Transition 53

E. The CEA Proposal Minimizes Content Protections 54

1. The CEA Proposal Opens Content to Indiscriminate and Unauthorized Redistribution 54

2. The CEA Proposal Has No Output Controls for the Protection of High-Value Content 57

3.	The CEA Proposal Fails to Carry Programmers' Interactive Enhancements to Programming.....	59
4.	The CEA Proposal Undermines the Delivery of Video-on-Demand.	59
5.	The CEA Proposal Would Weaken and Delay DCAS Security.....	60
F.	<i>The CEA Proposal for Device Testing is Inadequate</i>	61
1.	New and Inadequate Test Suite.....	61
2.	Self-Certification of Devices With Upstream Transmitters.	61
3.	Self-Testing on Live Cable Plant.	62
G.	<i>The CEA Proposal Requires Cable to Subsidize CE Products</i>	63
1.	Free Redesign of Cable Network and Equipment.	63
2.	Free Downloads for CE Manufacturers.	63
3.	Free Guide Data for CE Manufacturers.	64
4.	Free Test Facility for CE Manufacturers.	64
H.	<i>No Commitments from CE</i>	64
I.	<i>The CEA Proposal Would Regulate and Burden Small Cable Systems</i>	65
J.	<i>The CEA Proposal Would Skew the MVPD Marketplace and Violate the Commission's "Technological Neutrality" Policy</i>	65
IV.	THE CEA PROPOSAL SHOULD BE REJECTED ON LEGAL GROUNDS.....	67
A.	<i>Requiring Cable Operators to Comply with the CEA Proposal Would Stretch the Commission's Limited Jurisdiction Under Section 629 Beyond the Breaking Point</i>	67
B.	<i>The CEA Proposal Violates Other Provisions of Communications and Constitutional Law</i>	70
C.	<i>The Commission Does Not Have Ancillary Jurisdiction to Adopt the CEA Proposal</i>	71
V.	THE COMMISSION SHOULD EXPAND ITS VISION TO AN "ALL-MVPD-READY" SOLUTION TO FULFILL THE GOALS OF SECTION 629.....	71
	CONCLUSION	75

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

The National Cable & Telecommunications Association (“NCTA”) hereby files its comments on the Third Further Notice of Proposed Rulemaking in the above-captioned proceeding.¹ NCTA is the principal trade association representing the cable television industry in the United States. Its members include cable operators serving more than 90% of the nation’s cable television subscribers, as well as more than 200 cable programming networks. NCTA’s members also include suppliers of equipment and services to the cable industry.

INTRODUCTION AND SUMMARY

If the Commission’s goal is to expeditiously bring two-way “plug and play” video devices to the marketplace, the optimal path is the OpenCable approach proposed by the cable industry in 2005. The OpenCable Platform solution is not only the fastest path for retail: it is the only one that has any prospect whatsoever of bringing two-way retail options to consumers and retailers in time for the year-end 2008 holiday selling season. The opportunities presented by OpenCable stand in stark contrast to the “DCR-plus” proposal by the Consumer Electronics

¹ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, Third Further Notice of Proposed Rulemaking, FCC 07-120, released June 29, 2007 (“Notice”).

Association, which is more aptly called the “consumer-minus” solution, because it would strip away cable services and features that consumers want and expect.

In the *Notice*, the Commission sought comment on “proposed standards to ensure bidirectional compatibility of cable television systems and consumer electronics equipment,”² *i.e.*, two-way “plug-and-play” devices. Specifically, the Commission sought comment on a proposal submitted by the cable industry in November 2005 based on the “OpenCable Platform” proposal and specific cable operator obligations as set forth in proposed regulations.³ The Commission has also sought comment on a vague outline submitted by Consumer Electronics Association (“CEA”) and certain consumer electronics (“CE”) companies in November 2006, which would require the creation and support of “one-way” plug-and-play products with limited ability to receive restructured bidirectional services (the “DCR+” proposal) and rules that would essentially freeze cable innovation until further government intervention and regulation.⁴ Finally, the Commission sought comment on “whether there are technological solutions that are network agnostic and deployable across all MVPD platforms....”⁵

When Congress adopted the “commercial availability” provisions in Section 629 in 1996, the making of a commercial market understandably focused on (then analog) cable television set-top boxes. As a practical matter, at the time cable systems provided the overwhelming majority of “cable” connections to consumers, so much so that in adopting its original navigation device

² *Id.* ¶ 1.

³ *Id.* ¶¶ 10-11. *See id.* at Appendix C (Letter from Daniel L. Brenner, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Dkt. No. 97-80, Report of the National Cable & Telecommunications Association on Two-Way (Interactive) Digital Cable-Ready Televisions, Nov. 30, 2005 (“OpenCable Platform Proposal”). This November 2005 Proposal included a set of detailed comprehensive regulations proposed for adoption by the Commission.

⁴ *Id.* ¶¶ 8-9. *See id.* at Appendix B (Letter from Brian Markwalter, CEA, to Kevin Martin, Chairman, Federal Communications Commission, *attaching* Letter from Brian Markwalter, CEA, to Marlene H. Dortch, Secretary, Federal Communications Commission, Nov. 7, 2006 (“CEA Proposal”).

⁵ *Id.* ¶ 1.

rules in 1998, the Commission confirmed that “[t]he focus of Section 629 ... is on cable television set-top boxes, devices that have historically been available only on a lease basis from the service provider,”⁶ and practically, the Commission’s initial focus was on providing retail manufacturers an opportunity to build cable set-top boxes.

But Congress had the foresight to anticipate and address an increasingly competitive market for MVPD services. Section 629 covers *all* MVPDs, not just cable operators. Specifically, Congress directed the FCC to “adopt regulations to assure the commercial availability ... of equipment *used by consumers to access multichannel video programming and other services offered over multichannel video programming systems*, from manufacturers, retailers and other vendors not affiliated with any multichannel video programming distributor.”⁷ Congress warned the Commission that in implementing this directive, it must not constrain innovation, compromise security, or treat MVPDs differently, and that it must limit itself to “narrow technical standards” “leaving all features, functions, protocols, and other product and service options for selection through open competition in the market.”⁸ “[S]ection 301(f) ensures that our vital computer and high-technology markets remain open and competitive by ensuring that Government technical standards are kept to a minimum. Almost all standards in the communications and computer industries are voluntary, private standards – not Government mandates – and they should remain that way.”⁹ Adding clear constraints on Commission

⁶ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Report and Order, FCC 98-116, 13 FCC Rcd 14775, 14778, ¶ 8 (1998) (“*First R&O*”). While Congress’ focus was on cable set-top boxes, voluntary inter-industry negotiations have resulted in specifications for unidirectional digital cable ready products (with FCC rules implementing some of the voluntary commitments), as well as technology solutions that will enable personal computers to receive cable programming via CableCARDS.

⁷ 47 U.S.C. § 549(a) (emphasis added).

⁸ Telecommunications Act of 1996, § 301(f)(1), codified at 47 U.S.C. § 644A(a)(4).

⁹ 142 Cong. Rec. H1145, H1160 (daily ed. Feb. 1, 1996) (statement of Rep . Eshoo).

authority, Congress explained that the Commission cannot use the Cable Act “as a justification or excuse for broad Government standards on home automation communications or audio-visual equipment.”¹⁰ Other constraints – such as the prohibition on treating cable as a common carrier, the requirement that Section 629 be applied to allow equipment to receive MVPD services, not some derivative thereof, and constitutional limitations on the Commission – all serve to further define the Commission’s authority.

In this proceeding, the Commission’s approach should be guided not only by the scope of its authority, but also by practical lessons from the consumer electronics industry’s failed experiment with the unidirectional digital cable product (the so-called “UDCP”). Even consumers of traditional cable TV services did not take to UDCP televisions with enough enthusiasm to maintain the product category.¹¹ Consumers have told cable operators why.

First, UDCPs delivered less than set-top boxes. Under the CE industry’s mistaken assumption in 2002 that subscribers would not take to video-on-demand, CE manufacturers designed UDCPs without video-on-demand or other interactive capabilities.

Second, because CE was including only very limited functionality inside the TV to save manufacturing costs, UDCPs were fated to become obsolete as anything but display devices within a few years.

Third, they required the consumer to deal with ongoing maintenance, which could otherwise be shifted to the cable operator by renting a set-top box.

Fourth, the DTVs with UDCP functionality carried a \$200-\$300 premium, when cable set-top boxes were (by law) being leased at a monthly rate-regulated price of about \$8 per

¹⁰ *Id.* at H1161.

¹¹ *Notice* ¶ 5. Manufacturers are shipping a steadily declining proportion of televisions with CableCARD slots.

month, and could be returned or upgraded whenever the customer tired of it or desired additional capabilities.

Finally, the vast majority of CE manufacturers did not know how to move from a single point-of-sale equipment business into an ongoing services business (such as cable). Thus, while the CE manufacturers assumed (in 2002) that they could build their own electronic program guides and had no interest in presenting cable companies' guides, when it came to implementation, only one CE manufacturer was able to steer through the thicket of intellectual property rights that govern the structure of guides and create their own guide. The complexities of third party intellectual property constrained almost all UDCP televisions to use Gemstar guides or none at all. As we will explain below, the Commission must learn from these lessons or as was the case with UDCPs, a true market will not form as the Commission hopes.

As noted above, the optimal path is the OpenCable approach proposed by the cable industry in 2005. The OpenCable Platform solution is not only the fastest path for retail: it is the only one that has any prospect of bringing consumers bidirectional retail options by the year-end 2008 holiday selling season. But the cable industry supports three solutions that address today's marketplace.

- (1) "Tuning Resolver:" For those CE manufacturers who believe that all that UDCPs need for success as a "good" product is the ability to receive "switched" linear cable channels, we are willing to develop and offer a small set-back tuning resolver (described in Part II) which, together with a firmware update in new UDCPs, can deliver two-way switched linear channels to one-way UDCPs.
- (2) "OpenCable Platform:" For CE manufacturers who want the opportunity to incorporate set-top functionality in retail devices, even inside the DTV, and to

provide the resources necessary to render the constantly evolving suite of cable services, there is an OpenCable Platform solution (described in Part I) that has already been developed, licensed, agreed to by major CE manufacturers, spec'd, certified, cleared for intellectual property, and is being deployed to consumers today.

- (3) "All-MVPD Solution:" For CE manufacturers who would build devices that can operate not just across cable but across a wide variety of MVPD networks, there could be a new network interface device. Such a device could handle most of the complexities of network consumer premises equipment functionalities and deliver an MVPD's services across an interface that can also be used by other MVPD networks. This approach could offer consumers a low cost option for accessing all cable services on bi-directional retail devices, the ability to use their televisions with other MVPD providers, and the capability to access new services on the same television as new and innovative services are deployed. The cable industry could work on such a solution should the Commission bring those networks into meaningful regulation.

This option is discussed in Part V.

We oppose the solution as proposed by CEA and certain CE companies in 2006. Some call this the "DCR-plus" solution; it is more aptly called the "consumer-minus" solution. As with the lackluster UDCP described above, the CEA DCR+ proposal would disappoint, confuse, and frustrate cable customers. It would strip away the most exciting interactive services and features that distinguishes cable from its competitors, and give consumers no assurance that they would receive the cable services they want and paid for when they use different models of TVs. The DCR+ device would be instantly archaic, unable to receive all of the interactive services offered today by the cable operator, and disabled from accessing new services. Moreover, that

solution, while promoted by some CE companies as a whisper away from current standards, is purely vaporware. What is uniquely and extraordinarily harmful about the CEA proposal is that it would prohibit the cable industry from offering innovative services until there are new “standards” resolved. That is a recipe to destroy innovation, to impoverish consumer choice, and one that CE would never tolerate for its own offerings. Even if one were inclined to say that the CE companies should be allowed to test the market in this way, the rules they propose for such a test would impose massive costs and delays borne by all cable customers, derail innovation, plunge parties into years of standards body and intellectual property turmoil, and subject the Commission to an infinite round of finger-pointing between cable and CE while the digital broadcast transition will have come and gone. Because the proposal cannot be reconciled with the Commission’s constitutional and statutory constraints, it will also generate lengthy litigation and intellectual property infringement claims from multiple parties. For this, CE offers *absolutely no assurance* (let alone any FCC requirement) that any CE company would ever build a “DCR+” device – or that any consumer would want one if it were built. This is discussed in Parts III-IV.

I. THE OPENCABLE PLATFORM PROPOSAL IS THE ONLY SOLUTION CAPABLE OF BRINGING PRODUCT TO MARKET ANYWHERE NEAR THE COMMISSION’S PROPOSED TIMEFRAME

The *Notice* sought comment on the cable industry’s OpenCable Platform proposal and, in particular, “whether the NCTA proposal offers a reasonable and quickly implementable approach....”¹² As shown below, the answer is an *emphatic yes* – particularly in contrast to the CEA approach.

¹² *Notice* ¶ 11.

A. The Benefits of the OpenCable Technology

There has been much debate before the FCC about the best way to bring “two-way” digital cable-ready products to the retail market so consumers may access cable services without the need for a set-top box supplied by the cable operator. Some have sought government intervention to micromanage a solution to the complex technical and business issues involved in bringing two-way products to market. In contrast, the cable industry, with support from a number of major CE and information technology (IT) companies, supports a market-based approach based on the OpenCable Platform – an approach that is consistent with Congressional intent and that is working to bring two-way products to market much faster than any “DCR+” approach could ever do.¹³ As Samsung, the world leader in HDTVs,¹⁴ has told the Commission: The OpenCable Platform technology is the “furthest developed [bidirectional] standard, and the only one that is immediately ready to begin being deployed nationwide.... [OpenCable Platform] set-top boxes built by Samsung and other companies are ready for wider deployment by cable operators as they provision their systems’ head ends to support [the OpenCable Platform].”¹⁵

The OpenCable Platform is a technological breakthrough for cable operators, CE manufacturers and retailers, interactive content providers, and consumers. It is an innovative national software platform that enables cable’s interactive services to work on the vast array of

¹³ While we are strong proponents of OpenCable, there is a substantial question whether the Commission has the authority to impose a solution under Section 629 that is targeted exclusively to cable, rather than to all MVPDs. On that point, we reserve all rights and refer to Part V, for a discussion of a potential all-MVPD solution.

¹⁴ Who's the World's HDTV Leader?, <http://www.tvpredictions.com>, Nov. 27, 2006 (“Sony ... will now have to cede that title to a Korean company. ... Samsung is selling more TVs – and generating more revenue – than any other set manufacturer in the world.”).

¹⁵ See Letter from John Godfrey, Vice President, Samsung Information Systems America, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Dkt. No. 97-80, CSR-7012-Z (June 18, 2007).

different set-top boxes supplied by cable operators and also on two-way “digital cable-ready” devices that can be purchased at retail outlets.

The OpenCable Platform’s genius is its ability to make sense of the wide variety of technologies, headends, network equipment, peripherals, software, and applications used by cable television systems today. Unlike the telephone network originally built to a common standard, the cable industry is a roll up of systems built at various times with various vendors, each of which rolls out innovative services to consumers without waiting for a market winner among competing equipment vendors or the resolution of a standards body. For example, even within a single cable company’s operations, a variety of program guides and video-on-demand architectures are used. New applications are constantly being invented and launched to consumers. Examples include Start Over™ (where the viewer can tune into a show midway, then re-start the show from the beginning without using a digital video recorder); Caller ID on the TV; and DVR programming via cell phone.

Because there are many non-standardized applications used in such innovative services, applications written for one cable operator using its particular network and technologies likely will not work on another cable system, and retail equipment that tries to “attach” to cable systems anywhere in the nation will find that what works in one system will not work in another.¹⁶ *The OpenCable Platform solves that problem.*

¹⁶ As the Commission recognized in 1998, “the telephone networks do not provide a proper analogy to the issues in this proceeding due to the numerous differences in technology between Part 68 telephone networks and MVPD networks.” *First R&O*, 13 FCC Rcd at 14788, ¶ 39. Part 68 applied to devices connected to a highly stable interface. The electrical characteristics of the telephone loop had been essentially unchanged for an entire century, and the facility was used only for narrow-band “plain old telephone service” (local and long distance). By contrast, cable technology, facilities and services are widely varied and evolving rapidly, delivering multiple new broadband, two-way, digital services like HDTV, high-speed cable Internet, video-on-demand, switched digital video, Start Over™, interactive advertising, instant polling/voting, parental controls, VOIP phone service, and cross-platform interactive services like Caller ID on TV and DVR programming via cell phone. Cable technology, facilities, and services are still evolving. While fixed protocols cannot accommodate this innovation, the use of the OpenCable Platform middleware can.

Using the OpenCable specifications, content developers can write interactive applications that will work on all OpenCable-ready cable systems, creating a national footprint for distribution of interactive cable television services. Think of OpenCable as a universal translator – it can “translate” any application so that it is understood and can run on any operating system that interfaces with the OpenCable Platform. Innovative interactive services such as video-on-demand, electronic program guides, games, voting, e-commerce, interactive news, local information, individualized weather, interactive advertising, shopping, added viewer information about programs, music, polling, and other television enhancements can be written to the OpenCable Platform once and then run on any device – retail or leased – that supports the OpenCable Platform. TiVo is among the leading companies that has written its guide to OpenCable-compatible APIs (application program interfaces), and will be offered on Comcast set-top boxes. Even the CEA proposal itself endorses the OpenCable Platform as the means to “access the full range of interactive cable services.”¹⁷

The Commission has written favorably about the development and deployment of the OpenCable Platform.¹⁸ Commission endorsement of the OpenCable Platform approach is consistent with the goals set out in the *Notice* and in Section 629.

¹⁷ CEA Proposal at 8.

¹⁸ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Second Report and Order, FCC 05-76, 20 FCC Rcd 6794, 6801-02, ¶ 17 (2005) (“*Second R&O*”) (in describing the first cable-CE status report, the Commission stated that the OpenCable Platform is “the basis for interactive functionality in two-way devices” and that it “was far along in development by CableLabs and the parties were cooperating regarding the harmonization of the broadcast Digital Applications Software Environment (‘DASE’) and [OpenCable Platform] standards necessary to enable manufacture of devices that can receive interactive content from both digital cable and over-the-air digital broadcasting.”); *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices and Compatibility Between Cable Systems and Consumer Electronics Equipment*, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-225, 18 FCC Rcd 20885, 20895, ¶ 20 (“*Second FNPRM*”) (certain issues “are best addressed through the ongoing bidirectional negotiations and continuing development of the OpenCable Applications Platform (‘OCAP’) specification”); *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Eleventh Annual Report, 20 FCC Rcd 2755, 2853, ¶¶ 188-90 (2005) (discussing OpenCable Platform developments); *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Tenth Annual Report, 19 FCC Rcd

The OpenCable Platform provides myriad benefits:

- **Consumers** enjoy a wealth of television program innovations, convenient navigation features, viewing enhancements, interactive services and cross-platform sharing of content.
- **Application Developers** have an exciting opportunity to create new and innovative interactive services that can be deployed seamlessly to millions of customers.
- **Content Suppliers** may add value to their content by using the OpenCable Platform to enhance their relationship with viewers through a variety of interactive services.
- **Device Makers** can innovate by expanding capabilities of digital televisions, portable game players and mobile phones to enable OpenCable services to work both in and out of the home.
- **Retailers** can sell more products by increasing consumer demand for products that offer innovative new services.
- **Advertisers** have new ways for viewers to interact easily with commercials while leveraging more platforms to extend the reach of their message.
- **Television Networks** can explore new techniques to build viewer loyalty while expanding partnerships with sponsors to enhance interactive advertising.
- **Cable Operators** have a national platform for universal delivery of interactive services, speeding delivery to customers and providing more opportunities for convergence of content across video, voice and Internet platforms.

There is immense record evidence in this docket supporting Commission endorsement of the OpenCable Platform proposal:

First, it will benefit the digital broadcast transition. To the extent the Commission believes that having advanced two-way digital cable-ready sets available as soon as possible will

1606, 1714, ¶ 190 (2004); and *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Ninth Annual Report, 17 FCC Rcd 26,901, 26,970, ¶ 169 (2002) (the OpenCable Platform “is designed to enhance the ability of the consumer electronics industry to build and market integrated DTV sets, digital set-top boxes, and other navigation devices directly to consumers. [It] provides specifications for the downloading and execution of applications, such as program guides and interactive content, to any [OpenCable Platform]-enabled devices by any cable system supporting [the OpenCable Platform]”).

provide “further incentive for consumers to transition from analog to digital devices,”¹⁹ the OpenCable Platform proposal is the one proposal that will bring such devices to market as soon as possible, and the only proposal that has any prospect of bringing consumers bidirectional retail options by the year-end 2008 holiday selling season.

Second, it is happening now. The OpenCable Platform is being brought to consumers today. Samsung and Scientific-Atlanta set-top boxes using the OpenCable Platform are now being deployed by Time Warner Cable. ***More than a dozen independent consumer electronics manufacturers, including*** leaders in HDTV technology such as ***Samsung, Panasonic, Toshiba, Funai,*** and ***LG Electronics,*** have signed the OpenCable Platform license to manufacture two-way retail devices, and have exhibited such devices at the Consumer Electronics Show and the NCTA Cable Show. ***Intel*** recently agreed to put the technology in its system-on-a-chip architecture, announcing that the OpenCable Platform “is very exciting for us, because it enables two-way interactive services. Bringing our Intel architecture to this space can allow our OEMs and [cable] operators to deploy very compelling applications.”²⁰

Third, it is a nationwide solution. Set-top boxes, digital cable-ready televisions and PCs built with the OpenCable Platform technology and purchased at retail outlets will all be able to receive interactive applications throughout the U.S.

Fourth, it is universal and “future-proofed.” The OpenCable Platform enables retail cable-ready devices to receive the full range of cable’s existing digital services, including

¹⁹ Notice ¶ 14.

²⁰ Tam Harbert, “Long Road to Open Cable for Consumer Electronics,” ELECTRONIC BUSINESS, July 24, 2007 (“Intel, one of the signatories to the CEA’s letter opposing [the OpenCable Platform] last fall, has had a change of heart. In June, its Consumer Electronics Division announced that it would enable [the OpenCable Platform technology] on Intel architecture SoCs it plans for Internet-compatible consumer electronics devices”), available at <http://www.edn.com/article/CA6462497.html>.

interactive guides, digital video recorders and video-on-demand, interactive programming and advertising, *plus new applications and services that are yet to be created and deployed.*

Fifth, it is international. The OpenCable Platform is part of the family of “write once, run anywhere” solutions used in technology networks worldwide, such as cell phones, interactive broadcasting and high-definition DVD players. The core of the OpenCable Platform is a Java-based ITU worldwide standard. Use of the OpenCable Platform keeps the United States in step with the rest of the world’s advanced networks.

Sixth, it will spark more interactive television content. A common software platform will result in the development and deployment of a wide array of exciting new digital interactive services, including unique applications linked to specific cable channels, such as added viewer information, instant voting and polling, interactive advertising, shopping, games, integration of broadband websites and television, and expanded on-demand content.

Seventh, it will inspire the creation of other unique interactive services. The efficiency of the OpenCable Platform’s universal distribution technology provides incentives for the development of new services and applications beyond traditional video networks, such as shopping, games, integration of broadband websites and television, voting and polling, and on-demand content.

Eighth, the complex intellectual property issues have already been resolved. An international and U.S. intellectual property pool exists and is licensed on reasonable and non-discriminatory terms.

B. Key Elements of the November 2005 OpenCable Platform Proposal

In November 2005, NCTA submitted to the Commission a proposed regulatory regime – including technical requirements for cable systems, cable operator support of the OpenCable Platform, limited but necessary content protection requirements for navigation devices, testing

and certification/verification procedures to prevent harm to the cable network and services, and consumer education mandates – which, if adopted and combined with marketplace agreements, will bring consumers the benefits of two-way digital cable-ready products as quickly as possible. That proposal, including the reasons why it should be endorsed by the Commission, is part of the record in this proceeding.

The *Notice* seeks comment on the NCTA proposal and the regulatory requirements contained therein. Below, we reiterate its salient points.

1. OpenCable Platform Middleware Specifications.

The OpenCable Platform Proposal rests on a foundation of cable industry support for the OpenCable Platform, which has been acknowledged by the Commission as a reasonable pathway to development of commercially-available interactive digital cable ready products (“IDCPs”). As noted above, the OpenCable Platform enables retail digital cable-ready devices to receive the full range of cable’s existing digital services, including interactive guides, digital video recorders and video-on-demand, plus new applications and services that are yet to be deployed. Further, these proposals build on market-based agreements, already executed by major CE companies, that will facilitate deployment of innovative products, assure the ability of cable customers to benefit from innovations in services offered by cable operators and programmers, meet consumer expectations for the delivery of cable services, and respect the requirements of cable’s content providers.

Underlying this proposal is a requirement that IDCPs support the OpenCable Platform middleware specification, something already agreed to by consumer electronics companies in the December 2002, One-Way Plug and Play Agreement’s Memorandum of Understanding

(“MOU”).²¹ The Commission likewise has recognized that the OpenCable Platform was expected to be “the basis for interactive functionality in two-way devices.”²² The OpenCable Platform is based on the same middleware solutions used internationally in 2 billion cell phones, in MHP, GEM, ARIB, ACAP, and Blu-Ray. These solutions leverage a large Java development and deployment base.²³ It allows a wide variety of CE devices to have access to new services without the delay imposed by time-consuming standards activity that imposes static constraints on an application-by-application, service-by-service, and device-by-device basis. When applications developers and interactive programmers write their applications to the OpenCable Platform specification, the application or service will run on any OpenCable Platform-enabled set-top or television receiver with supporting resources, regardless of hardware or operating system software choices, leased or retail. It provides “write once, run anywhere” capability. It allows multiple navigators,²⁴ video-on-demand services,²⁵ and third party applications²⁶ developed by multiple manufacturers and programmers using different commercially-

²¹ See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, Further Notice of Proposed Rulemaking, FCC 03-3, 18 FCC Rcd 518, 539-48 (attaching “Cable-CE MOU”) (“*Navigation Devices FNPRM*”).

²² *Second R&O*, 20 FCC Rcd at 6801, ¶ 17.

²³ The OpenCable Platform middleware is founded on a Java Execution Engine approach that has been widely adopted throughout the world. ITU-T J.200 “CABLE NETWORKS AND TRANSMISSION OF TELEVISION, SOUND PROGRAMME AND OTHER MULTIMEDIA SIGNALS, Application for Interactive Digital Television, Worldwide common core Application environment for digital interactive television services.” This approach is followed in Europe and Asia with Multimedia Home Platform (MHP), a middleware standard within the international Digital Video Broadcasting project for enhanced television, and with the Association of Radio Industries and Businesses (ARIB), a standardization organization in Japan. Similar technology has been adopted by the wireless phone industry in Java phones. North American digital broadcasters plan to follow the same approach in the Advanced Common Application Platform (ACAP), a digital broadcasting middleware standard project of the ATSC.

²⁴ E.g., Guideworks, Passport, SARA, Mystro, Optimum.

²⁵ E.g., SeaChange, C-COR, Concurrent, Broadbus, Arroyo.

²⁶ E.g., GoldPocket/Tandberg, BIAP, Bluestreak, TVWorks, Zodiac, Navic, Visiware.

advantageous techniques to operate with the various operating systems²⁷ on set-top boxes and retail DTVs, without trying to constrain their innovation within individual application-by-application “standards.” Through the OpenCable Platform, developers of cross-platform services (such as Caller ID on TV) can launch services and applications without waiting for the evolution of a single standard, winner, or protocol, because the applications can be written to be read by OpenCable. The applications can then be enhanced at the application level whenever innovation or competition requires, without awaiting a change in standards or adoption of unique protocols. Application developers in other markets where interactive televisions have obtained a much greater foothold than in the U.S. are very experienced in developing and writing interactive applications to middleware in this way.

2. OpenCable Platform Hardware Specifications.

Moving interactive set-top functionalities into a retail DTV is more complicated than implementing a one-way downstream interface as used in one-way “plug-and-play” products. Many more dedicated resources are needed inside the device to receive interactive cable services. When a two-way retail digital cable ready television internalizes set-top functionality into the television, the resources on which the cable operator relied to deliver service now need to be included by CE manufacturer in the television, and shared between the television and the cable system.²⁸ Thus, the hardware specifications need to make sure that both the operator’s cable

²⁷ *E.g.*, PowerTV, VRTX, Linux, VxWorks, OS20, Aperios.

²⁸ A cable operator can put all the resources it needs into the set-top box to to make its services operate properly and interactively with the headend. The box includes the necessary tuner, drive, processing power, and memory. It is programmed to populate the guide in the background so it works when the consumer tunes. It monitors the network for updates and entitlement messages. It can interface with a variety of billing systems for on-demand and other content. It includes the keycodes that work with remote controls, so cable operators can tell consumers what buttons to press to make cable services work. It can bring up diagnostic screens for the installer and customer service representative (“CSR”) to troubleshoot. In short, an operator’s two-way set-top box has everything needed for the cable experience except the screen. Likewise, in their own devices, CE manufacturers currently install the necessary resources to make certain that the device functions properly for its intended purpose. When these functions are combined, the resources need to be specified and shared.

services and applications and the CE manufacturer's native applications will run properly in a shared device. When a CE manufacturer seeks to incorporate this set-top functionality inside a television, and to provide the resources needed to handle complex interactive cable services, the integration of set-top and television presents some challenging issues.

Although the discussions tried the patience of regulators, we were able to resolve the most difficult technical issue: how exactly to share resources inside the television. That solution was developed through a set of intense engineering discussions that, in a rare show of agreement, were previously reported positively by both CEA and NCTA²⁹ and are now embodied in the current OpenCable Platform specifications.³⁰ The OpenCable Platform specifications, test suites, and documentation have been available since August 2004. Both Samsung and LG Electronics have submitted products and been certified as compliant. In our proposal, we ask the Commission to adopt rules requiring bidirectional retail devices to meet the OpenCable Platform specifications.

While retail products enabled with the OpenCable Platform can run cable applications such as electronic program guides, video-on-demand, switched digital video, cross-platform services like Caller-ID on TV and DVR programming via cell phone, and are "future proofed" to run new services to come (including interactive programming applications), they may also have other features, including a native menu and guide, photo viewers, games, DVD players, or any other input.

²⁹ Joint Status Report of the Consumer Electronics Association and the National Cable & Telecommunications Association, CS Dkt. No. 97-80, Oct. 14, 2005 ("The parties have agreed to proceed on the basis that interactive Digital Cable Ready devices (iDCRs) will use the OpenCable Application Platform (OCAP). (OCAP is a middleware to which interactive cable services may be written so that they may run on multiple device platforms.")

³⁰ OC-SP-HOST2.1-CFR-I01-070720 "OpenCable Core Functional Requirements", including OC-SP-OCAP1.1-I01-061229: "OpenCable Application Platform Specification," available at <http://www.opencable.com/specifications/ocap.html>. Since the NCTA proposal filed in November 2005, the host specification has advanced to Host 2.1.

Cable service need not be the only service provided by retail products enabled with OpenCable, but when it is presented, it must be presented as offered by the cable operator by subscription agreement to consumers. Neither CE manufacturers nor cable operators are limited to innovations that fit within existing standards.

3. Tools to Protect High-Value Content.

Cable operators obtain content from content suppliers under carefully negotiated contract terms and conditions for retailing that content to cable customers. Content suppliers are understandably concerned that their content should appear as they have licensed it and that it be protected from unauthorized copying and redistribution. Content suppliers are equally concerned that cable networks remain flexible and innovative enough to accommodate new business models, such as early release windows to exhibit movies on demand, offering consumers vastly more convenience than DVD rentals. Content suppliers insist that if cable operators do not include the end-to-end tools for securing content and accommodating new business models, or do not keep innovating in this area, content will migrate to other platforms – such as packaged media or the Internet – and will no longer be conveniently available to cable customers in their living rooms. If that were to happen, the losers would be cable customers.

The OpenCable Platform proposal and related licenses address these security and content protection issues. IDCPs are expected to receive the highest value on-demand content in the earliest release window available. Such high-value content will only reach customers if cable systems remain secure. To be secure, cable systems and devices connected to those systems must include modern content protection tools that compare well with those provided by competing platforms, and allow cable operators and content providers alike to create innovative new uses of cable content and new business models for the benefit of consumers. For this reason, our proposal includes the tools to enable selectable output control (“SOC”), and an

update to FCC rules to allow use of the tools for innovative content offerings.³¹ The SOC tool is a key feature of bi-directional navigational devices to enable new business models based on interactive delivery of high-value and early window digital content. As the Commission recognized back in the one-way Plug and Play proceeding, “[SOC] functionality might have future applications that could potentially be advantageous to consumers, such as facilitating new business models.”³²

Cable operators and content providers are committed to pursuing new opportunities for delivering such content to consumers. Such new business models might include on-demand delivery of films in high definition format very shortly after their theatrical run, on-demand viewing of premium cable network programming before its regular run, or consumer offerings such as limited time “rentals.” It is for this reason that CableLabs, at the request of and with support from the Motion Picture Association of America (“MPAA”) and its member companies, has included the *tools* for Selectable Output Control functionality in the OpenCable Platform. The exercise of those tools remains subject to Commission rule, but to keep up with new business models, the rules should be updated, as they are in the OpenCable proposal.

4. Consumer Education.

The Commission has repeatedly urged that CE manufacturers: (1) use a uniform nomenclature that make functionalities understandable to consumers; (2) make certain that

³¹ SOC functionality is included in the Host 2.1 specifications, and is implemented through the OpenCable Platform middleware. Under the proposed rules, its exercise would be subject to complaint and evaluation by the FCC under criteria similar to the current encoding rules, but which also take account of the offerings of competitive platforms that have no such restrictions for delivery of content to the same potential consumers. The tool can be used keep the cable platform equivalent to the most modern iteration on content providers expectations – the AACCS technology for high definition DVDs. AACCS contemplates a “digital only token” which can signal a player to close down analog outputs that might otherwise make unauthorized use of high-value early release content and compromise later release windows.

³² *Second FNPRM*, 18 FCC Rcd at 20911, ¶ 61.

consumers are clearly informed in advance what devices do and don't do, so that consumers do not unwittingly buy devices that cannot receive expected services; and (3) join with retailers to provide point-of-sale and other marketing information to consumers and clearly label new television sets so that consumers are fully informed about their prospective purchases before they become owners of the sets.³³

The proposed rules explicitly codify and apply to two-way digital cable-ready televisions the disclosures that the Commission suggested cable operators make with respect to the capabilities and limitations of one-way digital cable-ready sets.³⁴ They also would place consumer education obligations on both CE manufacturers and retailers.

The proposed rules do more than impose a regulatory obligation for consumer education. By requiring that two-way digital cable-ready products meet OpenCable Platform specifications, the proposed rules will help ensure that such devices will provide a predictable customer experience for cable customers. As a result, cable operators will be able to educate their customers about how cable services will operate on two-way "digital cable-ready" televisions before consumers buy them, and will be able to provide post-sale customer service with the confidence that television displays, diagnostic screens, remote control keycodes, and other features will operate in a way that cable customer service representatives are trained to support and that cable customers will understand.

³³ See e.g., *Requirements for Digital Television Receiving Capability*, Second Report and Order, 20 FCC Rcd 18607, 18617, ¶ 28 (2005); *Requirements for Digital Television Receiving Capability*, Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd 11196, 11204, ¶ 19, and 11220 (Statement of Commissioner Copps) (2005); *Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, 19 FCC Rcd 18279, ¶¶ 166, 168 (2004); *Second FNPRM*, 18 FCC Rcd at 20904, ¶ 41, and 20967 (Statement of Commissioner Copps).

³⁴ *Second FNPRM*, 18 FCC Rcd at 20904, ¶ 41.

5. Licensing.

Technological devices are invariably subject to licenses covering various private intellectual property interests.³⁵ Adding cable functionality is no exception. The relevant licenses include the CHILA,³⁶ OpenCable Platform,³⁷ and Digital Certificate licenses³⁸ which CableLabs makes available to all manufacturers on non-discriminatory and cost recovery terms.

These licenses are dynamic. Among other things, they help move consumers to protected digital interfaces to advance the digital broadcast transition.³⁹ The CHILA and OpenCable Platform licenses explicitly invite the addition of new features and functionalities to devices.⁴⁰ Likewise, they also permit innovation in cable services and networks that can lead to changes in specifications.⁴¹ Specifications must be able to change quickly in response to competition.⁴² The

³⁵ For example, an IDCP with a DTCP-protected 1394 output, an HDCP-protected HDMI interface, Macrovision, a DVD player, and a DVD writer with VCPS protection would have licenses for DTCP, HDCP, Macrovision, Philips' DVD-CCA, and Philips-HP's VCPS.

³⁶ CHILA (CableCARD Host Interface License Agreement) governs the DFAST patent for two-way devices.

³⁷ The OpenCable Application Platform Implementers Agreement governs the relevant API specifications (including copyrights), plus the terms and conditions for licensing and use of the OpenCable Platform Conformance Test Package, the Automated Test Environment (ATE), and certain software code.

³⁸ The Host Digital Certificate Agreement governs the security certificates placed within the device (Host 2.1 and DSG Device Certificates, as well as OpenCable Platform and DSG code verification certificates).

³⁹ For example, under the licenses, any IDCP that includes a component analog output shall also include one or more approved protected digital outputs. The licenses' compliance rules evolve to add additional digital output protection technologies. The robustness rules also evolve, for example, moving from 56 bit DES up to 128 bit AES encryption as NIST decertified the 56 bit security system and as security standards evolved in the market. With input from licensees, such amendments are incorporated in the licenses through the applicable change management provisions.

⁴⁰ See CHILA, § 5.2 ("Nothing in this Agreement shall preclude Licensee from including in a Host Device additional features or functionalities not specified in the OpenCable Specifications" so long as the service, network, and security is not harmed.). There is a parallel clause in the OpenCable Platform license (*see id.* § 2.7).

⁴¹ As the Commission held in the *Second R&O*, "Cable operators are free to innovate and introduce new products and services without regard to whether consumer electronics manufacturers are positioned to deploy substantially similar products and services." 20 FCC Rcd at 6809, ¶ 30.

⁴² The OpenCable Platform specifications continue to evolve through evolution and optional extensions at CableLabs. CE, IT, and cable interests have all had, and will continue to have, the opportunity to steer its development now and into the future. At periodic intervals, the specifications are moved to standards bodies. The OpenCable Platform middleware is already standardized at the SCTE, an ANSI-accredited standards body,

change management process in the licenses permits phase-in periods and dispute resolution, while ensuring that cable has the right to innovate in services and networks.

The relevant licenses also require that cable customers receive cable services as they are intended to be offered by the cable operator, by requiring that compliant devices not disrupt, impede or impair cable services. Such clauses are essential to ensure that cable customers receive cable services as expected when they pay for them, and as those services evolve in the competitive marketplace.⁴³

All agreements are posted at <http://www.opencable.com/documents/>. They have already been *commercially accepted by* major CE manufacturers (including *Samsung, LG, Panasonic, Funai, Thomson, Intel, Broadcom, AMD, NEC* and *Digeo*) and are available to all manufacturers on a non-discriminatory, most favored nation basis.

6. Testing and Self-Verification.

The original one-way MOU contemplated that IDCPs would be subject to a more rigorous testing environment than UDCPs.⁴⁴ In keeping with this understanding, the proposed rules contained in the NCTA proposal provide for the testing of IDCPs to ensure they meet applicable requirements. The cable and CE industries have already agreed on the basic structure

and has been approved as an international standard by the International Telecommunications Union (“ITU”). This does not mean that the OpenCable Platform has stopped evolving. Deployment does not await the adoption by a standards body of the latest development in OpenCable. If it did, OpenCable could never be deployed and could never keep up with a highly competitive market.

⁴³ By contrast, cable’s video competitors, like DBS, ensure that expected user experience by providing end-to-end service through equipment that is manufactured to precise DBS specifications, not by supporting separate security module-enabled retail devices. Although DBS is an MVPD subject to the same regulations, such devices do not support separate security, and are not held to the same retail availability standards as cable.

⁴⁴ *Navigation Devices FNPRM*, 18 FCC Rcd at 548 (“Advanced Interactive Digital Cable *n* (*n* = TV, Tuner, etc) Product Definition (This is a two-way product) * * * Interoperability Testing and Certification Requirements: Because of the complexity of this type of product, CE Manufacturers agree to a higher level of compliance, and of interoperability testing, leading to self-certification.”). Sony, Mitsubishi, Philips, Pioneer, Hitachi, JVC, Panasonic/Matsushita, Samsung, Sharp, Thomson, Toshiba, Zenith, and the rest of CEA’s Video Board were parties to the agreement.

for a testing regime, informed by the platform, application, and interoperability testing programs and procedures already in place in commercial markets in Europe and Japan. The structure will contain four elements: device testing; applications testing; systems interoperability testing among a subset of devices and applications; and a broader (optional) interoperability testing program to provide a greater assurance of practical interoperability.⁴⁵ Almost every manufacturer of UDCPs has already taken advantage of development testing at CableLabs. The CHILA and OpenCable licenses also provide a path toward self-verification.⁴⁶

C. The OpenCable Technology Is Cleared for Intellectual Property

One of the most contentious parts of technology development is intellectual property clearance. Intellectual property claims lace the electronic program guide, video-on-demand, and switched digital video technologies. CEA's approach is to ignore them, rather than to address them in any way. By contrast, a worldwide patent pool has already been established for the OpenCable Platform middleware after years of work making the solution fully available on

⁴⁵ See Joint Status Report of the Consumer Electronics Association and the National Cable & Telecommunications Association, CS Dkt. No. 97-80, Nov. 30, 2005, at 2. The device testing referenced in applicable OpenCable licenses was used successfully to certify the Samsung two-way OpenCable Platform-enabled DTV in 2005. Although testing will begin at CableLabs, the cable industry is open to the possibility of a qualified third party test facility. CableLabs also offers voluntary full development testing for hosts, CableCARDS and applications on fair, reasonable, and non-discriminatory terms. See policies posted at <http://www.opencable.com/testing/> and <http://www.opencable.com/certification/> - CableLabs Development Lab Use Policy. Tests are administered on a cost recovery, not-for-profit, basis. The tests, and the suite of applications and devices, will necessarily change and evolve as more products and applications are introduced to the market.

⁴⁶ The CHILA license provides "CableLabs agrees that it will allow in the future for self-Certification of products by its licensees who have demonstrated through the Certification process that they are consistently capable of building products that are Certified in the first submission for Certification under this Agreement. After CableLabs and Licensee (as well as other licensees of CableLabs Technology) have had sufficient experience with the certification process, CableLabs will discuss the creation of such a self-Certification process." CHILA, Exhibit A (CableLabs' Certification Criteria for Host Devices). The demonstration of capability necessarily depends upon the individual performance of each manufacturer.

reasonable and non-discriminatory terms. The majority of patent holders are CE manufacturers.⁴⁷

D. The OpenCable Technology, Agreed to by the CE Industry in the 2002 One-Way Plug-and-Play Agreement, Has Been Endorsed by Leading CE and IT Companies

Consumer electronics companies committed to using the OpenCable Platform middleware for two-way plug-and-play products in the negotiated One-Way Cable-CE Plug-and-Play Agreement submitted to the FCC in 2002.⁴⁸ In the meantime, over a dozen independent CE companies, including leaders in HDTV technology such as Samsung,⁴⁹ Panasonic⁵⁰ and LG Electronics,⁵¹ have signed the OpenCable Platform and CHILA licenses to manufacture two-way retail devices. These companies, and more than 50 other equipment, application, and implementation vendors, have invested years of effort and millions of dollars to develop the OpenCable Platform middleware solution.⁵²

⁴⁷ Participants include LG, Philips, Samsung, Panasonic, Comcast, Time Warner Cable, and OpenTV. *See* Via Licensing Announces Availability of Joint Patent License for OCAP Specification, http://www.vialicensing.com/news/details.cfm?VIANEWS_ID=320 (Sept. 6, 2006).

⁴⁸ “Cable operators’ EPG will be provided for advanced interactive digital cable products via OCAP [the OpenCable Platform] or its successor technology.” *Navigation Devices FNPRM*, 18 FCC Rcd at 548. Sony, Mitsubishi, Philips, Pioneer, Hitachi, JVC, Panasonic/Matsushita, Samsung, Sharp, Thomson, Toshiba, Zenith, and the rest of CEA’s Video Board were parties to the agreement.

⁴⁹ Samsung is now the world leader in HDTVs. Who’s the World’s HDTV Leader?, <http://www.tvpredictions.com> (Nov. 27, 2006) (“Sony ... will now have to cede that title to a Korean company.... Samsung is selling more TVs – and generating more revenue – than any other set manufacturer in the world.”)

⁵⁰ *See* Panasonic Plasma HDTV Goes From Wish List to Reality for Many This Holiday Season, <http://money.cnn.com/news/newsfeeds/articles/prnewswire/NYTH18116112006-1.htm>. (“Panasonic was the best-selling plasma TV brand in the United States this year...”).

⁵¹ Interview: LG Electronics, <http://www.physorg.com/printnews.php?newsid=66310119>. (“LG is the world’s largest producer of flat-panel displays...”).

⁵² OpenCable Applications Platform license and CHILA signators include CE manufacturers, software, silicon, and support companies. The current list is: Acanettv Co., Ltd, Advanced Digital Broadcast (ADB), Advanced Micro Devices, Inc., Alticast Corp., Ambit Microsystems, Inc., Asmedia Technology Inc., Asustek Computer Inc., ATI Technologies Inc., Broadcom Corp., Ceton Corp., Digeo, Inc., DigiSoft.tv, Inc., Digital Keystone, emuse, Engequence, Inc., Funai Electric Co., Ltd., Genesis Microchip, Inc., Himax Technologies, Inc., Horizon Semiconductors, Ltd., IDway, LG Electronics Inc., MAKUS Inc., Micronas GmbH, Motorola, NEC Electronics Corp., Nexol Telecom Inc., OSMOSYS Inc., Pace Micro Technology plc, Panasonic (Matsushita), PC Partner Limited, Samsung Electronics, Scientific-Atlanta, Inc., Softel - USA, Stexar Corp., Sunplus Technology Co.,

Information technology companies are taking a similar cooperative approach. For example, Intel Corporation recently announced that it had signed the OpenCable Platform Agreement and will include support for the OpenCable Platform in future Intel consumer electronics system-on-a-chip products. As Eric Kim, Intel senior vice president and general manager of the company's Digital Home Group, said:

The collaboration between the major cable television operators and Intel exemplifies and fuels the ongoing transition to digitally delivered entertainment whether through a computer, high-definition television, smart set-top box or other networked CE device.... We expect this move and our innovative SoC [system-on-a-chip] products to further accelerate the development of new applications and services for myriad cable operators, CE manufacturers, developers and retailers, and to further bolster our own CE product plans based on Intel Architecture.⁵³

Intel's Consumer Electronics Group Director of Marketing, Wilfred Martis, observed that the OpenCable Platform "is very exciting for us, because it enables two-way interactive services. Bringing our Intel architecture to this space can allow our OEMs and [cable] operators to deploy very compelling applications."⁵⁴

Microsoft, too, has established a collaborative relationship with CableLabs "to explore ways to enable cable's two-way services to work on personal computers and speed deployment of OpenCable-enabled retail devices.... Microsoft, CableLabs, major cable operators, and other

LTD, Tata Elxsi Limited, Texas Instruments Israel, Thomson, Toshiba America Consumer Products, L.L.C., Video Without Boundries, Inc., Vidiom Systems, VividLogic Inc., ViXS Systems Inc., Zentek Technology Inc. More details on OpenCable development are in NCTA *Ex Parte*, filed in CS Dkt. No. 97-80 (June 15, 2007); NCTA *Ex Parte*, filed in CS Dkt. No. 97-80, at 1-2 (June 5, 2007); NCTA *Ex Parte*, filed in CS Dkt. No. 97-80 (Dec. 11, 2006); and NCTA *Ex Parte*, filed in CS Dkt. No. 97-80 (Oct. 30, 2006). The November 2005 OpenCable Platform proposal also details the considerable work required by cable operators, developers of applications and software implementations, and manufacturers of CE devices, headends, servers, and tools, working hand in hand, to bring the OpenCable Platform together. *See* November 2005 OpenCable Platform Proposal at 10-11. Such work continues to refine and improve OpenCable.

⁵³ *See* CableLabs®, Intel to Bring OpenCable™ Platform to Future Intel Consumer Electronics Products, <http://www.intel.com/pressroom/archive/releases/20070625corp.htm?iid=search>.

⁵⁴ Harbert, *supra* note 20.

key vendors are looking forward to expanding the scope of the cable services delivered to the PC platform to include bi-directional services in the future.”⁵⁵

Even the proponents of the CEA approach recognize the benefits of the OpenCable Platform technology. As they said in their proposal,

manufacturers have the option, but not the obligation, to include [the OpenCable Platform technology] in devices that access ‘basic’ interactive services –switched digital, electronic program guide (‘EPG’), video-on-demand (‘VOD’), and impulse pay-per-view (‘PPV’) and *must implement [OpenCable Platform technology]* to access ‘advanced’ interactive services – perhaps on-line games, email and ‘play-along’ interaction coordinated with specific video content.”⁵⁶

E. The Technology is Bringing Products to Market Now

The marketplace-based OpenCable Platform approach developed by the cable industry and major CE companies is bringing two-way plug-and-play products to market now. Several leading CE manufacturers are building two-way OpenCable Platform-enabled products for retail and many of those products were displayed at the 2007 Consumer Electronics Show. A CableLabs press release described the numerous OpenCable Platform-enabled “two-way” products displayed at that show and noted that,

with more than a dozen manufacturers displaying two-way ‘plug-and-play’ televisions, set-top boxes and other cable-ready devices, the just completed 2007 Consumer Electronics Show marked a significant milestone in the cable industry’s efforts to bring interactive digital television services to consumers that will not require the use of a leased set-top box.”⁵⁷

Earlier this year, a Wall Street Journal article reported on the development of plug-and-play” television sets, set-top boxes and other products which use the OpenCable Platform. As

⁵⁵ Press Release, NCTA, June 25, 2007, *available at* <http://www.ncta.com/ContentView.aspx?hidenavlink=true&type=reltyp1&contentId=4260>.

⁵⁶ CEA Proposal at 2 (emphasis added).

⁵⁷ Press Release, CableLabs, “2007 CES Featured Cable’s Two-Way Future: High Definition Cable Content Now Available on PCs,” Jan. 24, 2007.

the article observes, “manufacturers such as Panasonic, Samsung and LG already have designed [OpenCable Platform] TV sets that will eliminate the need for set-top boxes, the scourge of many a home-entertainment center. With [those] TVs, scheduled to be available as early as this year, users just have to attach a cable and the set will get video-on-demand, advanced program guides and other interactive features from cable.”⁵⁸

F. Cable Operators Have Committed to Supporting OpenCable Platform-Enabled Devices

Major cable operators have committed to using OpenCable Platform technology in their own leased set-top boxes and have started to deploy support for those devices and for retail devices.⁵⁹

Some CE companies have argued that “there is no regulation that requires the cable operators to deploy [the OpenCable Platform] nationwide” and thus expressed concern that CE manufacturers would have no assurance that OpenCable Platform-enabled DTVs would work everywhere in the country.⁶⁰ *This is simply wrong. The cable industry put forward a regulatory proposal in 2005 to ensure compliance:* As part of the November 2005 proposal, we recommended that the FCC adopt regulations requiring cable operator support of OpenCable Platform-enabled retail devices. Specifically, we proposed to begin the deployment of network support for the OpenCable Platform in 2006, and that cable systems with a bandwidth of at least 750 MHz and with 5,000 or more subscribers would meet two benchmarks:

⁵⁸ “Cable TV’s New Aim: Free Us From Tangle Of Boxes and Remotes,” WALL ST. J., Feb. 21, 2007.

⁵⁹ See Press Release, CableLabs, “Cable Television Industry Voices Support for OCAP™ and Two-Way Digital Cable-Ready Product Deployments,” Jan. 5, 2006. Fred Dawson, “MSOs Close in on the Mass Leap to OCAP as Answer to IPTV,” SCREENPLAYS, Dec. 16, 2006 at 14 (quoting Walden Miller, co-founder of Vidiom Systems, a pioneer in the development of the OpenCable Platform, “They’re comfortable that the technology is ready to move into the marketplace.”), available at <http://screenplays.bantapubnet.com/dec2006/digimag.asp>.

⁶⁰ See Harbert, *supra* note 20.

- July 1, 2008 – Operators with more than 2 million subscribers nationwide must ensure that at least 50% of their customers are served by cable systems that support interactive digital cable products.
- July 1, 2009 – All operators shall support interactive digital cable-ready products running OpenCable Platform technology.⁶¹

Obviously, these benchmark dates were tied to our November 2005 proposal, which was never acted on by the Commission. Nonetheless, cable operators are executing on OpenCable and deploying OpenCable support to headends and using it in leased set-top boxes. For example, 41 Time Warner headends now support the OpenCable Platform. Time Warner has deployed over 100,000 OpenCable set-top boxes. Comcast is conducting OpenCable technical trials in four markets. Cox is in trial with Samsung OpenCable set-top boxes in two test markets (one served by Scientific-Atlanta conditional access and one by Motorola). Further deployment in Time Warner, Comcast and Cox systems is expected. Indeed, it is in the business interest of the cable industry to roll out the OpenCable Platform technology rapidly to leased and retail products because that technology streamlines and improves the cable business and because it provides applications developers and consumers with an interactive platform that will be fully competitive with IPTV and other video services. Multiple guides, multiple VOD applications, switched digital video applications, interactive advertising, Caller-ID on TV, email viewers, on-screen subscriptions, and even the TiVo interface are being ported to the OpenCable Platform. Retail OpenCable Platform TVs have already been certified for production by CableLabs. It is now within the control of consumer electronics manufacturers and retailers whether they will bring these devices to market. That will not be the case with DCR+ devices, for which standards have not been developed, let alone devices built.

⁶¹ Waivers may be granted for small systems in appropriate circumstances. We also explained at the time that, if additional obligations were imposed, the timetable for deployment will necessarily be delayed.

G. The Proposed Regulations Are Based on the One-Way Rules Previously Adopted by the Commission

In our November 2005 submission, we proposed a minimal number of regulations so that the Commission, consumers, CE companies and cable operators could be assured that two-way products would have every chance to succeed in the marketplace. Those proposed rules were based on the Commission's current rules for UDCPs. The rules define obligations of Part 15 IDCPC devices by pointing to existing commercially-adopted OpenCable Platform specifications and testing arrangements which can continue to develop as cable operators and manufacturers gain more experience with those specifications. While the specifications also address selectable output control requirements, those would be incorporated into the existing encoding rules in Subpart W of Part 76 of the Commission's rules.⁶² The rules also define cable operators' support benchmarks for the OpenCable Platform, with a commitment to national deployment. As we observed in our 2005 filing, generally, the Commission's preference is to permit market forces, rather than regulation, to define technological choices and their introduction to the market. However, the cable industry offered a commitment to deploy support for the OpenCable Platform over three years to give assurances to CE manufacturers and consumers that an IDCPC built to the OpenCable Platform specifications will work nationwide. Even though the three-year timeframe is more rapid than comparable FCC technology mandates,⁶³ the cable industry offered to meet it under the terms proposed.

⁶² The proposed rules also fine tune current interfaces: they expand the commitment to the DVI/HDMI input (which provides an uncompressed broadband path into TVs) to all TVs, including smaller screens, reflecting the market's shift to HDMI. They also maintain the requirement that consumers have option for a 1394 interface from operator-supplied HD set-tops, but make it available only on subscriber request. This reflects the market's shift away from 1394.

⁶³ See Exhibit A to the NCTA November 2005 proposal describing Technology Phase-In Periods.

As noted above, the Commission has not yet acted on the proposal. As NCTA said at the time, if additional or less flexible obligations were imposed, the timetable for deployment would necessarily be delayed.⁶⁴

H. The OpenCable Platform Solution Should Be Adopted by the Commission

In the *Notice*, the Commission specifically sought comment on the impact of the OpenCable Platform and CEA proposals on: (i) consumers, (ii) CE manufacturers, and (iii) others.⁶⁵ In Parts III-IV below, we detail the serious shortcomings of the CEA proposal. By contrast, the OpenCable Platform proposal is a “win-win” situation for all affected groups.

The OpenCable Platform will benefit consumers by bringing to market immediately truly “cable-ready” two-way products that can be upgraded on the fly so they will be able to access new interactive services provided by their cable operators – unlike the experiences some consumers had with one-way digital cable ready products which were frozen in time and could not access new cable services. The proposed consumer education campaign to be undertaken by cable, CE, and retailer, will ensure that consumers are clearly informed in advance what devices do and don’t do, so that they do not unwittingly buy devices that cannot receive expected services. By requiring CE manufacturers and retailers to provide point-of-sale and other marketing information to consumers and clearly label new television sets, consumers will be informed about their prospective purchases before they become owners of the sets.

The OpenCable Platform will benefit CE manufacturers by providing a solution that: (1) they can bring to market immediately rather than waiting for standards bodies to adopt standards to implement the CEA proposal, and (2) will not result in dissatisfied customers who would

⁶⁴ Obviously, since that filing, the Commission has placed other priorities on the cable industry. Any additional requirement to support the CEA proposal in addition to the OpenCable Platform would significantly extend the transition period.

⁶⁵ *Notice* ¶ 14.

otherwise complain that their “DCR+” DTV sets are not able to access the current services provided by their cable operator.

The OpenCable Platform will benefit CE retailers whose customers do not want to purchase products less useful than the ones they already have. For example, televisions manufactured under the CEA approach would not even provide current services that cable operator set-top boxes provide such as Start Over™, Caller ID on TV, instant polling/voting, and interactive advertising. The DCR+ product is obsolete now and will grow even more irrelevant as cable services keep evolving. The CEA proposal will lead to consumer confusion and disappointment, high call volume to retailers (and manufacturers) and product returns.

The OpenCable Platform will benefit content and applications providers by providing a vehicle for writing applications once and having them run on any cable system and device supporting the OpenCable Platform and by providing more secure tools for content providers’ high value content. The proposed rules would also expressly equip bi-directional devices with the tools for selectable output control, and would update the rules to allow a distributor to deliver high-value content, such as motion pictures in early release windows that is currently not available to cable consumers.

The OpenCable Platform will benefit large and small cable operators by: (1) making available to consumers devices that are truly “cable-ready” to minimize consumer complaints about being unable to access cable services, (2) accelerating the development of applications which will draw consumers to the cable platform, and (3) reducing operator reliance on capital-intensive set-top box purchases whose expense can, at best, be recouped over time through government-regulated set-top box charges.

* * * * *

The Commission has noted that commercial availability is “not a development easily mandated by a set of Commission rules.”⁶⁶ With the adoption of the NCTA proposal, the Commission will have adopted all regulations necessary to ensure the continued development, deployment and support – the commercial availability – of both one-way and two-way digital cable ready products. It will have more than satisfied the purpose of Section 629 by “provid[ing] consumers with the benefits of competition from the manufacture and sale of such devices.”⁶⁷ For the reasons stated above, the Commission should endorse the OpenCable Platform solution proposed in NCTA’s November 2005 proposal.

II. SWITCHED DIGITAL VIDEO MODIFICATIONS

Switched Digital Video (“SDV”) is a highly efficient bandwidth management technology employed by cable operators to transmit digital channels to customers on an “as-needed” basis. AT&T’s U-Verse video service utilizes SDV to deliver *all of its channels* throughout its entire footprint. Cable systems traditionally transmitted all channels simultaneously to all customers, requiring the use of bandwidth for all channels even if few – or no – customers were watching a particular channel. By contrast, when a digital customer tunes to an SDV channel, the channel is only sent to those customers that wish to view it. As a result, when an SDV channel is not being viewed, bandwidth is available for other services.

SDV preserves bandwidth so that it can be used for deployment of innovative new services. The recovered bandwidth can be used to deliver more High Definition, Standard Definition and on-demand channels. Indeed, the recovered bandwidth is essential for cable operators to deal with the digital broadcast transition. The bandwidth can also be used to deliver faster “bonded”

⁶⁶ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Order on Reconsideration, 14 FCC Rcd 7596, 7601, ¶ 12 (1999).

⁶⁷ *Id.* at 7597, ¶ 1.

channels with dramatically improved “wideband” Internet speeds of 100 Mbps; digital voice service; and more interactive two-way services. SDV promotes broadband deployment and adoption and causes less disruption for consumers because SDV, like on-demand service, uses intelligent network management techniques to expand digital capacity without tearing up the streets to install additional fiber.

It is in everyone’s interest for cable operators to use their networks more efficiently, and SDV technology allows the cable operators to do so. Unfortunately, as designed, one-way UDCPs are not capable of accessing SDV channels: SDV channels require two-way device functionality. In order to address this issue, the cable industry has worked with CE companies such as TiVo to arrive at a solution that can provide two-way SDV channels to one-way digital cable products through an external device attachment to the UDCP.

Under this approach – arrived at through private discussions outside of regulatory compulsion – a small “Tuning Resolver” adapter could be made available to the UDCP consumer. With only firmware modifications to new UDCP products, and a USB 2.0 connection, properly equipped UDCPs could receive programming offered on SDV channels. Many currently deployed UDCPs, including TiVo DVRs, have one or more USB 2.0 connectors and might even be upgradeable with firmware for SDV.

Licensing and testing of this optional feature of a UDCP will be provided under the existing DFAST agreement in a manner similar to that submitted to the FCC by various signatories (TiVo, Motorola, Digeo, Solekai, Digital Keystone, and ViXS) for the optional M-CARD

interface for UDCPs.⁶⁸ That is, execution of a DFAST addendum, one-time verification testing, and self-verification thereafter.⁶⁹

III. THE CEA PROPOSAL SHOULD BE REJECTED ON POLICY GROUNDS

Unlike the NCTA proposal which embraces OpenCable marketplace solutions to bring two-way products to market right now, the filing submitted by CEA will not bring two-way plug-and-play products to market soon – if ever. Proponents claim that the CEA proposal “is technically feasible and relatively inexpensive to implement, reasonable from the business perspectives of all affected industries, and good public policy.”⁷⁰ It is none of those things.

Although cloaked in consumer-friendly rhetoric, the CEA proposal would disappoint, confuse, and frustrate cable customers. DTVs labeled as “cable ready” under the CEA proposal would in fact strip away cable services, features, parental controls, privacy profiles, and more – and each television would do so in different ways. These DTVs would be instantly archaic. They could not receive all of the interactive services offered today by the cable operator, and would be shut out from new services in the future. Consumers would have no assurance that they would receive the same services from the same cable subscription on different models of

⁶⁸ Nov. 13, 2006 joint submission in this docket by CableLabs, TiVo, Motorola, Solekai, Digeo, Digital Keystone and ViXs to implement Multi-stream CableCARDs for UDCPs.

⁶⁹ Some verification testing is required, but it is likely to be minimal. For SDV to operate properly, the host must operate correctly with the cable headend when an end user has tuned away from a switched channel, or when the channel has remained unchanged with no evidence of user involvement or interaction (*i.e.*, the user leaves the TV on and tuned to the switched channel, but then walks away from the TV for some extended period of time). Here, the host should act in sync with the headend to notify the end user of the pending switch (for example, display “are you still watching?”) before the reclamation of the channel.

⁷⁰ CEA Proposal at 1. In a subsequent filing, CEA said that the CEA “proposal is a substantially more cable-friendly approach than CE’s earlier positions on two-way plug and play.” *Ex parte* letter from Julie M. Kearney, Senior Director and Regulatory Counsel, CEA, to Marlene H. Dortch, Secretary, Federal Communications Commission (Dec. 8, 2006) at 3. Whether or not that is correct, the CEA proposal is hardly cable or consumer friendly.

televisions, yet CEA makes no provision for consumer education. Some call this the “DCR-plus” solution; it is more aptly called the “consumer-minus” solution.

The CE companies believe that they should be permitted to test the market for limited capability devices such as DCR+. ⁷¹ But CE manufacturers are not the only ones at risk. As demonstrated below, the rules proposed to implement the DCR+ proposal would require significant changes to cable system operations and facilities, frustrate if not freeze cable’s innovation in consumer services; assume the clearance of intellectual property that CE manufacturers have demonstrated an unwillingness to even attempt to understand, let alone clear; and *would provide absolutely no assurance* (let alone any FCC requirement) that any CE company would ever build a “DCR+” device – or that any consumer would want one of these instantly obsolete devices if they were ever built.

The cost of this experiment would fall on all consumers and cable operators, whether or not a single “DCR+” is ever built. CEA would require cable operators to invent and support standardized protocols for adding VOD, SDV, impulse pay-per-view (“IPPV”) and electronic program guides (“EPG”), application by application, to the existing one-way “digital cable-ready” devices. This represents a massive reengineering of cable operations, services and facilities at a staggering cost in money, resources, and – as proposed by CEA – a unique freeze on cable innovation until multiple standards procedures are concluded and the underlying intellectual property rights of myriad vendors are resolved. That cost would be suffered by all cable customers, solely to provide CE manufacturers the “option” to build a device (perhaps) and

⁷¹ As Pioneer Electronics Vice President Adam Goldberg says: “We need something that allows us to build products that do bidirectional interactive features, without all the bells and whistles of the [OpenCable Platform] system.” See Tam Harbert, “*Long Road to Open Cable for Consumer Electronics*,” ELECTRONIC BUSINESS, July 24, 2007, available at <http://www.edn.com/article/CA6462497.html>.

sell it (they hope) to a tiny fraction of consumers, or to none at all. We must not repeat the failed UDCP experiment.

The Commission cannot ignore the enormous consequences that adoption of the CEA proposal would hold, and those consequences are reflected in the record of this proceeding. Further, it is imperative that the Commission understand the significant and unwarranted interference in the marketplace that adoption of the CEA proposal would entail. In light of these consequences, adoption of the CEA proposal would be arbitrary, capricious and an abuse of the Commission's discretion.

A. The CEA Proposal Would Create Consumer Confusion Over the Services Their "Cable Ready" DTV Sets Would Access

Cable operators have spent over \$110 billion in building broadband networks, buying equipment, and designing their networks to deliver state-of-the-art, rapidly-evolving interactive services to their customers. These cable-delivered services, Caller ID on TV, DVR programming via cell phone, instant polling/voting, interactive advertising, and such new services as Start Over™, are being deployed today. The CEA proposal would force the cable industry to disassemble its services so CE companies can repackage cable's offerings as their own for viewing on their devices.

Consequently, so-called "digital cable-ready" DCR+ televisions will *not* deliver cable services as consumers have bought them and expect to receive. Such DTVs would strip away services, features, parental controls, privacy profiles, reminders, T-commerce, chat rooms and more. DTVs labeled as "digital cable-ready" under the CEA proposal could not receive all of the interactive digital services currently offered by the cable operator or those developed in the future, including services that integrate voice, video, and data features. Cable services that are integrated across platforms may not work as advertised by the operator. Indeed, a consumer who

owned three different models of DCR+ televisions would have no assurance that any one of them would receive the same services from the same cable subscription – only parts of the service might appear on DTVs manufactured by different manufacturers, and then in different ways. Such limitations would likely disappoint, confuse, and frustrate cable customers, and since the CE proposal makes no provision for consumer education, CE manufacturers or retailers would not be required to explain these potential problems. Cable customer service representatives would be hard pressed to field calls and complaints from angry customers about such devices.

DTVs built to the CEA proposal would be instantly archaic. They would be incapable of receiving cable's rapidly developing interactive services. CEA seeks to dismiss the very interactive features that distinguish cable service from the competition as too "advanced" for them to support, but these features are becoming commonplace and will be expected by consumers well before a DCR+ could ever hit store shelves. The CEA proponents are repeating the UDCP mistake of four years ago when they told the cable industry that cable customers only wanted linear cable channels and had no interest in VOD. When CE manufacturers finally built those limited UDCPs, the consumers who bought them wanted the VOD that those devices did not deliver. Those CE manufacturers underestimated how quickly cable services develop, and how rapidly consumer tastes changed to make VOD a "must have." The current proposal to create "two-way" devices essentially limited to VOD is equally blind to the rapid evolution of cable's interactive programming, and will likewise disappoint and confuse cable customers.

The CE proposal would also remove almost every other element from a "digital cable ready" retail device that would provide a predictable consumer experience. Consider these changes: It would place no obligation on CE devices to provide the minimum amount of memory that cable services and applications need to ensure that devices sold as "digital cable-ready" can

actually render cable services. It offers no assurance against a CE device technically disrupting, impeding or impairing the delivery of services to the cable customer or to his neighbor – *something to which CE companies agreed for the far less risky one-way devices*. It provides for none of the remote control keys defined by cable to allow consumers to access nationally-available cable services and applications (such as interactive features of national cable networks). It provides no means by which the cable operator’s electronic program guide would continue to be updated in the background, as it is in set-top boxes. It does not even provide customers with the non-discriminatory opportunity to use the cable operator’s guide. It provides no boot process, provisioning process, or diagnostic tools to allow customers to unpack a new DTV and set-up cable services. The CEA proposal is the antithesis of a consumer friendly cable-ready device.

At one point, CE justified its proposal as providing the “option” to build set-tops like the low-end sub-\$100 set-top boxes for which several operators sought integration ban waivers. As almost all cable operators were denied waivers, and the devices proposed by CE explicitly include HD (and even DVR) features apparently prohibited by the Commission in “low end” products, this supposed justification has been mooted. Moreover, CE manufacturers have always had the option to build low cost devices, but only Pace took it. Currently, the lowest priced “digital cable ready” product is a limited capacity DVR for \$300, plus monthly subscription fees. The others are \$1,000-\$8,000 HD devices. CE manufacturers offer no commitment to build anything else.

B. The CEA Proposal for “Standardization” Would Paralyze Innovation in the Rollout of New Cable Services and Technologies and Impose Substantial Costs on Cable Customers and Cable Operators Alike

CEA proponents suggest their proposal is “fair and constructive,” “technically feasible,” and “relatively inexpensive to implement”⁷² It is none of those things. Rather, the proposal insists that the cable industry be required to provide selected two-way services through specific standards or “protocols” designed for each application. Rather than supporting the existing OpenCable Platform, the CEA proposal would require the cable industry to undertake, at its own expense, a major redesign of every part of cable architecture, including VOD, guides, DVRs, CableCARDS, and leased set-top boxes. We describe these enormous and unjustified mandates below. The CEA proposal would be the most intrusive regulatory regime ever established, and one that would fly in the face of the Congressional admonition that the FCC must “avoid actions which could have the effect of freezing or chilling the development of new technologies and services.”⁷³

1. The CEA Proposal Ignores the Realities and Delays of Standards Processes.

The proponents of CEA claim that standards and protocols exist and solutions can be implemented with no significant changes in existing infrastructure.⁷⁴ In fact, there would be massive standards activities required in multiple standards bodies for multiple services,

⁷² CEA Proposal at 1.

⁷³ H.R. Rep. No. 104-458, at 181 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 194 (“*Conference Report*”). The Commission has previously held that “[i]t is not our intent to force cable operators to develop and deploy new products and services in tandem with consumer electronics manufacturers. Cable operators are free to innovate and introduce new products and services without regard to whether consumer electronics manufacturers are positioned to deploy substantially similar products and services.” *Second R&O*, 20 FCC Rcd at 6809, ¶ 30.

⁷⁴ Sony’s presentation deck of Nov. 2, 2006, for example, promises this DCR+ solution:

- “• Rely on the same standards/protocols used by the legacy systems
- “• Works across all networks (does not disadvantage consumers in low density/limited channel capacity networks)
- “• Does not require significant changes to existing infrastructure.
- “• Could be equally applied to future Software Implementations.”

interfaces, and technologies, including: the CableCARD interface, CableCARD Copy Protection, EPG metadata (network and interface), SDV (network and interface), IPPV (network and interface), VOD (network and interface) and DCAS.

Standardization, and related intellectual property clearances, is an extremely time consuming process. Even where parties agree on a solution, such as bringing Emergency Alert Service into joint CEA and SCTE standards, the process of comment resolution and reconsideration ballots (in SCTE) or pre-ballot comment resolution (in CEA) and adoption took *two and one-half years*.

Where parties interests diverge, standards processes take even longer. For example, changes to ANSI/SCTE 40 was a key element in the one-way MOU. The cable industry had ten years earlier chosen QAM rather than VSB as the method for digital cable transmission. Zenith, the intellectual property holder for the rejected VSB system, sought to use the process of amending SCTE 40 to put VSB transport into SCTE 40. It slowed the standards process by submitting the majority of objections to SCTE 40 and an unsuccessful appeal to ANSI, in an effort to impose VSB transport onto the cable architecture. This process took years to resolve.

Similar efforts delayed efforts by cable and CE manufacturers to adopt a joint test suite for UDCPs, which makes normative reference to SCTE 40. CE manufacturers refused to build retail devices that met the specifications followed by manufacturers of leased set-top boxes to isolate signal from noise. At the time, all cable operator leased set-top box vendors used dual conversion tuners in order to work well across the nation on cable systems with various degrees of noise. CE manufacturers insisted on cutting their own costs by pennies with single conversion tuners and sought to shift the costs of the change to cable operators' networks. After years of dispute, and with the pressure of looming FCC deadlines, CE got what it wanted in the test suite,

but the upshot was that these (cheaper) retail devices would not work where leased devices would, *unless cable installers rewired the entire premises.*

Similar delays and complications would be highly likely given the sheer scale of standards activities that would be need to be undertaken to implement DCR+.

2. CEA Proposes to Freeze Cable Offerings Until Standards Are Established.

What is uniquely and extraordinarily harmful about the CEA proposal is that it would prohibit the cable industry from offering innovative services until there are “standards” resolved. That is a recipe to destroy innovation, to impoverish consumer choice, and one that CE would never tolerate for its own offerings. Indeed, although CEA claims that it must impose fixed standards on cable to compete, the market is filled with their own competing, innovative offerings vying for consumer appeal without adherence to standards.⁷⁵ CE, IT, and competing MVPDs do not operate under the constraints on innovation they propose for cable. Instead, they

⁷⁵ For example, although digital over-the-air broadcasting uses 19 methods, every TV manufacturer has found a way to include in every TV the digital ATSC tuner which can read the different broadcasts. These manufacturers sell both HD DVD and Blu-Ray players. In MPEG-4, there are multiple flavors and versions of advanced codecs. In 802.11, there are multiple “pre-n” versions for sale. CE manufacturers offer non-standardized, non-interoperable music players, remote controls, menus, computer memory, gaming stations and games, and continue to offer new services that don’t work on old devices. Even when CE companies adopt “standards,” they do not themselves implement in an interoperable way. After the cable industry agreed to put 1394 connectors on set-top boxes, the 1394 devices manufactured on retail devices do not follow standards. The widely recognized problem led Japan to effectively abandon 1394 two years ago. Differing CE implementations of HDMI have led to a cacophony of non-interoperable “standard” interfaces that has driven a major national retailer to demand a new testing and certification regime for CE devices to straighten out the mess and assure interoperability. *Retailer Requires ‘Simplay’ HDMI Testing*, TWICE, Dec 11, 2006, available at <http://www.twice.com/article/CA6398917.html> (a “major national retailer” is notifying suppliers that it will require all HDMI-enabled products to go through Silicon Image’s “Simplay HD” testing program, or some other third-party certification process for compatibility and interoperability in order to qualify for its product mix in 2007, David Naranjo, Mitsubishi Digital Electronics America product development director, announced at a press conference for HDMI Licensing. *The move comes in reaction to the difficulty some consumers are experiencing in connecting HDMI and DVI products with other noncompliant HDMI or DVI devices. In many cases, non-complaint products are failing to complete a “handshake” – a process whereby products recognize and talk with one another in order to begin sending and receiving signals.* “We released a new compliance test spec for HDMI v1.3 – called the 1.3a test spec – that requires HDCP testing for all devices. In the first quarter of next year, every device is going to have to go through HDCP testing in addition to the basic HDMI testing,” said Chard. “This is a test spec that has been reviewed and blessed by Intel subsidiary Digital CP.” (emphasis added). For an illustration of how consumer electronics manufacturers discontinue support for deployed products, see, e.g., “US Sony Clie Developer Support to End,” <http://www.palminfocenter.com/news/7296/us-sony-clie-developer-support-to-end/> US SONY OPENMEDIA GATE SUPPORT: US SONY MINIDISC SUPPORT; ALL DEAD WITHIN 5 YEARS.

rapidly innovate their products and services, rolling out new products with non-standardized, non-interoperable interfaces, and features. Sony has not held its PS3 waiting for an ANSI standard game and gaming station interface. Studios have not had to hold the release of high definition movies to consumers while waiting for a conclusion of the long running competition between HD DVD and Blu-Ray. DBS, Verizon, and AT&T all rely on integrated leased set-top boxes for the launch of new services, without regard to standards or the ability of CE manufacturers to provide retail substitutes for those MVPD set-tops.

All of these companies innovate and deploy new services without waiting for standardization or government permission. Applying the restrictions in the CEA proposal only to cable would be an unprecedented and discriminatory government intervention in the private marketplace, and deny consumers the opportunity to receive the most innovative services that cable has to offer.

CEA has placed standardization ahead of innovation and consumer choice. If standards must be resolved before cable is “unfrozen,” the wait will be indefinite. As discussed in the next section, video-on-demand and electronic programming guides are laced with patents and patent claims – but CEA disingenuously suggests that these vendors will instantly agree on a standard and pool their intellectual property (something which, despite CEA’s claims to the contrary, *did not* happen with program guides for one-way products). If standards are required as a condition to innovation, then the standards processes will not only delay innovative offerings to consumers, but can be used as vehicles to push through proposals over the objection of key stakeholders. For example, in August, 2007, CEA tried to use the standards process to widen the analog hole to 1080p – directly contrary to interests of content suppliers on whom cable is dependent. Such standards efforts pit the interests of device manufacturers against the interests

of content providers – to the detriment of cable operators and consumers, caught in the middle. The CEA approach will only result in massive delays, to the prejudice of consumers and market competition.

3. The CEA Proposal Ignores the Realities of Intellectual Property Rights.

There is no indication in the CEA proposal how CE companies would deal with the hundreds of patents around which VOD, IPPV, and EPG vendors have specifically designed their products in order to avoid patent infringement claims and to provide adequate intellectual property indemnification in commercial contracts. This careful structure would be shattered under the CEA proposal.

EPG serves as a good example for how this would happen. The CEA proposal demands an elaborate reworking of cable networks and guides in order to permit CE manufacturers to extract guide data to build their own home grown guides. CE manufacturers had likewise assumed that they would grow their own program guides for UDCPs. That prediction fared poorly, because CE manufacturers failed to appreciate the complexity of intellectual property rights in this field. The EPG space has a notorious past of patent litigation and large law suits.⁷⁶ Gemstar's claims extend to such basics as *pointing* to an entry in a grid guide and *clicking* to tune the channel. Cable operators themselves have had to pay more than \$400 million to clear the intellectual property rights to offer their own EPGs. Other MVPDs have recognized the same

⁷⁶ Gemstar-TV Guide, Scientific-Atlanta Settle Patent Lawsuits (June 2, 2005), <http://www.socaltech.com> ('The companies estimated that license payments from Scientific-Atlanta to Gemstar-TV Guide would be worth \$154M, and payments from Gemstar-TV Guide to Scientific-Atlanta \$89M.'). See also these highly litigated patents owned by Gemstar: U.S. Pat. No. 6,262,722 INTERACTIVE PROGRAM GUIDE NAVIGATOR MENU SYSTEM; U.S. Pat. No. 5,479,268 USER INTERFACE FOR TELEVISION SCHEDULE SYSTEM; U.S. Pat. No. 5,809,204 USER INTERFACE FOR TELEVISION SCHEDULE SYSTEM; U.S. Pat. No. 4,706,121 TV SCHEDULE SYSTEM AND PROCESS; U.S. Pat. No. 4,751,578 SYSTEM FOR ELECTRONICALLY CONTROLLABLY VIEWING ON A TELEVISION UPDATEABLE TELEVISION PROGRAMMING INFORMATION; U.S. Pat. No. 5,038,211 METHOD AND APPARATUS FOR TRANSMITTING AND RECEIVING TELEVISION PROGRAM INFORMATION; U.S. Pat. No. 5,293,357 METHOD AND APPARATUS FOR CONTROLLING A TELEVISION PROGRAM RECORDING DEVICE.

myriad intellectual property rights required and taken licenses.⁷⁷ Thus, even if a commercial provider of guide data sold that data to a CE manufacturer, they would not be able to simply create a guide without negotiating through the relevant intellectual property. CE manufacturers have had four years to create and add their own program guides to one-way digital cable-ready DTVs. Between CE's unwillingness to spend the same money as cable, and Gemstar's understandable preference to sell its service, rather than to license its patents, every retail DTV has either chosen to use the Gemstar guide or has provided none at all.⁷⁸ CEA's current proposal – which focuses on extracting data that it cannot use – makes no effort to confront the realities of intellectual property in this area.

Likewise, VOD vendors have intellectual property rights that will not magically disappear through the proposed VOD “standardization” effort. For example, a standards body might well want a “standard” VOD application to include DVD “chaptering” – the ability for the consumer to jump to a specific section of the video. They would discover quickly that SeaChange owns patents in this area.⁷⁹ VOD system suppliers (and for that matter, SDV suppliers) use intellectual property as the basis of their business. The CEA proposal offers no assurance that patents would even be licensable, let alone at what cost, or after how many years of intellectual property clearance efforts.

⁷⁷ Gemstar-TV Guide In Deal With Verizon (May 2, 2007), <http://www.socaltech.com>); *id.*, Gemstar, Yahoo In Licensing Deal (Sept. 15, 2006).

⁷⁸ Gemstar Grants Patent License To Pioneer (Aug. 30, 2005), <http://www.socaltech.com>); *id.*, Gemstar-TV Guide, LG Electronics in Licensing Deal (Jan. 8, 2004); *id.*, Gemstar-TV Guide Extends Mitsubishi License (July 18, 2007), *id.*, Gemstar Expands License With Sony (Mar. 24, 2005); *id.*, Gemstar Signs Samsung (May 2, 2006) (“Gemstar holds patents covering its VCR Plus system for setting up VCR recording times, along with patents around interactive programming guides, and has licensed that technology to a large number of electronics manufacturers.”).

⁷⁹ *nCUBE Responds to SeaChange Patent Suit*, MULTICHANNEL NEWS, June 2000; *VOD Patent Battle Turns Bitter*, CABLE WORLD, Jan 15, 2001 (“nCUBE's patent appears to be fairly broad, describing a fundamental process that covers, among other things, video-on-demand (VOD).”); *nCUBE claims Victory in VOD patent spat*, CED, July, 2002 (“The jury also ruled that SeaChange must pay nCUBE in excess of \$2 million in damages, plus a seven percent royalty on all sales of infringing products after Feb. 1, 2002.”).

By contrast, a commercial, international patent pool for the core OpenCable Platform middleware already exists. After two years of solid work the royalties have been agreed upon and established. CEA has completely failed to account for the time and cost in obtaining intellectual property rights to make their proposal a possibility.

4. The CEA Proposal Would Delay Every Subsequent Advance in Cable Services.

The CEA proposal would effectively freeze today's cable services in their current state and prohibit new innovations which would otherwise benefit consumers. The proposal would require use of a particular, fixed version of the OpenCable Platform middleware. Cable could not change its middleware – even in leased devices – without an FCC rulemaking or the approval of a supermajority of CE manufacturers – including manufacturers who are *not* licensed to use the OpenCable Platform middleware. OpenCable Platform changes are used to implement lessons learned from testing new devices or working with CE manufacturers. For example, version 1.0 cited in our November 2005 filing has since been updated to version 1.1 to include the agreed upon method for cable and CE to share resources in a combined device. Extensions to OpenCable facilitate DVRs and home networking. It makes no sense to subject each such change to a federal rulemaking or “vote” by CE before consumers may enjoy their benefit. These requirements would slow innovation in new cable services to a grinding halt, to the direct detriment of consumers.

The proposal also mandates that cable may not offer any new interactive services without first submitting them to CE manufacturers for their testing 60 days before widespread deployment. This new barrier would precede, and perhaps preclude, the prompt, efficient introduction of other encoding technologies besides MPEG-2 (such as H.264 AVC, etc), SDV

and VOD, and other services cable operators need to compete in an increasingly-competitive video market.

The CEA proposal is likewise deficient in that it does not account for technology that has already passed it by. For example, the CEA proposal fails to recognize the diversity of network infrastructure in use by cable operators for digital video services. Cable systems currently use two forms of out-of-band control signaling, plus a newer form of communications path through the DOCSIS Set-top Gateway (DSG), to which cable operators are rapidly transitioning. Almost all of Cablevision's systems use DSG, for example. CEA's proposal, however, relies exclusively on out-of-band signaling, either meaning that CEA is indifferent to whether its DCR+ solution works in New York, or intends to force the cable industry to reverse course, go back to legacy out of band signaling and not update networks to the more popular DSG method for signaling.

C. The CEA Proposal Requires Numerous New Inventions

Under the CEA proposal, current cable technology development and deployment would have to be stopped and redesigned. As we describe below, the CEA proposal discards all of cable's work and requires the rapid re-creation, development and deployment of many new inventions.

1. New VOD Protocol.

A new protocol would need to be invented to provide DTVs with access to the cable operator's interactive VOD service without using OpenCable Platform middleware. CEA has assumed that VOD operates like a channel and may use SCTE-65 "channel-type" to describe VOD offerings. VOD is not a "channel"; rather, the VOD service provides access to an unlimited "library" listing. The carousel method specified by SCTE-65 is entirely ineffective to handle an unlimited list of services. New connections would need to be invented, developed and standardized between the headend and set-top to enable delivery of VOD programs, and "trick

play” playback such as fast forward or pause. The unique and proprietary menu structure used by each VOD vendor would need to be restructured, and the upstream channel from the home to the headend redesigned, so that CE devices could browse the new menu through a (yet to be invented) standardized folder-subfolder. A comparable menu structure was studied and rejected ten years ago by cable because it does not work on modern cable systems and presented a simplistic and non-extensible offering to consumers – but CEA is indifferent to engineering realities in cable. Significant harmonization and standardization of VOD protocols, SDV protocols, and metadata would all be required. This would require significant changes to headend equipment that currently work with specific vendor equipment. All cable operator VOD vendors would also need to revise their programming data and program descriptions, and somehow “give up” their intellectual property rights in these areas. FCC rules would need to override existing contracts, technologies, and intellectual property rights.

CEA has made no provision for integration of this new VOD protocol with the many different cable billing systems that exist today. In some places, the proposal says that such specifications must be “developed in an open process by a consortium of cable operators and device manufacturers.” Yet in other places, it requires that every specification be approved by a mutually accepted standards body. But, conversely, CEA is proposing that the integrity of the cable operator’s billing for customer purchase of VOD titles (and the integrity of payment to VOD program suppliers) be entrusted to an uninvited, untested native application inside a retail television that CEA does not wish to present for testing or certification.

Further, the standards cited by CEA for VOD support in its Technical Requirements Appendix are incorrect or inapplicable. CableCARDS were specifically *not designed* to address

IPPV under SCTE-28; this is clear from the standard itself.⁸⁰ The CEA proposal does not even account for the complex and proprietary communication required between the host and the headend, which is more complex than simply placing a chip on a new board as proposed. For example, CEA's proposal to request authorization from the headend on a service-by-service basis in compliance with SCTE-28 for VOD services is not used by Motorola systems. As another example, if the VOD session set-up and management is proposed to be handled by the conditional access technology, it forces the CableCARD to become IP aware. This means the CableCARD will need a complete IPv4 stack and a complete IPv6 stack. It will also be forced to have DHCP (Dynamic Host Configuration Protocol) capability and be able to distinguish between two-way communication via radio-frequency out-of-band and DOCSIS/DSG. This will result in a significant hardware change to the CableCARD, and likely a new form factor.

CEA also proposes use of "reserved" fields in SCTE-65. Extensive testing would be required to ensure no harmful side-effects would result from adding new data in "reserved" fields. We have no insight as to how each CE manufacturer has implemented a response to "reserved" fields in UDCPs or other fielded devices, or what uses of "reserved" fields for other functions would cause fielded devices to break or malfunction.

VOD protocols are proprietary protocols that CEA has made no credible effort to understand. VOD is implemented with separate and distinct applications outside of the CableCARD, and is different for each type of network used by a cable operator. For security, the information of the VOD content is transferred in a proprietary format and transactions also occur in a proprietary manner. The impact of standardizing all this through SCTE-28 would mean a complete overhaul of the entire VOD system for the network side. It is for this very reason why

⁸⁰ Section 8.10 of SCTE-28 (2003) begins with the following text: "NOTE--The Generic IPPV Support resource is being deprecated, though it may still be in use; the preferred approach for supporting IPPV is to use the appropriate OCAP application."

the cable industry adopted the OpenCable solution, which translates such applications into a form that can be readily understood by leased and retail OpenCable bidirectional devices.

2. New Program Guide Protocols.

The proposal would also require that programming data necessary to populate EPGs would be made available without the OpenCable Platform, via yet-to-be-invented protocols. The cable and CE industries both specifically agreed in the one-way MOU that interactive devices would provide EPGs via the OpenCable Platform middleware.⁸¹ Cable operators' interactive guides have since been ported to the OpenCable Platform to provide retail DTVs with full access to the EPG. Under CEA's proposal, all cable operator program guide vendors would instead need to deliver data in a yet-to-be-standardized guide form.

The carriage of new "profile" data proposed by CEA looks to a profile (SCTE-65) that cable operators do not use, and would require a new headend/server architecture and new ways to utilize bandwidth on the plant. Switching to Profile 4 will be costly to implement, and use significant bandwidth.

The reason behind CEA's proposal is to allow CE manufacturers to strip the program descriptions (and other information) from the cable operator guide and use them to rip, mix, and burn their own CE guides. This is without question an illegal scraping of content, misappropriation, passing off, and violation of copyright.

In addition, this proposal ignores the fact that cable operators do not own the EPG metadata they use in their own guides. This is the property of other companies who charge service providers and device manufacturers alike for the data. There is no such thing as

⁸¹ "Cable operators' EPG will be provided for advanced interactive digital cable products via [the OpenCable Platform] or its successor technology." *Navigation Devices FNPRM*, 18 FCC Rcd at 548. Sony, Mitsubishi, Philips, Pioneer, Hitachi, JVC, Panasonic/Matsushita, Samsung, Sharp, Thomson, Toshiba, Zenith, and the rest of CEA's Video Board were parties to the agreement.

“publicly available” metadata –any that is available must be obtained pursuant to private agreement or is ad-supported via the Internet. CEA is asking the FCC to cavalierly override existing contracts, property rights, and copyrights.

3. New Impulse Pay-Per-View (IPPV).

The CEA proposal for IPPV implementation also ignores the existing requirements for the service. CableCARDs were specifically *not* designed to address IPPV under SCTE-28; this is clear from the standard itself.⁸² The CEA proposal requires real time communication between the CableCARD and the headend and updating various tables. For example, once ordered, an IPPV event could never be cancelled. This will again require a major re-architecture of the cable network and the CableCARD.

4. No Switched Digital Video.

The proposal provides that no cable operator would be able to deliver any linear service on an on-demand SDV basis (that is, *the way in which AT&T delivers all of its services*) until a new kind of television, new CableCARD, and new kind of *bidirectional* connection to the cable network are invented so that *unidirectional* devices can also receive these channels. This would put on hold current efforts to use SDV to expand cable network capacity to meet the digital broadcast transition, and for such consumer benefits as more HD channels, higher-speed data rates, digital simulcast networks, increased offerings of VOD, continued development of new program networks, and telephone service. This is unacceptable to cable operators and our customers.

⁸² Section 8.10 of SCTE-28 (2003) begins with the following text: “NOTE--The Generic IPPV Support resource is being deprecated, though it may still be in use; the preferred approach for supporting IPPV is to use the appropriate OCAP application.” There is no requirement for the CableCARD to support the IPPV resource without the OpenCable Platform. It does not work and never has been implemented or tested. Significant new design work is necessary to add this capability.

5. New M-Card.

Under the CEA proposal, the current multi-stream CableCARD must be redesigned to include set-top navigation functionalities, more processing power, and more memory not just to handle separate security, but also to process video and on-demand protocols, SDV, EPG calls, and IPPV in real time. An assessment of the leading CableCARD vendor sums up this proposal: “CEA and Sony have made a proposal that completely redefines the architecture of the CableCARD. It would require the re-write of industry specifications and essentially require a complete re-development of the CableCARD. This effort would consume at least three years.” To boot, this effort can only commence after the protocol standards proposed by CEA have been promulgated. The new card would require a different form factor, thereby being incompatible with the Host slots accepting M-cards. The new CableCARD Host interface would appear to replace DFAST – which is relied upon by all CableCARDS to provide programming securely to Hosts – and use instead a new “open, standardized” format and APIs adopted by an ANSI-accredited standards body and approved by the FCC.

Instead of using the current OpenCable component of the OpenCable Platform, the CEA proposal essentially requires that new standards be developed with the same capabilities as the OpenCable Platform, and then shoehorned into a CableCARD to be used in non-OpenCable based hosts. The proposal is essentially moving all OpenCable Platform functions of EPG data reception, VOD, SDV, and IPPV into the CableCARD, and leaving just the actual navigation user interface in the host.

To accomplish this, the CEA proposal forces the CableCARD to add significantly more memory, both RAM and Flash, and processing power to its current architecture. This will require a complete redesign of existing hardware including ASICs, and will take several years of development time – after standardization of the protocols.

The currently-deployed SDV, VOD, and IPPV implementations and applications are network-specific, and have been operated in that fashion by every cable operator since inception. The OpenCable Platform abstracts network-specific differences into a common set of APIs. The CEA proposal mandates that no network-specific requirements may be imposed on the manufacturer. Without OpenCable, this would force the CableCARD to incorporate and control not only an RF out of band tuner, but a new application to communicate upstream. This will result in a significant hardware change to the CableCARD.

By contrast, a new network interface device (discussed in Part V) can be designed to work with current cable architecture, rather than requiring a complete redesign. Rather than working with existing network architectures, CEA's proposal for an enhanced M-card calls for a massive redesign of card and network.

A lengthy development effort is required to build these capabilities into the CableCARD, to pass through standards bodies, and to be adopted by rule. Yet the CEA proposal suggests that all this will happen by January 1, 2008 – something which is, in fact, impossible. After all that redesign, at best this enhanced CableCARD would deliver only a poor derivative of cable services, fixed in time by “standards” that prevent consumers from enjoying the cable services they can receive today on cable, and that lock them out of the rapid innovations in cable services to come in the future.

6. New Leased Cable Set-Tops.

Under CEA's proposal, cable operators would also, upon customer request, be required to provide leased set-top boxes with a new output that delivers content to DLNA home networks, regardless of the level of content protection provided by such outputs, or any restrictions contained in agreements the operator has with his content suppliers. In addition to shouldering the costs of the integration ban to date, all cable systems would also be required to buy a

substantial percentage of leased boxes that use the *re-engineered* M-Cards, and another substantial portion that use existing M-cards (meaning that cable operators would now be buying set-top boxes with *two versions* of M-cards.) This dual CableCARD requirement would continue even after cable operators deploy the less expensive and more efficient DCAS solution. This proposal is arbitrary and capricious and irreconcilable with statutory and constitutional limits.

D. The CEA Proposal Cannot be Achieved in Time to Further the DTV Transition

Given the litany of required inventions, standards and intellectual property clearance, all divorced from market reality, and the strong potential for litigation, the CEA proposal cannot possibly lead to a more rapid deployment of two-way retail devices than is possible with the OpenCable Platform approach, for the reasons detailed above, certainly not in time to contribute to the digital broadcast transition. The proposal does not acknowledge that there are no standards, no intellectual property clearances, and no manufacturers to implement it. As noted above, massive and lengthy standardization efforts would be required to satisfy the CEA proposal. Cable's next generation of downloadable security would require a total redesign. The cable industry cannot simultaneously redesign the OpenCable Platform, redesign DCAS, get them promptly deployed, and develop a redundant one-off, service-by-service "protocols" approach designed solely to deliver a subset of cable services to a select few CE manufacturers who have no commitment to product plans, and no bona fide consumer interest. Again, the CEA proposal is entirely contrary to the congressional directive that the FCC must "avoid actions which would have the effect of freezing or chilling the development of new technologies and services."

E. The CEA Proposal Minimizes Content Protections

1. The CEA Proposal Opens Content to Indiscriminate and Unauthorized Redistribution.

Each content provider sells programming to specific distributors for specific uses and windows, often limited by certain time periods and geographic territories. Content providers generally insist upon and, in turn, require their content distributors to honor contract terms that respect and enforce these limitations, including terms governing security and presentation. They usually require that content distributors not give content to devices or domains to which content providers do not have privity, whether by contract, license or intellectual property right.

MPAA members, for example, not only produce major theatrical motion pictures (later released on VOD services, cable and broadcast networks), but also produce many of the major television series carried by cable networks. These program owners are under no obligation or government mandate to provide content to cable operators or any other particular platform. Cable operators must negotiate with each MPAA member for distribution rights, and must agree to meet each company's concerns over the protection of content – which covers copying, distribution, uses and outputs. Cable operators must be highly responsive to the security concerns of content providers, both to attract new content and to comply with their existing contract obligations to their current suppliers through affiliation agreements.

Historically, cable operators delivered secured digital programming from cable headends to cable customers by using conditional access technology and entitlement messaging at the headend linked to companion technology in set-top boxes provided by the operator. The CableCARD used in retail navigation devices is designed to provide access to this high-value programming, but there must still be protections against indiscriminate unauthorized redistribution of such programming. If new outputs and content protection technologies on retail

devices do not guarantee at least the same level of security provided by the operator's own devices, those devices could undo the secure platform on which content owners rely to make available their high-value content to cable operators and our customers.

The Commission has recognized that content protection tools must work in retail navigation devices to assure the operator's access to programming: "Service theft is a serious matter. Failure of access control or security systems will both interfere with incentives to produce programming for the market and to increase the cost of service to those who do subscribe."⁸³ Congress specifically prohibited the Commission from adopting regulations that would "jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service."⁸⁴ The importance of securing content cannot be overstated: for manufacturers, building "digital cable-ready" devices is an incremental business; but for cable operators, getting it right at the outset is essential to cable operators' entire core business. Get it wrong, and the flow of programming available to all cable consumers is put at risk.

The CEA proposal would require the immediate approval of all outputs and content protection technologies approved by the Digital Living Network Alliance ("DLNA"). Any subsequent output or technology approved by DLNA at any time would also be automatically approved as an output for cable programming. Although DLNA is an organization with which the cable industry works, it is effectively dominated by CE interests. This would replace the existing mechanism for approval of new content protection technologies associated with new

⁸³ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, CS Docket 97-53, Notice of Proposed Rulemaking, 12 FCC Rcd 5639, 5654, ¶ 31 (1997).

⁸⁴ 47 U.S.C. § 549(b). *See also Conference Report* at 181, *reprinted in* 1996 U.S.C.C.A.N. at 194 ("Cable and other telecommunications operators have a valid interest, which the Commission should continue to protect, in system or signal security and in preventing theft of service").

video outputs, in which studios and cable industry technical experts play an important role.⁸⁵

The cable industry's content suppliers have not been willing to turn control of the handling and "sharing" of all of their programming over to DLNA. The CEA proposal would permit cable subscribers to "view, move, store, and access cable content that they legally obtain without restriction, other than as necessary to protect theft of service, electronic or physical harm to the network, and in accordance with reasonable content protection requirements." This would include the movement of content to "to a PC or to a portable device," and movement of content beyond a home or location in which it was first received, use of content which many content providers very carefully delimit in their content affiliation agreements. "Reasonable" limits of content providers are, noticeably, not defined in the CEA proposal. Likewise, limits set by any cable operator in the cable subscription agreement are ignored. In addition to jeopardizing the availability of programming on cable for cable consumers, the CEA proposal would provide no right for the cable industry to ensure that a particular output or technology met any cable service quality requirements that are delivered as part of the cable subscription or that content providers expect as a condition to exhibiting their content.

Content owners repeatedly have made it clear to cable operators that, if cable does not assure security, they will place their most desirable product only on platforms such as DBS that have these security tools.⁸⁶ Because CEA's proposal would apply exclusively to cable, it would

⁸⁵ The cooperative process most recently resulted in the approval of DTCP-IP as a content protection technology for cable content on UDCPs and bi-directional devices.

⁸⁶ *See, e.g.*, Comments of the Motion Picture Association of America, Inc., in CS Dkt. No. 97-80 (Mar. 28, 2003) at 5 ("Content providers have long suggested to the cable industry that any license governing cable set-top boxes needs to include sophisticated content protection, so that cable is not placed at a competitive disadvantage in attracting quality programming vis-à-vis competing services such as satellite."); Letter from Fritz E. Attaway, Senior Vice President of Government Relations, MPAA, to W. Kenneth Ferree, Chief, Media Bureau, Federal Communications Commission, June 5, 2002, at Attachment at 1 (same); Letter from Fritz E. Attaway to Magalie R. Salas, Secretary, Federal Communications Commission, PP Dkt. No. 00-67, CS Dkt. No. 97-80 (Sept. 6, 2000) ("Either devices will respond to copy management instructions, or they won't. If they won't, they cannot receive high value, copy protected content."); Todd Shields, *Fast-Tracking Plug & Play*, MEDIAWEEK.COM (Apr.

place cable at a severe disadvantage in the MVPD marketplace to secure access to content. Every other MVPD is permitted to address and enforce content protections required by its content suppliers and its affiliation agreements. For example, every DBS set-top box is manufactured under the direct control of the DBS operators and uses integrated security, so DBS companies have exclusive control over which outputs and technologies are permitted and which are not. The same can be said for Verizon and AT&T. Cable operators would suffer an overwhelming competitive disadvantage if they alone were forced to approve insufficiently protective outputs and content protection technologies that, in turn, caused content owners to grant exclusive or earlier access to high-value programming to its competitors. Given this discriminatory treatment of cable operators, the CEA proposal is irreconcilable with all applicable statutory and constitutional limits.

2. The CEA Proposal Has No Output Controls for the Protection of High-Value Content.

The CEA proposal provides no mechanism for retail devices to channel high value content (such as early release content that is now available only on DVD) on a program by program basis only through select protected connectors. This tool, known as Selectable Output Control, is a key feature of bi-directional navigational devices to enable new business models based on interactive delivery of high-value and early window digital content, and was recognized by the Commission as a “functionality [that] might have future applications that could potentially be advantageous to consumers, such as facilitating new business models.”⁸⁷

7, 2003) (“Attaway said if cable alone adopts the plug-and-play standard, studios may shift movies to satellite services that could better defend against content theft.”), http://www.mediaweek.com/mediaweek/headlines/article_display.jsp?vnu_content_id=1858405.

⁸⁷ *Second FNPRM*, 18 FCC Rcd at 20911-12, ¶ 61.

New business models might include on-demand delivery of films in high definition format very shortly after their theatrical run, on-demand viewing of premium cable network programming before its regular run, or consumer offerings such as limited time “rentals.” But content providers are far less likely to pursue such models if the presence of unprotected or compromised outputs exposes that content in the highest quality formats to early-window theft and boundless redistribution.

Selectable Output Control enables these new business models from a technical standpoint by allowing this high-value, high-quality content to be transmitted securely over cable platforms through to devices via designated, secure, digital outputs, bypassing security risks associated with unprotected analog outputs or compromised digital outputs. It is for this reason that CableLabs, at the request of and with support from the MPAA and its member companies, has included the *tools* for Selectable Output Control functionality in the OpenCable Platform. The exercise of those tools is delimited through commercial negotiations in the marketplace and remains subject to Commission rule; but without the tool, the supposedly “digital cable ready” product will not only lack the content protection tools needed for it to receive the highest value content, but will handicap the cable platform itself.

In parallel contexts, such as the copy protection regime for high definition DVD’s and Blu-Ray, comparable tools (such as a “digital only token” and the sunset of unprotected analog ports) are being pursued. The Commission’s current regulations require a formal waiver before programs may be tagged for selectable output. To keep up with new business models, the rules should be updated, as they are in the OpenCable proposal. By contrast, the CEA proposal makes no provision for the tool, let alone the exercise of the tool.

The practical effect of the CEA proposal is to limit the capabilities of the newest “digital cable ready devices” and of the cable platform itself: it will prevent cable operators from creating new offerings and giving the consumer more choices, from providing incentives to consumers to upgrade their legacy analog equipment in order to access the new services, which, in turn, can contribute to the digital broadcast transition. The CEA proposal not only fails a fundamental requirement to secure content by modern standards, but disserves the consumer and the digital broadcast transition by erecting barriers to providing consumers with convenient access to high value content on cable.

3. The CEA Proposal Fails to Carry Programmers’ Interactive Enhancements to Programming.

One of the benefits of the OpenCable Platform is that it allows content to be enhanced for consumer enjoyment by including many interactive features, such as added viewer information about programs, music, polling, interactive advertising, voting, shopping, and other television enhancements. The CEA proposal makes no provision for carriage of such interactive enhancements, because it discards the OpenCable Platform on which they are based. Consumers will find themselves watching a program that is designed to be interactive, which is urging them to press a button to receive the total experience intended by the show, but which they cannot access. If a button is present, pressing it will take them nowhere. This is antithetical to efforts by content providers and cable operators to enhance and personalize the viewing experience, and directly affects the First Amendment rights of both cable operators and programmers seeking to enhance their programming.

4. The CEA Proposal Undermines the Delivery of Video-on-Demand.

As noted earlier, CEA is proposing that the integrity of the cable operator’s billing for customer purchase of VOD titles (and the integrity of payment to VOD program suppliers) be

entrusted to an uninvented untested native application inside a retail television that CEA does not wish to present for testing or certification. This fails to meet basic requirements for securing content, and the integrity of transactional payments for content. This is a significant financial and legal problem unaddressed by the CEA proposal.

5. The CEA Proposal Would Weaken and Delay DCAS Security.

The CEA proposal also seeks to weaken the cable industry's next generation of security technology for protecting content, the Downloadable Conditional Access System ("DCAS"). DCAS has been endorsed by cable's content providers, who have said that "[d]ownloadable security provides a superior means for cable MSOs to ensure that they can have the flexibility necessary to update the protections they employ to preserve the valuable programming services they provide to consumers."⁸⁸ CEA's own members have praised DCAS as "a compelling security solution that will help enable nationwide interoperability of advanced two-way cable services" that "benefits CE manufacturers by lowering material costs and reducing entry barriers in the digital cable receiver equipment market."⁸⁹ Yet, the CEA proposal would discard the DCAS secure microprocessor that has been endorsed at the Commission by cable's content providers, negate all non-disclosure agreements around DCAS development,⁹⁰ remove the security defenses built into DCAS (and other commercially successful deployed pay television security systems), and eliminate many of the core security features that enable cable operators to

⁸⁸ See CS Dkt. No. 97-80, Comments of MPAA (Jan. 20, 2006) at 1.

⁸⁹ Press Release, *LG Electronics, CableLabs Sign Downloadable Security Technology Agreement* (Jan. 4, 2006); Press Release, *LG Electronics, Comcast, NagraVision Conduct First Public Demonstration of Downloadable CAS Technology* (Jan. 4, 2006). To date, more than 90 agreements have been successfully negotiated in the private marketplace and are in place with companies working on DCAS development, including 17 full DCAS licenses. Under that licensing structure, the specifications for TVs and set-top boxes using DCAS have been developed in consultation with key CE vendors. The technology has been demonstrated to FCC Commissioners and staff and has been exhibited at the Consumer Electronics Show on retail equipment.

⁹⁰ Almost every consumer electronics product is developed using a non-disclosure environment. CE companies used non-disclosure agreements to develop AACs security for HD-DVD devices which will display the same high-end content that cable will be protecting with DCAS.

stay both competitive in a quickly changing technology environment, and to compete for high-end content to deliver to cable consumers.⁹¹ All of the changes proposed by CEA would not only handicap the security of DCAS, but would require DCAS to be reinvented, leading to extraordinary delay, yet CEA simultaneously demands that it be nationally deployed earlier. In any event, the proposals directly violate Congress' mandate that FCC not adopt rules that compromise security, and must be rejected.

F. The CEA Proposal for Device Testing is Inadequate

1. New and Inadequate Test Suite.

Under the CE proposal, all leased and retail devices would be required go through the same mutually-negotiated test suite. There are substantial reasons to be concerned that any test suite developed under the CE proposal would be insufficient to ensure the reliability and robustness of retail devices given that current problems with UDCPs are largely attributable to stripped down tests insisted on by CE as part of a mutually negotiated test suite. Indeed, retail DTVs today would not pass the rigorous performance testing that cable operators apply to their leased devices.

2. Self-Certification of Devices With Upstream Transmitters.

The one-way MOU explicitly acknowledged that two- way devices have the potential to cause significant harm to the private cable network. As such, the parties agreed that testing and verification above the level of simple UDCP devise would be necessary for IDCPS.⁹² Yet, the

⁹¹ To our knowledge, there are no purely "software based" downloadable security systems in retail-like devices such as are referenced in the CEA proposal. European cable systems, like those in the United States, rely on some element of hardware-based security. Even the "software" used in AT&T's IPTV set-tops is hardware based: it is delivered to a specific, proprietary set-top which controls the video path in hardware built to AT&T's specification – not to retail devices that go into the market without such constraints. Nor has CEA offered any solution for how a purely software downloadable security system could interoperate with the conditional access systems serving tens of millions of deployed set-top boxes.

⁹² *Navigation Devices FNPRM*, 18 FCC Rcd at 548 ("Advanced Interactive Digital Cable *n* (*n* = TV, Tuner, etc) Product Definition (This is a two-way product) * * * Interoperability Testing and Certification Requirements:

CEA proposal would allow CE manufacturers to self-certify all interactive devices after successful certification on “one device” by CableLabs – as with UDCPs. Such two-way devices send signals upstream across distribution networks shared by all subscribers. Therefore, they must be more rigorously tested than is proposed in order to guard against harm to the cable network and services.

CEA even proposes to test uncertified devices on “live” cable plant, despite the fact that unmediated transmission into the upstream compromises security and operational integrity. A signal inserted upstream to the headend can be at the wrong frequency, at the wrong level, start at the wrong time, not stop, and impair services such as high speed internet, VOD, and VOIP. It could also introduce malware into the system. Under any of these circumstances, the cable operator would need to rapidly isolate the problem to the node, and then to the household, which is a very difficult process.⁹³ Such disregard of the fundamental security of the cable network violates the fundamental Congressional mandate in Section 629 not to compromise system security.

3. Self-Testing on Live Cable Plant.

As proposed, CE would be allowed to test all new cable applications on their self-certified interactive products on live cable plant, requiring access to cable plant for a myriad number of devices and providers. Such interference with operator private property rights is unnecessary since testing at CableLabs on SA, Motorola, and NDS headends is already available,

Because of the complexity of this type of product, CE Manufacturers agree to a higher level of compliance, and of interoperability testing, leading to self-certification.”). Sony, Mitsubishi, Philips, Pioneer, Hitachi, JVC, Panasonic/Matsushita, Samsung, Sharp, Thomson, Toshiba, Zenith, and the rest of CEA’s Video Board were parties to the agreement.

⁹³ By contrast, to protect against such problems, retail DOCSIS modems are subjected to a full certification process, not self-certification as sought by the CEA proposal.

and the MOU contains specific provisions to assist CE manufacturers in establishing their own test headends if they do not wish to use the CableLabs development and testing facilities.⁹⁴

G. The CEA Proposal Requires Cable to Subsidize CE Products

1. Free Redesign of Cable Network and Equipment.

The redesign of all cable headends, distribution systems, and set-top boxes required by the CEA proposal would be entirely at the cable industry's cost – with all cable customers ultimately bearing that cost -- solely to provide CE manufacturers the *option* to build a device and perhaps sell it to a tiny fraction of consumers, or to none at all. Imposing this heavy burden imposed on cable customers – without any corresponding benefits – violates the Constitution, subverts the intent of Section 629, and would artificially distort the intensely competitive video distribution marketplace.

2. Free Downloads for CE Manufacturers.

The proposal would require cable operators to provide free downloads of CE code images to retail DTVs (for example, to change software and firmware on defective or outdated televisions) rather than using the commercially-available alternatives. Firmware updates to TVs are already available to CE companies in the commercial data distribution market. For example, Update Logic offers a service using the PBS feed to directly update firmware in CE devices, to which Sony has already subscribed.⁹⁵ Similar services may continue to emerge through other ubiquitous networks – just as CBS recently announced a data distribution agreement with Gemstar.⁹⁶ CEA's demand that the Commission require that CEA members obtain this distribution service at no charge, while others purchase comparable service from unaffiliated

⁹⁴ *Navigation Devices FNPRM*, 18 FCC Rcd at 547, § 3.9.4.

⁹⁵ See Update Logic website: <http://www.updatelogic.com/>.

⁹⁶ *CBS to Carry Gemstar-TV Guide IPG Data*, MULTICHANNEL NEWS, Apr. 19, 2007, available at <http://www.multichannel.com/article/CA6435011.html>.

third parties in the market, would amount to unwarranted and unnecessary government interference in a functioning marketplace, and an unauthorized government taking.

3. Free Guide Data for CE Manufacturers.

The proposal would require cable operators to provide CE with a free data stream of EPG data and metadata for CE to populate its own guide, rather than relying upon the commercial owners and suppliers of such data as cable operators and some CE manufacturers do today.

4. Free Test Facility for CE Manufacturers.

Cable would be obligated to pay for all of the testing facility for OpenCable applications (running on retail devices). Despite this, CE participation would be optional. Again, as is the case with all of these proposals for free use and access to cable facilities, the Commission would be hard-pressed to justify this taking of operator property, or its treatment of cable operators as essentially common carriers contrary to the Communications Act commands.⁹⁷

H. No Commitments from CE

Despite all of this, there is not a single commitment from those making the CEA proposal to design, manufacture, sell, or ship any two-way device by the digital broadcast transition. The cable and content industries are being asked to upend their entire business models in order to provide an *option* (not a *commitment*) for a certain few CE manufacturers to build a device that does not even deliver today's cable services – the very purpose of Section 629⁹⁸ -- in a way that repudiates the clear terms of the earlier one-way MOU.⁹⁹

⁹⁷ 47 U.S.C. § 541(h) (“Any cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.”) Of course, the CEA proposal goes one step further than “common carrier” treatment by requiring access to and use of cable operator property without *any* compensation.

⁹⁸ *Gemstar Int'l Group, Ltd.*, CSR 5528-Z, Memorandum Opinion and Order, 16 FCC Rcd 21531, 21542, ¶ 31 (2001).

⁹⁹ The cable and CE industries both specifically agreed in the one-way MOU that interactive devices would provide EPGs via the OpenCable Platform middleware. “Cable operators’ EPG will be provided for advanced interactive digital cable products via [the OpenCable Platform] or its successor technology.” *Navigation Devices*

I. The CEA Proposal Would Regulate and Burden Small Cable Systems

The CEA proposal does not limit itself to seeking subsidies. It piles on burden after burden on cable operators, including applying all of its proposed rules to cable systems of 550 MHz or more. This would impermissibly burden smaller systems, which typically have not been upgraded to 750 MHz. By contrast, the FCC's current UDCP support rules apply headend requirements only to digital cable systems with an activated channel capacity of 750 MHz or greater. The OpenCable requirement would apply to digital cable systems with 750 MHz capacity and 5,000 subscribers. The cut-offs are practical tools for defining cable systems that could afford to have been relatively recently updated, and that have the subscriber base to sustain further headend investments.

J. The CEA Proposal Would Skew the MVPD Marketplace and Violate the Commission's "Technological Neutrality" Policy

The cable industry has been a leader in innovation, investing over \$110 billion in private, risk-capital in fiber-based networks since the 1996 Telecommunications Act was passed. Innovation comes from the freedom to innovate on the network. That freedom created high speed internet access via DOCSIS modem, VOD; QAM modulation which allows two to four times the number of HD programs per 6 MHz channel as does VSB; SDV; Start Over™; a variety of Electronic Program Guide and navigation services; and a host of other services. Innovation in the network is what has enabled AT&T's U-Verse and Verizon's FiOS to have an opportunity to compete against cable. Similarly, innovation in the network is what allows the DBS competitors to use advanced codecs and added bandwidth through spot beams and additional satellites. Cable must continue to innovate in the network to leverage every new

FNPRM, 18 FCC Rcd at 548. They also agreed that "[t]he design of Unidirectional Digital Cable Products may not impose additional investment requirements on the cable distribution network, beyond MSO obligations specified in this MOU." *Id.* at 547.

technology that is available to remain competitive against these new entrants that differentiate themselves on network technology alone. Any solution that attempts to freeze the network will cause irreparable harm to the cable industry's ability to innovate and provide new and compelling services to the consumer. Any regulations to implement this chilling effect would be unprecedented and contrary to Congressional direction.

As discussed above, the CEA proposal would subject the cable industry to time-consuming, expensive and unnecessary regulations that will have the effect of freezing innovation and placing cable at a disadvantage with its competitors. Out of the gate, it starts by freezing cable's interactive video services, including VOD, EPGs, interactive programming enhancements, and emerging interactive services by subjecting them to a time-consuming, expensive and unnecessary redundant redesign and standardization process. No innovations in the OpenCable Platform would be permitted without an FCC rulemaking or permission from CE manufacturers. Cable could not roll out new interactive services without first subjecting them to testing by the CE industry. Cable operators could not migrate to bandwidth-saving SDV (as now used by AT&T) without FCC or CE industry approval, thus delaying the expansion of network capacity for higher-speed data, telephony, digital simulcast, more VOD, new program networks, and more high-definition.¹⁰⁰ Innovation cannot occur rapidly – if at all – on these terms.

Given these restrictions imposed uniquely on cable – and not on its DBS, telco, wireless, and Internet competitors – the CEA proposal patently violates the Commission's policy of technological and competitive neutrality.

¹⁰⁰ CEA also proposes that cable must either not change cable services for the life of deployed legacy CE products or be required to support existing cable services for life. There is clearly a mismatch between the innovation cycle in cable (where set-top boxes are depreciated in about 4 years, and can be swapped out even earlier if new services are offered) and CE expectations built up from legacy analog television whose screens may have lasted 15 years. A decision by CE to try to integrate set top functionality inside a DTV, and to make that DTV into a specialized computer, is no justification for saddling the cable industry and its customers with a lifetime of support longer than anything that exists in cable today.

IV. THE CEA PROPOSAL SHOULD BE REJECTED ON LEGAL GROUNDS

A. **Requiring Cable Operators to Comply with the CEA Proposal Would Stretch the Commission’s Limited Jurisdiction Under Section 629 Beyond the Breaking Point**

Section 629 was not adopted to impose costly and highly invasive regulations exclusively on the cable industry and consumers. To be sure, when it was adopted in the Telecommunications Act of 1996, it was an analog world where most customers could only access cable’s scrambled services through set-top boxes provided primarily by two traditional manufacturers. But Congress did not authorize such an invasive regime to be applied solely to cable. It required the Commission to “adopt regulations to assure the commercial availability ... of equipment *used by consumers to access multichannel video programming and other services offered over multichannel video programming systems*, from manufacturers, retailers and other vendors not affiliated with any multichannel video programming distributor.”¹⁰¹

Congress further limited the scope of the FCC’s mandate: “One purpose of this section is to help ensure that *consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator.*”¹⁰² The Commission itself has observed that “[t]he purpose of Section 629 and [its navigation device] rules ... is to expand opportunities to purchase this equipment from sources other than the service provider.”¹⁰³ Conversely, the Commission has said that it

has *not* found that the right to attach consumer electronics equipment to a cable system can be expanded to include the obligation by cable operators to carry any service that is used by such equipment, *nor is the legislative history supportive of such a requirement.*

¹⁰¹ 47 U.S.C. § 549(a) (emphasis added).

¹⁰² *Conference Report* at 181, *reprinted in* 1996 U.S.C.C.A.N. at 194 (emphasis added).

¹⁰³ *First R&O*, 13 FCC Rcd at 14776, ¶ 1.

Indeed, the scope of Section 629 apparently was ‘narrowed to include only equipment used to access services provided by multichannel video programming distributors.’”¹⁰⁴

Section 629 is not intended to provide a common carrier pipeline of some static, ripped, mixed and burned derivative of cable services extracted only from cable operators, while other MVPDs are left free of regulation.

Equally important, the Commission has emphasized that “[i]t is not our intent to force cable operators to develop and deploy new products and services in tandem with consumer electronics manufacturers. *Cable operators are free to innovate and introduce new products and services without regard to whether consumer electronics manufacturers are positioned to deploy substantially similar products and services.*”¹⁰⁵

As the FCC has said, the purpose of its navigation device proceeding “is to make navigation devices commercially available, rather than to create a market for certain specific equipment.... Section 629 is intended to result in the widest possible variety of navigation devices being commercially available to the consumer.”¹⁰⁶ Although consumers will ultimately decide whether to adopt such devices, the Commission and industry have without question taken concrete steps to make one-way cable-ready devices commercially available and provide an opportunity for them to succeed in the marketplace.

Commission adoption of rules to implement the market-based OpenCable Platform approach would do the same for two-way cable-ready devices. Moreover, such action would comport with the Commission’s limited jurisdiction under Section 629, by implementing

¹⁰⁴ *Gemstar Int’l Group, Ltd.*, 16 FCC Rcd at 21542, ¶ 31, *citing Conference Report* at 181 (emphasis added). *See also* H.R. Rep. No. 104-204, at 112 (1995), *reprinted in* 1996 U.S.C.C.A.N. 10, 78 (the navigation devices which are the subject of Section 629 are only those which “will connect consumers to the network of communications and entertainment services that will be provided by telecommunications [sic] providers.”)

¹⁰⁵ *Second R&O*, 20 FCC Rcd at 6809, ¶ 30 (emphasis added).

¹⁰⁶ *First R&O*, 13 FCC Rcd at 14784-85, ¶ 26.

commitments from the cable industry. By contrast, forcing cable operators to comply with the intrusive requirements in the CEA proposal would go well beyond what Section 629 requires or allows. It would violate the letter and spirit of Section 629 by “freezing or chilling the development of new technologies or service.” It would also jeopardize the security of the cable network and violate Section 629(b) of the Act.¹⁰⁷

In implementing Section 629, the Commission should not recreate the mistakes made under Section 624A, which required Congress to rein in the agency. Section 624A addressed incompatibilities between premium functions and features of television receivers and video cassette recorders (“VCRs”) and cable scrambling, encoding, and encryption technologies.¹⁰⁸ Congress’ goal was to permit consumers to benefit from such features and functions while at the same time allowing cable operators to use technologies that will prevent signal theft.¹⁰⁹ Congress directed the Commission to report to Congress on the “means of assuring compatibility between televisions and [VCRs] and cable systems...;” to commence a rulemaking to consider the costs and benefits to consumers of imposing compatibility requirements on cable operators and television manufacturers to facilitate use of a VCR and picture-in-picture features; and to establish regulations for the technical requirements for equipment to be sold as “cable-compatible” or “cable-ready” and to promote the commercial availability of converter boxes and remote control devices. The Commission was in the process of establishing overreaching technical standards, when Congress stepped back in. When Congress passed the Telecommunications Act of 1996, it expressly retracted the Commission’s technical authority

¹⁰⁷ 47 U.S.C. § 549(b) (“The Commission shall not prescribe regulations ... which would jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service.”).

¹⁰⁸ 47 U.S.C. § 544A(a)(1).

¹⁰⁹ *Id.* at § 554A(a)(3).

and sought balance.¹¹⁰ It stated that Congress' compatibility goals could be achieved through much narrower technical standards that leave features, functions and protocols to be determined through the open market:

[C]ompatibility among televisions, video cassette recorders, and cable systems can be assured with *narrow technical standards* that mandate a *minimum degree of common design and operation*, leaving *all features, functions protocols*, and other product and service options for *selection through open competition in the market*.¹¹¹

Congress expressly prohibited the Commission from passing rules that affect telecommunications interface equipment, home automation communications, and computer network services. Likewise, the Commission may not adopt under Section 629 the massive technology straitjacket proposed by CEA proponents.

B. The CEA Proposal Violates Other Provisions of Communications and Constitutional Law

As noted above, the CEA proposal would have the cable industry reengineer itself in order to provide, among other things, free carriage of guide data and software images. Congress has specifically provided that “[a]ny cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.”¹¹² Of course, the CEA proposal goes one step further than “common carrier” treatment by requiring access to and use of cable operator property without *any* compensation, which violates the Fifth and Fourteenth Amendments.

The CEA proposal would also discriminate and burden cable operators with reengineering cable plant and networks and disassembling cable services as to infringe on the

¹¹⁰ 142 Cong. Rec. H1145, H1160 (daily ed. Feb. 1, 1996) (“Section 301(f) modifies the FCC's authority in order to reign in the Commission's ongoing rulemaking on cable equipment compatibility”).

¹¹¹ Telecommunications Act of 1996, § 301(f)(1), codified at 47 U.S.C. § 644A(a)(4) (emphasis added).

¹¹² 47 U.S.C. § 541(h).

property rights and free speech rights of cable operators and programmers, in violation of the First, Fifth and Fourteenth Amendments.

C. The Commission Does Not Have Ancillary Jurisdiction to Adopt the CEA Proposal

The Commission’s ancillary jurisdiction cannot override these limitations. Whatever the reach of *Southwestern Cable* and *Midwest Video I*,¹¹³ ancillary jurisdiction does not override express Congressional limitations. In *FCC v. Midwest Video Corp.* (“*Midwest Video II*”), the FCC was reversed for imposing common-carrier obligations on cable – which CEA essentially replicates in its current proposal.¹¹⁴ Likewise, in *American Library Association v. FCC*, the D.C. Circuit rejected the Commission’s use of ancillary jurisdiction in adopting broadcast flag rules for devices outside of the realm granted to the FCC by Congress.¹¹⁵ Congress has never empowered the Commission to establish such intrusive technical obligations on cable systems. Congress has consistently passed legislation that prohibits common carrier regulation, favors market solutions, removes technology constraints, and leaves selection of the features, functions and protocols to the open market.

In sum, the Commission has no jurisdiction – direct or ancillary – to adopt the intrusive regulatory regime propounded in the CEA proposal.

V. THE COMMISSION SHOULD EXPAND ITS VISION TO AN “ALL-MVPD-READY” SOLUTION TO FULFILL THE GOALS OF SECTION 629

The *Notice* sought comment on “approaches by which non-traditional cable operators and other MVPDs could achieve bidirectional compatibility between their systems and consumer

¹¹³ *United States v. Southwestern Cable*, 392 U.S. 157 (1968) and *United States v. Midwest Video Corp.*, 406 U.S. 649 (1972).

¹¹⁴ 440 U.S. 689 (1979).

¹¹⁵ 406 F.3d 689 (D.C. Cir. 2005).

electronics equipment.”¹¹⁶ The *Notice* specifically mentioned an NCTA submission which briefly discussed an “enhanced security device for all MVPDs that would permit a retail device to interoperate with all MVPD networks, whether traditional cable, satellite or telephone.”¹¹⁷

NCTA applauds the Commission for taking this realistic approach to implementing Section 629’s “commercial availability” mandate in today’s MVPD marketplace – one that is marked by intense satellite competition and the recent entrance by formidable telephone companies. One out of three consumers shopping for new digital television equipment is already a satellite customer and, in a very short time, over half a million have subscribed to Verizon alone. For connections to these networks, there is no “separable security” module such as a CableCARD nor any meaningful options available from retail manufacturers. However “digital cable-ready” the DTV may appear on the retail store shelf, it will not connect to DirecTV, DISH, Verizon’s FiOS, AT&T’s U-Verse, Qwest’s VDSL and FTTH-BPON, or any other competing sources of “digital cable,” unless the customer uses a proprietary set-top box provided by or built-to-specification for that specific MVPD. As good a solution as OpenCable is for cable subscribers, it will not provide consumers with a product that is fully portable among the many MVPD providers available today.

The dilemma faced by today’s consumer (and the competitive disparity under which cable labors) is one of the Commission’s making. Section 629 applies to all MVPDs, so, as a

¹¹⁶ *Notice* ¶ 13.

¹¹⁷ *Notice* ¶ 14, citing Letter from Neal M. Goldberg, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission (June 5, 2007). Verizon has made the same point: “Verizon encouraged the Commission to ensure that any two-way plug-and-play approaches that it endorses or requires would be platform agnostic and would be compatible with the services of video providers using differing technological approaches, including not only traditional cable companies but also IPTV providers, hybrid QAM/IP providers, or others.... Verizon cautioned that adopting technologies specific to only one segment of the video delivery market will adversely affect innovation and consumer choice. Verizon explained that a network agnostic approach for two-way plug-and-play will allow for nationwide compatibility of devices across satellite, xDSL, FTTP, HFC, and other video delivery networks.” Letter from Paul Brigner, Executive Director, Federal Regulatory, Verizon, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Dkt. No. 97-80, June 15, 2007.

legal matter, the Commission must apply its rules equally to all MVPDs. Instead, the Commission has exempted DBS and repeatedly failed to address that industry's current practices of relying on integrated proprietary set-tops designed by the DBS provider.¹¹⁸ It has granted waivers of the integration ban for every technology but cable's, and seemingly tacitly accepted AT&T's defiance of the rules. In a market where one in three MVPD subscribers get their service from a provider other than a traditional cable company, requiring that navigation devices be only "cable-ready" ignores almost one-third of the potential customers for the navigation devices contemplated by the statute.

A basic premise of the CEA proposal is a request for an alternative approach that would add more functionality to a separable network interface device. While the specific proposal offered by CEA is by its terms unacceptable, as a general principle the development and deployment of an "all-MVPD-ready" device can and should be encouraged and facilitated by the Commission as a productive approach to the request. The operation of today's interactive cable services requires that terminal devices behave as part of a sophisticated network controlled by the headend. Set-top boxes are essentially specialized computers in constant communication with the headend. Classically, this is handled by very specific and proprietary hardware, firmware, and software elements in a set-top box. These issues can be simplified by moving some of the functionality from the TV and including those functions in a network interface device that could fit unobtrusively behind a TV and, with the right command codes, be run from

¹¹⁸ On March 1, 2006, DirecTV initiated a new equipment policy that effectively eliminates the ability of most new customers to access its service by any other means than a proprietary set-top box leased from DirecTV. Retailers may provide these boxes *only* after the consumer has signed an agreement to lease the box from DirecTV at rates and terms prescribed by DirecTV. Even though they paid the retailer an upfront fee of as much as \$500, the consumer cannot use this equipment if they later decide to switch to another MVPD's service. EchoStar has an approach similar to that of DirecTV, except that customers purchase OEM set-top boxes built to its specifications, rather than lease them. See *In the Matter of National Cable & Telecommunications Association's Request for Waiver of 47 C.F.R. § 76.1204(a)(1)*, Request for Waiver, CS Dkt. No. 97-80, CSR-7056-Z, at 25-26 (Aug. 16, 2006).

the remote control that comes with the TV. Although we cannot speak for other MVPDs, in the case of cable operators, such network interface devices could also be offered at retail.

By including key network-specific functionality in a network interface device, this approach could offer consumers a low cost option for accessing all cable services on bi-directional retail devices – and the ability to use their televisions with other MVPD providers. This would be a far better solution than CEA’s “DCR+,” which imposes enormous costs on consumers and their cable providers, fails to deliver the cable services that customers want and pay for, and in the end costs consumers more money by disabling them from accessing new services on their supposedly “digital cable ready” device.

If such interface units were permitted to operate without massive disruption of MVPD services, and classified as separable security devices, this alternative method would allow for a multi-MVPD solution for retail access to interactive digital services. Should the Commission embrace an all-MVPD solution which would apply to all other major MVPDs, the cable industry is ready and willing to cooperate in an “all-MVPD” solution – so long as we are not simultaneously saddled with demands to upend the OpenCable Platform, halt our innovation, invent DCR+, or satisfy the other rapidly escalating demands that are being hung on this proceeding.

CONCLUSION

The comparison between the OpenCable Platform solution and CEA's proposal is striking. In a nutshell:

OpenCable Platform	DCR+
Delivers all cable services	Does not deliver all cable services
New cable services will also work	Freezes cable services. New services need advance approval, FCC rulemaking, and/or new standard
Evolves with the network; innovation encouraged	Static - innovation halted
Ready now	Will take many years
Consumers using it now.	No evidence of consumer interest
Complete consumer education program	No consumer education
Will enable consumer access to highest value content through advanced content protection tools	Will limit access to highest value content given insufficient content protection tools
Specifications complete	No specifications
Solution developed in marketplace	No marketplace acceptance
Intellectual property cleared	No intellectual property clearance
Based on international Java-based standards for interactive content delivery	Carves out US from international practice.
Developers can create new applications that work in ubiquitous nationwide platform	Developers locked out.
Testing program works; CEs already certified	No testing program
Major manufacturers certified to build retail TVs; devices being currently deployed on both leased and retail sides	No manufacturer has committed
Fully supported by cable, including regulatory framework	No support from any cable operator
Now being deployed in headends and set-top boxes	Not used in any headend or set-top box

As we said in our November 2005 submission, the Commission's objective should be to use regulation to expedite the rollout of two-way cable-ready products to consumers while still preserving the advantages and flexibility of the market-based approach that has already demonstrated success. Any regulation that is too rigid would threaten the ability of the industry to respond to the dynamic demands of the marketplace and to incorporate the latest innovations in its products. Instead, the path to successful development and deployment of IDCs is one where the Commission endorses the OpenCable Platform that incorporates the solutions derived

from marketplace negotiations and specifications, and that allows that market to continue to evolve. The path proposed in November 2005 would offer all of the necessary elements for success.

For the reasons stated above, the Commission should endorse the approach submitted by NCTA to implement the market-placed based OpenCable Platform solution for digital cable-ready bidirectional products, and terminate this proceeding.

Respectfully submitted,

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