National Cable & Telecommunications Association
25 Massachusetts Avenue, NW – Suite 100
Washington, DC 20001
(202) 222-2300

www.ncta.com

Neal M. Goldberg
Vice President and General Counsel

(202) 222-2445
(202) 222-2446 Fax

June 20, 2007

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: CS Docket No. 97-80

Dear Ms. Dortch:

On Wednesday, June 20, 2007, William Check, Senior Vice President, Science & Technology, National Cable & Telecommunications Association ("NCTA"), Dan Brenner, NCTA's Senior Vice President, Law & Regulatory Policy, and I met with Michelle Carey, Legal Advisor to Chairman Martin. We discussed issues regarding two-way "plug and play" products as described more fully in NCTA's June 5, 2007 *ex parte*, a copy of which is attached as Attachment 1.

More generally, we told Ms. Carey that the cable industry welcomes the FCC seeking comment on proposals to bring two-way plug and play products to market as soon as possible. NCTA had urged the Commission to do just that eighteen months ago when, at the Media Bureau's request, we submitted cable's solution to making two-way plug and play products a reality.[1] Major consumer electronics companies (*e.g.*, LG Electronics, Panasonic, and Samsung) have already manufactured two-way "digital cable ready" products using the OpenCable platform and have exhibited those products at both the 2007 NCTA Cable Show and the 2007 CES.

In addition, we noted that, with more than 30 percent of consumers subscribing to a multichannel video programming distributor ("MVPD") other than cable, it would be difficult to achieve the "commercial availability of navigation devices" mandated by Section 629 of the Communications Act if these devices were "cable ready" only. Therefore, we urged that the Commission seek comment on approaches for an "all-MVPD ready" device that would ensure all consumers are beneficiaries of a robust retail marketplace. We described two such "all-MVPD ready" approaches (*i.e.*, an "Enhanced Separate Security Device for all MVPDs" and a "Gateway Device for all MVPDs") which were also mentioned in our June 5, 2007 *ex parte* filing.

---

[1] *See* Report of the National Cable & Telecommunications Association on Two-Way (Interactive) Digital Cable Ready Televisions, CS Docket No. 97-80, filed November 30, 2005, a copy of which is attached as Attachment 2.

If you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ Neal M. Goldberg

Neal M. Goldberg

Attachment

cc: Michelle Carey

ATTACHMENT 1

National Cable & Telecommunications Association
25 Massachusetts Avenue, NW – Suite 100
Washington, DC 20001
(202) 222-2300

www.ncta.com

Neal M. Goldberg
Vice President and General Counsel

(202) 222-2445
(202) 222-2446 Fax

June 5, 2007

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: CS Docket No. 97-80

Dear Ms. Dortch:

On Monday, June 4, 2007, Dan Brenner, Senior Vice President for Law & Regulatory Policy at the National Cable & Telecommunications Association ("NCTA"), William Check, NCTA's Senior Vice President, Science & Technology, Paul Glist of the law firm Davis Wright Tremaine, and I met with Monica Desai, Chief of the Media Bureau, and Andrew Long, Tom Horan and Brendan Murray of the Media Bureau staff. In that meeting we discussed progress that has been made by the cable and consumer electronics ("CE") industries on a number of fronts in bringing "digital cable ready" products to the market including:

1. **The OpenCable Platform**. In November, 2005, NCTA responded to a Media Bureau request seeking proposals to bring two-way products to market as soon as possible. The cable industry's response was based on marketplace use of the OpenCable Platform as a standardized "middleware" layer, which is now being incorporated in retail "two-way" digital cable ready devices as well as in operator-supplied set-top boxes.[1]

    - The OpenCable Platform middleware definition is now standardized at the ITU and at SCTE, and is similar to the many standardized middleware solutions that are used internationally in MHP, GEM, ACAP, Blu-Ray, and cell phones. Interactive cable applications – fully-featured interactive cable program guides, video-on-demand ("VOD"), "switched" channels, interactive programming enhancements, "voting," e-commerce, cross-platform applications like caller ID on the TV, and other evolving advanced services – can be written once to the OpenCable Platform and

[1] *See* Report of the National Cable & Telecommunications Association on Two-Way (Interactive) Digital Cable Ready Televisions, CS Docket No. 97-80, filed November 30, 2005.

can then interact with a wide variety of leased and retail hardware devices, allowing innovation on both sides of the middleware.

- Over a dozen independent CE companies, including leaders in HDTV technology such as Samsung, Panasonic and LG Electronics, have signed OpenCable licenses with the cable industry's research and development center, CableLabs;[2] their OpenCable DTVs have been exhibited at the 2006 and 2007 Consumer Electronics Shows,[3] and the use of the OpenCable Platform solution has been endorsed in joint filings of CEA and NCTA, as well as in earlier agreements.[4]

- An international and United States patent licensing pool exists for the OpenCable Platform. Patent licensors include Philips, Panasonic, Samsung, OpenTV, Comcast, and Time Warner Cable. The patent pool has established a license and royalty fee structure available to any potential licensee on a reasonable and non-discriminatory basis. The license and fee structure fairly apportions the patent fees payable to both service providers, and device manufacturers, as both benefit from OpenCable Platform technology.

2. **Multi-Stream CableCARDs for One-Way Devices.** Multi-Stream CableCARDs ("M-Cards") enable devices to unscramble more than one programming stream so, for example, a viewer may record one descrambled program while viewing another descrambled program. CableLabs, with the assistance of consumer electronics parties, including representatives from TiVo, Motorola, Soleki Systems Corporation,

---

[2] *See* "Cable TV's New Aim: Free Us From Tangle of Boxes and Remotes," *Wall Street Journal*, February 21, 2007, at B1 ("[M]anufacturers such as Panasonic, Samsung and LG already have designed OCAP TV sets that will eliminate the need for set-top boxes, the scourge of many a home-entertainment center. With OCAP 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."). To date, the CHILA license, which covers the hardware for interactive TVs, has been signed by major CE companies including Samsung, LG Electronics, Panasonic, Toshiba, ADB, Thomson, Digeo, CISCO/Scientific-Atlanta, Motorola, Stezar, SunPlus, Markus, Himax, Funai Electric, and Video Without Boundaries, as well as by IT and component manufacturer companies such as ATI, Broadcom, Digital Keystone, and Micronas. The companion license for OpenCable Platform technology enables retail digital cable-ready devices to receive the full panoply of cable operator services, including an interactive guide and VOD services, as well as interactive applications and services. It has been signed by, among others, Samsung, Panasonic, LG Electronics, and Toshiba.

[3] *See* Letter from Neal M. Goldberg, NCTA, to Ms. Heather Dixon, Legal Advisor to Chairman Martin, CS Docket No. 97-80, February 23, 2007 (a copy of this filing is attached as Attachment A hereto).

[4] *See e.g.*, Joint NCTA/CEA Status Report, filed October 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)."). *See also* Memorandum of Understanding Between the Cable and CE Industries, Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices and Compatibility Between Cable Systems and Consumer Electronics Equipment, Further Notice of Proposed Rulemaking, 18 FCC Rcd 518 (2003), Appendix B, Memorandum of Understanding, §4.3.

Digeo Interactive, Digital Keystone, and ViXS, redesigned the test suite requirements for "one-way" retail devices (such as TiVo's DVR) to enable such devices to use multistream CableCARDs in multistream mode, enabling viewers to watch one channel while recording another.[5]

3. **Switched Digital Video.** Switched Digital Video ("SDV") is a significant bandwidth management technology employed by cable operators to offer more programming choices, more High Definition, Standard Definition, and on-demand channels; to deliver faster Internet access speeds and the innovative services those speeds enable, including digital voice service; and to deploy more interactive two-way services.[6] When TiVo raised concerns that its one-way DVRs could not access two-way SDV linear channels, the cable industry responded promptly and engineers from cable and TiVo are working now to find a solution. TiVo's President and CEO Tom Rogers recently testified that "There is good news. We have pointed out this problem to the cable industry. To their great credit, they have said, we want to work this out, we want to work this through…. We are hopeful that it will be solved."

4. **Digital Cable Ready PCs.** Working with Microsoft, AMD and others, the cable industry developed a "one-way," CableCARD-enabled "digital cable ready" receiver for use with Vista PCs. The agreement allows consumers to enjoy one-way cable programming, including premium high definition content, on their personal computers and throughout the home on compliant network-connected devices. The receiver and compatible Vista PCs are now being sold by Hewlett Packard and will be available soon from other manufacturers as well.

5. **Two-Way Digital Cable Ready PCs.** Building from the one-way digital cable ready PC success, the cable industry is working to develop a two-way digital cable ready receiver for PCs, and to accelerate the deployment of OpenCable Platform devices and services in that environment.

6. **Two-way OpenCable IT Solution.** The cable industry is also working directly with chip manufacturers to deliver two-way OpenCable Platform services in ways that may be better suited to their implementations in the PC environment.

In response to questions, we explained the many problems with the proposal advanced by certain CE and IT companies in a November, 2006 FCC filing. We reiterated points made in an NCTA *ex parte* filing on December 11, 2006 (a copy of which is attached as Attachment B). In particular we noted that the market-based OpenCable Platform approach submitted to the Commission by the cable industry at the Media Bureau's request in November, 2005 is currently

---

[5] *See* Letter from Neal M. Goldberg, NCTA, to Marlene H. Dortch, Secretary, FCC, CS Docket No. 97-80, filed March 26, 2007.

[6] AT&T's U-Verse video service utilizes SDV to deliver *all of its channels* throughout its entire footprint. Verizon also uses a form of switched video delivery for its video-on-demand channels.

bringing two-way plug and play products to market and can do so much faster than the approach advanced by the CE filing could ever do.

In addition, we discussed the status of the current discussions between the cable and CE industries regarding two-way digital cable ready products and described the progress that has been made to date.

Finally, we discussed a number of approaches to promoting the "commercial availability" goals of Section 629 of the Communications Act, particularly in light of the facts that the statutory mandate applies to all MVPDs, and that over 30% of MVPD customers receive their services from an MVPD other than a traditional cable company. In particular, we discussed three approaches (not mutually exclusive) to promote the goals of Section 629:

- **The OpenCable Platform.** As noted above, major consumer electronics manufacturers – including Samsung, the world leader in HDTV; Panasonic, maker of the best-selling plasma TVs; and LG, the world's largest provider of flat-panel displays – are bringing innovative two-way, digital cable-ready products to market using the OpenCable Platform.

- **Enhanced Separate Security Device for all MVPDs**. Another approach that is being explored is an enhanced separated security device, in a new form factor that puts MVPD technology into a small device (about the size of an iPod) supplied by the MVPD. The goal is to provide a unified and simpler experience for the consumer, using one remote control associated with the retail device, in a way that can permit the retail device to interoperate with all MVPD networks, whether traditional cable, satellite, or telephone. The OpenCable Platform would be used in the device supplied by cable operators, but it is not a necessary component, so any MVPD's services could be accessed with this approach if the device had the requisite connectors to the television and MVPD technology. Such an "all-MVPD" device is critical to promoting the commercial availability of navigation devices since providers other than traditional cable companies have over 30% of the MVPD market.

- **Gateway Device for all MVPDs.** Following discussions between CEA and the telephone industry in 2006, CEA and a number of telephone companies announced a proposal for a gateway device that could transmit MVPD programming onto home networks.[7] Although this solution is more complicated than the enhanced separate security device approach, it is a home network-based retail approach that would enable all MVPDs to carry video programming throughout the home.

---

[7] Press Release, "AT&T, BellSouth, Verizon and CEA Announce Principles on Device Attachment," March 15, 2006. *See also* "Bells, Electronics Industry Strike Internet TV Deal," *Tech Daily*, March 16, 2006.

If you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ Neal M. Goldberg

Neal M. Goldberg

cc: Monica Desai
Andrew Long
Tom Horan
Brendan Murray

Attachments

ATTACHMENT A

cable

National Cable & Telecommunications Association
25 Massachusetts Avenue, NW – Suite 100
Washington, DC 20001
(202) 222-2300

www.ncta.com

Neal M. Goldberg
Vice President and General Counsel

(202) 222-2445
(202) 222-2446 Fax

February 23, 2007

Ms. Heather Dixon
Legal Advisor, Media Issues
Office of Chairman Kevin Martin
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: CS Docket No. 97-80 (Commercial Availability of Navigational Devices); PP Docket No. 00-67 (Compatibility Between Cable Systems and Consumer Electronics Equipment)

Dear Ms. Dixon:

There has been much debate in the above-referenced dockets and elsewhere about the best way to bring "two-way" digital cable ready products to 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 consumer electronics ("CE") companies, supports a market-based approach based on the OpenCable Applications Platform ("OCAP") – *an approach that is working to bring two-way products to market much faster than any hypothetical approach could ever do.*

Several leading CE manufacturers are building two-way, OCAP-enabled products for retail and many of those products were displayed at the 2007 Consumer Electronics Show. Furthermore, major cable operators have committed to using OCAP in their own leased set-top boxes and have started to deploy support for OCAP for those devices and for retail devices. They remain committed to the deployment schedule for OCAP technology and support outlined by NCTA in filings with the Commission last year. It is in the business interest of the cable industry to roll out OCAP rapidly to leased and retail products because OCAP streamlines and improves the cable business and because OCAP provides applications developers and consumers with an interactive platform which is fully competitive with IPTV and other video services.

In this regard, I am enclosing for your information a February 21, 2007 *Wall Street Journal* article which reports on cable operators' support for two-way "plug and play" television sets, set-top boxes and other products which use OCAP. As the article observes, "manufacturers such as Panasonic, Samsung and LG already have designed OCAP TV sets that will eliminate the need for set-top boxes, the scourge of many a home-entertainment center. With OCAP 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."

I am also enclosing a recent press release from CableLabs describing the numerous OCAP-enabled "two-way" products displayed at the 2007 Consumer Electronics Show. The CableLabs press release notes that "with more than a dozen manufacturers displaying two-way 'plug-and-play' TVs, 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 TV services to consumers that will not require the use of a leased set-top box."

In addition, the same press release reports that "High-Definition Cable Content [is] Now Available on PCs." As the release states, "a new technology interface that will allow consumers for the first time to view high-definition and other digital cable content on new Microsoft Vista-enabled personal computers was also displayed at CES. The cable interface for personal computers – called OCUR or OpenCable Unidirectional Receiver – will initially support one-way services (e.g., linear programming) while a two-way interactive interface is being developed."

If you have any questions, please feel free to contact me.

Sincerely,

/s/ Neal M. Goldberg

Neal M. Goldberg

cc: Ms. Marlene Dortch (for inclusion in CS Docket No. 97-80 and PP Docket No. 00-67)
Monica Desai, Chief, Media Bureau
Andrew Long
Brendan Murray

Attachments

THE WALL STREET JOURNAL. ONLINE
February 21, 2007

PORTALS

Cable TV's New Aim: Free Us From Tangle Of Boxes and Remotes

By PETER GRANT

When it comes to innovation, the cable TV industry has been long on talk but slow on action. For years, cable executives have promised viewers they'd soon be using remotes to shop, play games, interact with advertisers and vote contestants off the island. But these and many other features, for the most part, haven't been delivered.

Meanwhile, innovations appear daily on the Internet. Some prognosticators predict the Internet eventually will beat cable in the battle for the living room, with most of the entertainment Americans consume piped over the Web to television sets. That would leave cable operators with the unglamorous and less lucrative job of providing the pipes.
But now something is happening that may tilt the playing field more to the cable guys' advantage. After more than six years of development by CableLabs, the industry's research and development arm, cable operators are rolling out technology that could facilitate new applications and help cable TV maintain its dominant position in home entertainment.

The technology addresses an age-old problem at the root of the cable industry. Because the industry grew up as thousands of separate systems, there was little consistency in the technology used, making service upgrades difficult. This remained true even though many systems were consolidated by giants such as Comcast and Time Warner. Just to add a feature like a news ticker on the bottom of the screen, for example, software has to be modified many times to fit different set-top boxes and network gear in a multitude of systems.

The new technology, with the cumbersome name of OCAP, for Open Cable Application Platform, is software that behaves like an operating system that runs on digital cable set-top boxes and other devices. OCAP, then, is to set-top boxes what Microsoft Windows is to computers. Adding a new feature, like the ticker, is an easy task regardless of the cable system. That ease is expected to spark a flurry of creativity among software companies, as new applications will no longer have to be tailored to fit separate cable systems.

Even better, manufacturers such as Panasonic, Samsung and LG already have designed OCAP TV sets that will eliminate the need for set-top boxes, the scourge of many a home-entertainment center. With OCAP 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.

OCAP also enables manufacturers to design a unit combining DVD players, digital video recorders and other devices within a set-top box. So, cable subscribers won't need to lease boxes from their operators -- income hardly worth the capital outlay -- to get all of the interactive features. Any OCAP device they buy from an electronics retailer will do the trick, as long as the cable system has been upgraded for it.

Some manufacturers predict a slew of new devices to follow, such as one that could pipe in cable TV while grabbing photos, music and videos off home computers. Some see OCAP even helping to solve that other curse: multiple remotes.

But be patient. Like any new technology, OCAP still faces significant obstacles and uncertainty. It will have an impact only if it's used in enough cable systems to attract the attention of software companies and device makers who need to sell in large volumes.
The good news is that a few of the largest cable operators are moving quickly to deploy OCAP, hoping to head off growing competition from phone companies, satellite TV and the Internet. Time Warner plans to install its first OCAP set-top boxes in subscribers' homes in May, and is scheduled to have all of its systems OCAP-ready by July. Time Warner Cable subscribers will first see the benefit of this later this year, when the company uses OCAP to enhance its program guide.

Other cable operators aren't far behind. Comcast, the largest cable company with more than 23 million subscribers, plans to deploy OCAP in two markets before year's end. Cox Communications, another large operator, hopes to be able to begin trials for OCAP devices in a half-dozen markets this year.

But no matter how fast cable operators move, their progress in deploying OCAP is going to be limited by the tens of millions of digital cable boxes already in place. Most of those boxes don't have the memory or the processing power to run OCAP. For OCAP to reach critical mass, cable operators must offer enough advanced features -- at a good price -- to convince consumers to order the new devices.

Cable companies don't have a luxury of time. While some consumer-electronics companies are working with OCAP, others -- like Sony, Hewlett-Packard and Apple -- are developing devices that bypass cable operators altogether by routing movies, TV shows and other content from the Internet to the TV.

The race is on.

Contact:

Mike Schwartz
CableLabs
303-661-9100
m.schwartz@cablelabs.com

FOR IMMEDIATE RELEASE

2007 CES Featured Cable's Two-Way Future; High-Definition Cable Content Now Available on PCs

CableLabs® Briefs Two-Way Licensees at CES

Louisville, Colorado, January 24, 2007 – With more than a dozen manufacturers displaying two-way "plug-and-play" TVs, 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 TV services to consumers that will not require the use of a leased set-top box.

The new plug-and-play devices will use the cable industry's software platform – called OCAP™ or OpenCable™ Applications Platform – to facilitate the delivery of interactive applications and services. Major cable operators are rolling out support for the new OCAP platform on their networks in 2007 and 2008, setting the stage for wide availability of the new two-way plug-and-play devices.

In addition to the two-way devices, a new technology interface that will allow consumers for the first time to view high-definition and other digital cable content on new Microsoft Vista-enabled personal computers was also displayed at CES. The cable interface for personal computers – called OCUR or OpenCable Unidirectional Receiver – will initially support one-way services (e.g., linear programming) while a two-way interactive interface is being developed.

"The 2007 CES demonstrated how far cable and our manufacturer partners have come in preparing to bring consumers a whole new array of interactive TV devices," said Dr. Richard R. Green, President and CEO of CableLabs®. "This progress clearly shows that the world's largest consumer electronics manufacturers are adopting and developing products that incorporate cable's interactive TV software," he added.

Thirteen companies displayed two-way plug-and-play cable-ready products at CES this year, including a LG plasma TV that won a CES 2007 Innovations Award. Products that were displayed, and their manufacturers, included:

- Samsung – Exhibited a high-definition DVR set-top box that includes a CableCARD™ interface. (Samsung has previously won CableLabs certification for a two-way, OCAP-enabled cable-ready digital television.) Cox Communications announced at the show it has signed an agreement with Samsung to accelerate development of OCAP-based interactive services on Samsung's HDTV sets and other products. Some of these services, including the GuideWorks interactive program guide, began testing in Cox's Gainesville, Florida Division last month.

- Panasonic – Displayed a high-definition digital plasma television running the full-featured Comcast i-Guide™, including video on demand and other interactive applications using OCAP standard middleware. In a press conference, Panasonic announced that this device would be trialed with Comcast during 2007 and be deployed in retail in 2008.
- LG Electronics – Showed a newly CableLabs certified, fully two-way plug-and-play cable-ready digital plasma television using OCAP.
- Thomson – Demonstrated a two-way plug-and-play cable-ready OCAP-enabled DCI 9000 set-top box with NDS OCAP middleware.
- TiVo® – Showed the TiVo DVR guide running on an OCAP-compatible, Motorola leased set-top box running TVNav, with plans to port to full OCAP. This will support a market trial of a Comcast service offering where customers can choose to use the TiVo interface with their cable service.
- Scientific Atlanta, a Cisco company – Showed the Explorer 8550HDC two-way cable-ready set-top box, with support for CableCARD, OCAP, advanced codecs, and DOCSIS®. The exhibit included a Flickr™ application running on OCAP; Flickr is a photo sharing Web service.
- Motorola – Displayed a line of interactive set-top boxes, including OCAP. Comcast expanded its purchase agreement for a number of OCAP-based set tops including Motorola's "Follow Me TV" multi-room DVR technology.
- VividLogic – Showed reference designs for set-top boxes and digital televisions.
    - Mitsubishi – Mitsubishi has licensed an OCAP middleware stack from supplier VividLogic.
    - Pioneer – Pioneer has licensed an OCAP middleware stack from supplier VividLogic.
    - Funai – Funai has licensed an OCAP middleware stack from supplier VividLogic.
- ADB – Displayed a prototype two-way cable-ready set-top box using OCAP and a CableCARD interface.
- Digeo – Exhibited a Moxi™ multi-room DVR with CableCARD interface; Moxi's DVR application has been ported to OCAP.
- Broadcom – Displayed a reference design for a two-way cable-ready television or two-way cable-ready set-top using OCAP and a CableCARD.

At least two other companies not listed above also showed OCAP-related products in private meetings.

The new cable-ready OCUR solution for personal computers includes a CableCARD interface, and allows for the display of one-way services, such as high-definition video, on Microsoft Vista-enabled personal computers. The manufacturers that displayed this product included:

- Microsoft
- AMD
- Dell
- Hewlett-Packard

- Gateway
- Toshiba
- Niveus – featuring a “dual OCUR design” which allows viewing two channels at the same time.

CableLabs Briefing

Also during CES, CableLabs briefed 10 companies that have signed the license which enables them to build two-way interactive cable-ready products, called CableCARD-Host Interface License Agreement, or CHILA. By signing the CHILA license, a company obtains necessary intellectual property rights and signals its intent to design cable-ready products that can display two-way cable-delivered interactive services, such as interactive program guides, video on demand, enhanced television, etc., without the need for a set-top box.

The briefing included information about MSO activities now underway to provide support of OCAP on the cable network in 2007 and 2008. They also briefed manufacturers about developer conferences planned for 2007 and supported by a growing array of tool developers and systems integration support, as well as lab support activities available at CableLabs in the coming year.

Companies in attendance included Advanced Digital Broadcast, SA; AMD, Digeo, Digital Keystone, Funai Electronics Co., Ltd.; LG Electronics, Inc.; NEC, Panasonic Corporation of America, Samsung, Toshiba American Consumer Products, LLC; and Vidiom.

The complete list of companies that have signed the two-way CHILA license also includes: Broadcom Corporation, Himax Technologies, Inc.; MAKUS Inc.; Micronas GmbH; PC Partner, Stexar Corp.; Sunplus Technology Co, LTD; Tata Elxsi Limited; Thomson; Video Without Boundaries, Inc.; VividLogic Inc. and ViXS Systems Inc.

About CableLabs

Founded in 1988 by members of the cable television industry, Cable Television Laboratories is a non-profit research and development consortium that is dedicated to pursuing new cable telecommunications technologies and to helping its cable operator members integrate those advancements into their business objectives. Cable operators from around the world are members. CableLabs maintains web sites at www.cablelabs.com; www.packetcable.com; www.cablemodem.com; www.cablenet.org; and www.opencable.com.

CableLabs®, DOCSIS®, CableHome™, PacketCable™, OpenCable™, OCAP™, CableCARD™, Go2Broadband^{SM} and CableNET® are marks of Cable Television Laboratories, Inc. All other marks are the property of their respective owners.

ATTACHMENT B

cable

National Cable & Telecommunications Association
25 Massachusetts Avenue, NW – Suite 100
Washington, DC 20001
(202) 222-2300

www.ncta.com

Neal M. Goldberg
General Counsel

(202) 222-2445
(202) 222-2446 Fax

December 11, 2006

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: CS Docket No. 97-80

Dear Ms. Dortch:

On Friday, December 8, 2006, William Check, Senior Vice President, Science & Technology for the National Cable & Telecommunications Association ("NCTA"), Paul Glist from the law firm of Cole, Raywid & Braverman, Kevin Leddy, Senior Vice President of Development of Time Warner Cable, Timothy Dodd, Vice President of Technology Policy of Time Warner Cable, Mark Coblitz, Senior Vice President of Strategic Planning of Comcast Corporation, Dallas Clement, Senior Vice President, Strategy & Development of Cox Communications, and I met with Donna Gregg, Chief of the Media Bureau as well as the following Bureau staff: Andrew Long, Rick Chessen, Mary Beth Murphy, Steven Broeckaert, John Wong, Michael Lance, Alison Greenwald, Brendan Murray and John Gabrysch. We discussed the November 7, 2006 filing by certain consumer electronics ("CE") and IT companies addressing issues regarding two-way "plug-and-play" devices. We made the following points:

The marketplace OCAP approach developed by the cable industry and major CE companies is bringing two-way plug and play products to market now, much faster than any hypothetical approach could ever do.

- OCAP is a middleware solution that provides innovative and constantly-evolving applications to multiple hardware platforms. Like the middleware solutions used internationally in MHP, GEM, ACAP, Blu-Ray, and cell phones, OCAP leverages the Java development and deployment base. OCAP allows a wide variety of consumer electronics devices to have access to new services without the delay imposed by needless standards activity on an application-by-application and device-by-device basis. Interactive cable applications can be written once to OCAP and can then interact with a wide variety of leased and retail hardware devices, thereby avoiding the need to write each application to the native features of each set-top box or TV.

- OCAP is already standardized at the SCTE, an ANSI-accredited standards body, and CE, IT, and cable interests have all had, and will continue to have, the opportunity to steer the development of OCAP now and into the future. Further, a worldwide patent pool for OCAP has been established, based on reasonable and non-discriminatory terms; the majority of patent holders are CE manufacturers. Both Comcast and Time Warner Cable are members of the OCAP patent pool, as are middleware and applications developers such as Open TV.
- All CE companies committed to using OCAP middleware for two-way plug-and-play products in the negotiated Cable-CE Plug-and-Play Agreement submitted to the FCC in 2002. No matter how CEA seeks to gloss over this fact, the most recent CEA proposal reneges on this commitment.
- In the meantime, over a dozen independent CE companies, including leaders in HDTV technology such as Samsung,[1] Panasonic[2] and LG Electronics,[3] have signed the OCAP and CHILA licenses with the cable industry's research and development center, CableLabs, 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 in developing this OCAP middleware solution to permit commercial availability of retail navigation devices that receive interactive cable operators' program guides, video-on-demand ("VOD"), "switched" channels, interactive programming enhancements and other advanced services.
- Two-way OCAP plug-and-play products have been built by CHILA/OCAP signatories, have been exhibited at the 2006 Consumer Electronics Show, and are being tested in live trials in a number of cable operator systems.
- Major cable operators have committed to using and supporting OCAP in their own leased set-top boxes, and are beginning deployment now. It is in the business interest of the cable industry to roll out OCAP rapidly to leased and retail products, because OCAP streamlines and improves the cable business and because OCAP provides applications developers and consumers with an interactive platform which is fully competitive with IPTV.
- In response to questions about the deployment of OCAP, we explained that the cable industry is rapidly deploying OCAP in systems and set-top boxes as promised in prior commitments, and ahead of the schedule NCTA proposed in November 2005. Approximately 4 million homes are passed with OCAP today

---

[1] Samsung is now the world leader in HDTVs. "Who's the World's HDTV Leader?" TVPredictions.com, November 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.")

[2] "Panasonic was the best-selling plasma TV brand in the United States this year …." *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.

[3] "LG is the world's largest producer of flat-panel displays …." "Interview: LG Electronics," http://www.physorg.com/printnews.php?newsid=66310119.

and OCAP deployment in Time Warner, Comcast and Cox systems is targeted by the end of 2008. OCAP is being optimized in coordination with real systems and manufacturers. Multiple guides, multiple VOD applications, switched digital applications, interactive advertising, caller ID, email viewers, on screen subscriptions, and even the TiVo interface are being ported to OCAP. OCAP is currently on Time Warner set-top boxes supplied by Cisco/Scientific-Atlanta and by retail manufacturers (Samsung), as well as on retail two-way OCAP DTVs manufactured by Samsung. Other retail manufacturers are rapidly developing competing OCAP DTVs. Panasonic is developing OCAP set-top boxes.

- CEA is wrong in suggesting that the cable industry is trying to disadvantage retail products to get "cash cow" returns from leased boxes. Cable operators repeatedly have said they'd like nothing more than to get those equipment expenses off of their books in order to focus on developing and deploying innovative services to consumers. Leased equipment is priced under FCC regulations at cost plus no more than 11.25% return. As equipment costs are recovered, those recovered costs are removed from the FCC permitted equipment pool. In the markets deregulated through effective competition, competition provides an even tighter limit on cost recovery. Payback is constrained by law and by the market to eliminate any "cash cow" suggested by CEA.

The approach submitted by competitors to CHILA signatories is not a "compromise."

- The proposal insists instead that the cable industry provide selected two-way services through specific protocols designed for each application. It is a proposal for perhaps the most intrusive regulatory regime ever established. It demands a complete redesign of every part of cable architecture: headends, networks, guides, guide data, VOD, multistream CableCARDs, and leased set-tops. For example, multistream CableCARDs would become miniature set-top boxes, with more resources, more memory, more processing power and higher cost. VOD servers would have to be restructured in ways that have long been rejected by the VOD vendors. Cable operators would be compelled to break their contracts with program guide vendors.

- The proposal cannot lead to a more rapid deployment of two-way retail devices than is possible with the current approach. The proposal does not acknowledge that there are no standards, no intellectual property clearances, and no manufacturers to implement it. At least eight new lengthy standardization efforts would be required to meet the CEA approach. Cable's next generation of downloadable security would require a total redesign. The cable industry cannot simultaneously redesign OCAP, redesign DCAS, get them promptly deployed, and develop a "protocols" approach designed solely to deliver a small piece of cable service in a manner never marketed or sold by cable. In short, the proposal would impose substantial costs on cable customers and cable operators alike and substantial delays on the rollout of new cable services and technologies.

- The proposal does not seek "parity" with low-end leased set-top boxes. Low-end set-top boxes are non-portable, single-tuner, standard definition, non-DVR devices and deliver cable services exactly as ordered by the consumer from each cable operator, using a low-cost digital converter. The proposal explicitly requests that the "low-end" be augmented with high-definition and DVR functionality as well as national portability. Every CE manufacturer today has the opportunity to build a low-end set-top box, but, except for Pace, CE manufacturers have instead produced HDTVs that cost thousands of dollars. They are not promising to do anything else even under this proposal. The claim of parity is merely a stalking horse to undermine OCAP.

The CE companies who submitted the proposal want a free ride on the cable industry's multi-billion dollar investment in cable networks and services.

- Cable operators have spent billions of dollars buying programming and equipment and designing their networks to deliver state-of-the-art, rapidly-evolving interactive services to their customers. These cable-delivered services, such as caller ID on the TV, instant polling/voting, interactive advertising, or Time Warner Cable's Start Over service, are being deployed today.
- The 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. This will make it impossible for consumers or operators to know what cable services a cable customer will be able to receive on a CE device and how they will be displayed.
- Under this proposal, "cable-ready" DTVs will not deliver cable services as consumers have bought them or in the way they have been marketed and delivered by their cable operator. The DTV would strip away services, features, parental controls, cable navigators, reminders, and privacy profiles – and each TV would do so in different ways.
- Attempting to carve up and limit cable services in this manner would create a regulatory quagmire for the Commission, the cable and CE industries, and consumers. Moreover, consumers have the right to receive the services that a cable company has contracted to deliver and have them delivered in the manner consumers expect.
- DTVs built to the proposal would be instantly archaic. They would be incapable of receiving cable's interactive services, such as Time Warner Cable's Start Over service, caller ID on the TV, interactive programming, and wireless video. The CE proponents are repeating a mistake made four years ago by the CE manufacturers who told the cable industry that cable customers only wanted linear cable channels and had no interest in VOD. When they finally built those limited one-way digital cable-ready products, the consumers who bought them wanted the VOD that those devices did not deliver. The current proposal to create "two-way" DTVs limited to VOD is equally blind to the rapid evolution of cable's interactive programming, and will likewise disappoint and confuse cable customers.

The proposal would chill innovation contrary to the mandate of Section 629.

- The cable industry has been a leader in innovation, investing over $100 billion in private, risk-capital in fiber-based networks since the 1996 Telecommunications Act was passed. Myriad new services and products have been developed and deployed. By contrast, this proposal would freeze innovation in cable's interactive video services, including VOD, electronic program guides, interactive programming enhancements as well as emerging interactive services by subjecting them to a time-consuming, expensive and unnecessary redesign and standardization process. No innovations in OCAP would be permitted without an FCC rulemaking or permission from CE manufacturers. The entire cable industry would first have to agree on a single approach, then standardize it, before launching a service. Time Warner's popular Start Over service could not have been developed or deployed under the CEA approach. Under CEA's approach, programmers could not deliver two-way interactive programming to retail devices advertised as two-way "digital cable ready." Cable could not roll out new interactive services without first subjecting them to testing by the CE industry. Cable could not change existing cable services for the life of deployed legacy CE products. Cable operators could not migrate to switched video (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. Innovation cannot occur rapidly on these terms.
- The proposal would enable some CE companies which are behind the curve to delay their CE competitors from delivering innovative new services.
- The proposal would discard the substantial investment and progress made to date by the cable industry and others on OCAP and on cable's next generation of downloadable security ("DCAS") and dictate that the cable industry and CHILA signatories shift their attention to the development of non-OCAP and other solutions dictated by self-selected CE and IT companies.
- The proposal is contrary to the Commission's policy of technological and competitive neutrality by seeking to impose burdensome new requirements on cable but not on cable's DBS, telco, wireless, and Internet competitors. CE, IT, and competing MVPDs do not operate in the market under the constraints on innovation they propose for cable. Instead, they rapidly innovate their products and services, rolling our new products with non-standardized, non-interoperable interfaces, music players, remote controls, menus, HD DVDs, computer memory, chips, gaming stations and games, and offering new services that don't work on old devices. DBS, Verizon, and AT&T rely on integrated leased set-top boxes for the launch of new service. All these companies innovate without waiting for standardization or government permission. Applying restrictions only to cable is unprecedented government intervention in the private marketplace.

- The proposal requires a 180-degree change in course, not for the benefit of consumers, but instead to favor certain pet technologies and projects of certain CE and IT companies. Those companies have business reasons for placing obstacles in the path of CHILA signatories who are in the forefront of bringing two-way OCAP products to market. For example, OCAP is based on Sun's Java technology, while Microsoft and its CE partners are deploying competing Microsoft IPTV devices, and DCAS utilizes a hardware-based chip while Intel's current chips use software-based security.
- Even if it could be implemented, by imposing costly and highly invasive regulations exclusively on the cable industry and consumers, the proposal would contravene Congress' directive to the Commission that, in implementing Section 629, it should "avoid actions which would have the effect of freezing or chilling the development of new technologies and services."

The proposal does not meet the realities of intellectual property rights in the market.

- There are hundreds of third party IPR rights surrounding program guide design and formats and VOD offerings, the two technology areas addressed by the proposal. Cable operators had to pay approximately $750 million to clear the IPR rights for offering their own program guides. CE manufacturers have had four years to add their own program guides to one-way digital cable-ready DTVs, but to date every retail DTV has confronted the same IPR, and has chosen to use the Gemstar guide or none at all. Even if CE manufacturers bought metadata from the same suppliers that provide cable guides, they will not have solved the issue of third party IPR in this technology. Likewise, every VOD vendor has IPR rights that will not go away through the proposed VOD "standardization" effort.

The proposal would jeopardize the security of the cable network in violation of Section 629(b) of the Act.

- Development of cable's downloadable security would no longer be subject to non-disclosure protections which are essential to the development of effective network security, again contrary to the congressional mandate in Section 629. It should be obvious that a security system must keep certain information secret that might otherwise be used to try to break its security. Every commercially successful deployed pay-TV security system uses confidentiality as a defense against hacking. 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.
- Cable operators would be forced to use content protection technologies that have not been properly vetted for use with cable content and do not have the support of the studios and other content suppliers for cable distribution. Cable would not be able to provide a competitive service – with high-value programming consumers want – under these conditions.

- In response to questions about the use of software-only security in cable systems, we explained that we found no European (or other) evidence of purely "software-based" downloadable security in retail-like devices as proposed in the November 7 filing. European cable systems, like those in the United States, rely on 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. A software-only solution is currently not suitable as protection for all of the high-value content carried on cable. DCAS is responsible not only for protecting the security of cable networks and the highest-value early release high-definition content, but the keys to the conditional access business of Motorola, Cisco/Scientific-Atlanta, and other vendors.
- In response to questions about content provider support for the cable industry's approach to DCAS, we explained that the Motion Picture Association of America has specifically rejected a software-only downloadable security approach and specifically supported DCAS's use of a hardware root of trust for the high value copyrighted content delivered via cable. *See* Comments of the Motion Picture Association Of America, Inc., CS Docket No. 97-80, February 6, 2006, pp 4-5 (attached as Exhibit A).

For all of these reasons we argued that the filing submitted by certain CE and IT companies will not bring two-way plug-and-play products to market soon (if ever), violates Section 629 of the Act, and would substitute government mandates for marketplace negotiations which are working to bring two-way products to market right now.

If you have any questions, please contact the undersigned.

Respectfully submitted,

/s/ Neal M. Goldberg

Neal M. Goldberg

cc: Donna Gregg
Andrew Long
Rick Chessen
Mary Beth Murphy
Steven Broeckaert
John Wong
Michael Lance
Alison Greenwald
Brendan Murray
John Gabrysch
Heather Dixon
Rudy Brioché
Bruce Gottlieb
Chris Robbins
Cristina Pauzé

Ms. Marlene H. Dortch
December 11, 2006

EXHIBIT A

COMMENTS OF THE MOTION PICTURE ASSOCIATION OF AMERICA, INC.

CS Docket No. 97-80, February 6, 2006, pp 4-5

2. An Effective Downloadable Conditional Access System Must Have a Hardware Root of Trust.

DCAS can only operate effectively in the form of authenticated software loaded and executed within a DCAS Secure Microprocessor Chip since the system relies upon a hardware "root of trust" within the specialized microprocessor Chip. DCAS cannot provide the same level of security if it were to be implemented in the form of a software application that was downloaded and executed on a general purpose computer, as suggested in the comments filed by Dell, H-P, Intel and Sony Electronics, Inc. In fact, if DCAS were implemented as a downloadable software application with a software "root of trust," it would greatly expose the security of the system to software attacks, which could be developed and easily distributed over the Internet.

for cable navigation devices. It is important that the security elements of DCAS be implemented in a consistent manner across all cable navigation platforms to ensure that high-value, copyrighted content is never exposed to unauthorized copying and/or redistribution.

The MPAA restates its support of the goal of Dell, H-P, Intel and Sony Electronics, Inc. in enabling the general purpose computer as a cable navigation platform to enhance the competitive marketplace for navigation devices. However, the MPAA does not see the need to eliminate the security afforded by the DCAS Secure Microprocessor and its hardware "root of trust" as necessary to achieve this goal.

ATTACHMENT 2

NCTA
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION

DANIEL L. BRENNER SENIOR VICE PRESIDENT, LAW & REGULATORY POLICY
1724 MASSACHUSETTS AVE N.W. WASHINGTON, D.C. 20036-1903
TEL: 202.775.3664 FAX: 202.775.3603

November 30, 2005

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington, D.C. 20554

Re: CS Docket No. 97-80: Report of the National Cable & Telecommunications Association on Two-Way (Interactive) Digital Cable Ready Televisions

Dear Ms. Dortch:

The *Second Report & Order* in this docket calls for the submission to the Commission of reports every sixty days detailing the progress made by the consumer electronics ("CE") and cable industries in reaching agreement on terms and conditions for the development of two-way (interactive) digital cable ready products ("IDCPs").[1] The Consumer Electronics Association ("CEA") and the National Cable & Telecommunications Association ("NCTA") are providing a joint status report on those negotiations in a separate filing being contemporaneously made today. As detailed therein, the parties have made progress and have reached agreement in a number of areas.

To the extent agreement had not been reached on all issues that would enable the development of IDCPs in the near term, the Commission staff recently requested the consumer electronics and cable industries to separately submit concrete proposals enabling the Commission to promptly adopt rules that would serve this goal.

This report answers that challenge. It provides the Commission with a proposed regulatory regime – including technical requirements for cable systems, 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 promptly adopted and combined with voluntary commitments and marketplace agreements, will bring consumers the benefits of two-way digital cable ready products as quickly as possible.

---

[1] *Implementation of Section 304 of the Telecommunications Act of 1996*, CS Docket No. 97-80, Second Report and Order, FCC 05-76, 20 FCC Rcd 6794, 6811-6812, para. 34 (2005) ("*Second R&O*").

Adoption of the Proposals Submitted Today Will Bring Two-Way Products to Market as Quickly as Possible and Will More Than Satisfy the Goals of Section 629

Today the cable industry is submitting two reports with proposals which – taken together – will permit the Commission to meet and exceed the goals of Section 629 of the Communications Act. This report contains a package of voluntary commitments and proposed Commission regulations which will enable CE manufacturers to bring to market IDCPs as quickly as possible, with appropriate content protections and timely consumer education requirements. These proposals rest on a foundation comprised of the CableCARD-Host Interface License Agreement ("CHILA") and the OpenCable Applications Platform ("OCAP") – both of which have been acknowledged by the Commission as reasonable pathways to development of commercially-available IDCPs.[2] Further, these proposals build on market-based agreements that will facilitate practical deployment of innovative products, assure the ability of cable customers to benefit from cable operators' innovations in services, respect consumer expectations and the requirements of cable's content providers.

When Section 629 was adopted in the Telecommunications Act of 1996, the world was quite different than it is today. It was an analog world where cable customers could only access cable's scrambled services through set-top boxes provided primarily by two traditional manufacturers. For that reason, Congress adopted Section 629, requiring 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."[3] In adopting its original navigation device rules in 1998, the Commission confirmed this, saying: "The 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."[4] While Congress' focus was on cable set-top boxes, voluntary inter-industry negotiations have resulted in specifications for unidirectional digital cable ready products ("UDCPs") (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.

The legislative history makes clear the limited 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*

---

[2] *Id.* at 6801-6802, 6811, paras. 17, 33.

[3] 47 U.S.C. § 549(a).

[4] *Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, Report and Order, FCC 98-116, 13 FCC Rcd 14775, 14778, para. 8) (1998) ("*First R&O*").

the cable system or network operator."[5] 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."[6] 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*. Indeed, the scope of Section 629 apparently was 'narrowed to include only equipment used to access services provided by multichannel video programming distributors.'"[7] Finally, 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."[8]

Within this context, the cable industry has supported the Commission in its quest to meet the challenges of Section 629. Section 629 does *not* require cable operators to offer separate security modules; does *not* require cable operators to ensure that retail devices are portable; does *not* require that retail devices access applications (such as a operator's electronic program guide) in a uniform manner across the country; does not require that set-top functionality be integrated into multifunction DTVs; and does *not* require so-called "common reliance" of cable operators on the same implementation of conditional access that is used in retail devices. Nevertheless, cable operators have supported and facilitated all of these goals.

- The cable industry has supported from the outset the FCC's requirement to develop and provide *separate security modules* which would work with retail devices. Indeed, the separate security requirement was based on the CableLabs' OpenCable project which had begun examining the use of separate security *well before* the adoption of the FCC navigation device rules.

- Despite the fact that neither the statute nor the FCC mandated *portability of retail devices*, the cable industry's OpenCable project resulted in development and deployment of separate security modules (now called CableCARD™ brand removable security devices) that permit retail

---

[5] Joint Explanatory Statement of the Committee of Conference, S. Conf. Rep. 104-230, 104th Cong., 2d Sess. at 181 (1996) ("Conference Report").

[6] *First R&O*, 13 FCC Rcd at 14776, para. 1.

[7] *Gemstar International Group, Ltd.*, CSR 5528 – Z, Memorandum Opinion and Order, FCC 01-354, 16 FCC Rcd 21531, 21542, para. 31 (2001), *citing* Conference Report at 181 (emphasis added). *See also* Conference Report at 112 (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.")

[8] *Second R&O*, 20 FCC Rcd at 6809, para. 30.

devices to access cable's scrambled services on any system in the country that is subject to the Commission's "plug and play" rules.

- Cable operators and major consumer electronics manufacturers negotiated the landmark *"plug and play" agreement* and submitted it to the FCC for implementation, resulting in FCC rules facilitating the development and commercial availability of UDCPs.

- Cable voluntarily developed OCAP to permit *portability of applications* used on cable systems through a nationwide common software platform that will result in scale economies for interactive services where an application can be written once, and run everywhere. On a number of occasions, the Commission has written favorably regarding the development and deployment of OCAP.[9]

- CableLabs developed a set of license agreements (CHILA and OCAP) to permit manufacturers to develop *two-way digital cable ready devices*, an effort the Commission has acknowledged on a number of occasions. A number of CE manufacturers, including, Samsung, Panasonic, LG, Digeo, and others have signed these agreements. More recently, Samsung has had certified a two-way OCAP-enabled DTV.

- As suggested by the Commission in its Order implementing the one-way "plug and play" agreement, CableLabs and Microsoft have reached an agreement that will allow Microsoft and PC manufacturers to bring to market digital cable ready Windows Media Center-based PCs for the 2006

---

[9] *Id.* at 6801-6802, para. 17 (In describing the first cable-CE status report, the Commission stated that OCAP is "the basis for interactive functionality in two-way devices" and that OCAP "was far along in development by CableLabs and the parties were cooperating regarding the harmonization of the broadcast Digital Applications Software Environment ("DASE") and OCAP 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*, CS Docket No. 97-80, and *Compatibility Between Cable Systems and Consumer Electronics Equipment,* PP Docket No. 00-67, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-225, 18 FCC Rcd 20885, 20895, para. 20 (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,* MB Docket No. 04-277, Eleventh Annual Report, 20 FCC Rcd 2755, 2853, paras. 188-190 (2005) (discussing OCAP developments); *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming,* MB Docket No. 03-172, Tenth Annual Report, 19 FCC Rcd 1606, 1714, para. 190 (2004); and *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 02-145, Ninth Annual Report, 17 FCC Rcd 26,901, 26,970, para. 169 (2002) (OCAP "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. OCAP 1.0 provides specifications for the downloading and execution of applications, such as program guides and interactive content, to any OCAP-enabled devices by any cable system supporting OCAP.")

holiday season. This agreement will allow consumers to enjoy one-way cable programming, including premium high definition content, on their personal computers and throughout the home on compliant network-connected devices.

- The cable industry has been working diligently to develop a feasible and economical conditional access alternative to CableCARDs both for its own leased set-top boxes and for digital cable ready devices sold at retail. That alternative is *downloadable conditional access* which the Commission has called "a less expensive and more flexible system for both protecting system security and creating a consumer product interface."[10] In a separate report filed contemporaneously today, we advise the Commission that downloadable security is feasible and that the cable industry will commit to implement it in its systems and support it in retail devices. While we do not agree that so-called "common reliance" on the same conditional access systems for both operator-supplied and retail navigation devices is required by Section 629 or any other mandate, the use of downloadable security as proposed will achieve that result. As the Commission has said: "We also recognize … that development of set-top boxes and other devices utilizing downloadable security is likely to facilitate the development of a competitive navigation device market, aid in the interoperability of a variety of digital devices, and thereby further the DTV transition…."[11]

As reflected by these achievements, the Commission and industry have to date made great strides in achieving the goals of Section 629. Today manufacturers can build and consumers can purchase all types of UDCPs at retail – not merely set-top boxes, but also digital television sets and other equipment – which can access one-way cable services without the need for a set-top box.[12] As of the most recent report in November, 2005, there were 374 certified or verified models of CableCARD-enabled one-way products from 22 manufacturers. There have been over 80,000 CableCARDs deployed by cable operators for use in such devices. 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."[13] Although consumers will ultimately decide whether to adopt such devices, the Commission and industry have without question taken concrete steps to make them commercially available and provide an opportunity for them to succeed in the marketplace.

---

[10] *Second R&O*, 20 FCC Rcd at 6810, para. ¶ 31.

[11] *Id.*

[12] These devices are both one-way devices manufactured pursuant to the FCC's "plug and play" rules or the CableLabs' POD-Host Interface License Agreement ("PHILA").

[13] *First R&O*, 13 FCC Rcd at 14784-14785, para. 26.

Commission adoption of the proposals discussed below would provide the final pieces of the puzzle – FCC two-way "plug and play" rules – to provide cable consumers the option to purchase devices at retail which will access interactive cable services without the need for an operator-supplied set-top box. Samsung, Panasonic, LG, and Digeo, among other consumer electronics manufacturers, have signed the CHILA and OCAP agreements providing a path for them to build two-way (interactive) digital cable ready devices under commercial agreements. Samsung has achieved Certification status for such an OCAP-enabled two-way digital television set. By adopting the proposals detailed in this report, the Commission will provide a clear path for additional CE manufacturers to rapidly manufacture and deploy IDCPs.

The Necessary Requirements for a Two-Way Digital Cable Ready Product

While a UDCP can receive cable's one-way linear cable channels, an IDCP built pursuant to the proposals we submit today will also receive the highest value interactive cable services, potentially including high-definition on-demand motion pictures in early release windows. It will receive a cable operator's interactive guide that serves as the operator's principal interface with its customers. It will also receive other cable operator applications, as well as "third party" applications acquired by the cable operator, that are designed to enrich the content and to enhance the consumer's viewing experience.

For these and other features and functions of an IDCP to work as expected, all of its resources – tuner(s), drive, processing power, memory, remote control, keycodes, diagnostics, and more – need to function precisely. The functions once housed in a set-top box must continue to function in an IDCP to present the cable operator's guide and cable services as they are intended to be viewed, and in the manner that consumers expect. An IDCP must be able to listen to the network for guide updates and entitlement messages, to handle content with the security tools required by content providers and already deployed by cable's competitors, and to protect the network against harm from a device with a live upstream connection to the private cable plant – a much greater risk than presented by UDCPs. Since IDCPs can be multi-function devices, manufacturers should have the ability to add additional features and functionalities, while at the same time allowing cable operators and content providers to innovate in the delivery of services and the presentation of content to consumers.

The solutions to these challenging issues have developed through bilateral negotiations between CE manufacturers and cable operators. As we have previously reported to the Commission, efforts to resolve these issues in large forums involving all potentially affected industries, including cable competitors, has proved unwieldy. But cable operators and CE manufacturers made dramatic progress through bilateral negotiations. Indeed, Samsung has produced a working IDCP based on CHILA/OCAP that has already been tested and certified by CableLabs and is ready to be brought to market. This result was achieved by using the CableLabs' OpenCable process, the OpenCable specifications (including the CHILA and OCAP Agreements), the CableLabs

Engineering Change Request ("ECR") process for refining OCAP and associated hardware profiles, and by negotiating the terms of the licenses to use the DFAST and OCAP technologies in interactive products. OCAP is now an ANSI/SCTE and an ITU standard based on world-wide standards, is commercially available through multiple implementers, and has been the basis for six successful CableLabs-sponsored interoperabilty sessions ("interops"). The licenses necessary to built an IDCP have already been commercially accepted by major CE manufacturers (including Samsung, LG, Panasonic, and Digeo), and by other OCAP implementers (Acanet TV, Alticast, Digisoft, eMuse, Ensequence, Osmosys, Video Without Boundaries, and Zentek).

These market-based solutions are also responsive to dramatic changes in the wider video marketplace. As repeatedly evidenced in the Commission's Video Competition docket, cable operators face formidable market competition for customers from direct broadcast satellite, incumbent telephone companies, streaming video over the Internet, and home video, to name only a few. None of these video providers operate under the same "plug and play" rules as are applied to cable. The Commission has specifically exempted DirecTV and Echostar from any separate security requirement, and has shown no inclination to impose that requirement on telephone company video providers, Internet video providers, or distributors of packaged media. None of them have been required to abandon proprietary conditional access, or open up their distribution channels pursuant to FCC regulation as is the case with the cable industry.[14]

DirecTV, Echostar and SBC use proprietary set-top boxes to deliver services. DirecTV has shifted away from multiple, branded CE suppliers to OEM suppliers who build exactly to DirecTV's specifications with DirecTV's brand. When DirecTV wishes to launch a new product, such as a substantial offering of high-definition TV, or when Echostar wishes to store "on-demand" movies in its set-tops, they simply exchange set-tops and offer a competitive product. As such, making navigation devices available at retail is not just a cable-CE issue, because cable operators are simultaneously competing in a facilities-based video marketplace which requires quick innovation in services and networks. The cable industry must continue to innovate in services and networks in order to meet its nimble video competitors. The ultimate beneficiaries are consumers, who have long benefited from vibrant facilities-based competition.

It should not be surprising that the solution to two-way has emerged from marketplace negotiations. The market is adept at adjusting. After the one-way "plug and play" agreement, the parties – without regulatory compulsion – created informal mechanisms to effectively handle the field issues that inevitably arose with a start-up technology.[15] Cable operators and content suppliers have agreed on content protection

---

[14] Of course, Section 629 applies to all "MVPDs," not just cable operators. As a result, even if one accepts SBC's unsupported conclusion that it is not a Title VI "cable operator," even it concedes that it is an MVPD. Therefore, it too – as well as other telephone companies entering the video market – must be subject to Section 629's requirements as are existing cable operators.

[15] *See* Letter from Neal M. Goldberg, General Counsel, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80 (filed October 3, 2005). See also *Communications Daily*, October 5, 2005, at 5.

requirements for various types of content in a manner consistent with, but far more detailed and granular than the "plug and play" encoding rules. CableLabs and Microsoft have been able to work together cooperatively to allow for interconnection of personal computers (PCs) and CableCARD-enabled devices, and approval of associated Digital Rights Management systems for protection and handling of content.[16] Likewise, in the two-way negotiations, the success of bilaterally negotiated licenses and a market-based OCAP approach has come increasingly to shape the group negotiations.

The Commission's objective should be to use regulation to expedite the rollout of IDCPs 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.[17] Instead, the path to successful development and deployment of IDCPs is one where the Commission adopts a suite of rules that incorporates the solutions derived from marketplace negotiations and specifications, and that allows that market to continue to evolve. We propose such a path below which would offer all of the necessary elements for success:

- Practicality: By building on the success of CHILA/OCAP commercial agreements and IPR arrangements, the Commission can adopt a set of rules that can promote innovation and consumer choice, and preserve and promote facilities-based competition. Market-based rules need be no more intrusive than is necessary to let these practical solutions work.
- Quickest Deployment to Consumers: Cable operators, CE manufacturers, consumers and the Commission want to see IDCPs brought to market as soon as possible. This proposal represents the most practical and flexible means for bringing sophisticated products to market expeditiously, and is ready for prompt implementation.
- Innovation: Under this proposal, manufacturers will be able to develop and deploy new and innovative IDCP features and functionalities. Likewise, cable operators will have a continued ability to engage in network and service innovation in the wider market with facilities based competitors.
- Consumer Expectations: The proposal ensures that consumers' expectations are satisfied through a uniform, consistent, and quality viewing experience.

---

[16] Other communications markets have also proven responsive to market solutions. Instant messaging (IM) interoperability was reached by private agreement, rather than through merger conditions. Google is forcing a change in the way that PC office suites are offered in ways that consent decrees have never achieved. Yahoo has become the primary user interface for SBC's DSL service without regulatory compulsion.

[17] Conference Report at 181 (Congressional mandate that Commission rules implementing Section 629 not chill innovation.)

- Content Protection: The proposed rules provide assurance that cable content will be presented in the consistent, quality manner that consumers expect from their cable service providers, and that the cable operators and the content providers from whom they negotiate content rights are able to meet their business needs.
- Consumer Education: The proposal requires advance disclosure to consumers regarding the features and limits of their IDCPs, resulting in significant consumer education about these products.
- Cable Support of OCAP: The cable industry is committed to launch OCAP in 2006, and ramp up to nationwide support for OCAP in 3 years, far more rapidly than comparable FCC technology mandates. The cable industry offers this commitment to give assurances that a system built on OCAP and OpenCable specifications will work.
- Legal constraints: By utilizing solutions developed in the market, the recommended rules respect the bounds of Section 629, which was never intended to constrain network innovation, transform the private cable network into a common carrier, or redesign the services offered by cable.

OCAP Is the Foundation for Two-Way Digital Cable Ready Products

The underlying basis of this proposal is a requirement that IDCPs meet the OCAP specification, something already agreed to by CE in the December, 2002, one-way Memorandum of Understanding ("MOU"). The Commission has already and rightly recognized OCAP as "the basis for interactive functionality in two-way devices."[18] Our proposal incorporates a requirement that IDCPs meet the OCAP specification.

OCAP is a middleware software layer. When applications developers and interactive programmers write their applications to the OCAP platform, the application or service will run on any OCAP-enabled set-top or television receiver with supporting resources, regardless of hardware or operating system software choices. It provides "write once, run anywhere" capability. OCAP practically works to allow multiple navigators,[19] video on demand servers,[20] and third party applications[21] to interoperate with the various operating systems on set top boxes[22] and retail DTVs.

OCAP is founded on a Java Execution Engine approach that has been widely adopted throughout the world. This approach is followed in Europe and Asia with

---

[18] *Second R&O*, 20 FCC Rcd at 6801, para. 17.

[19] E.g., Guideworks, Passport, SARA, Mystro, Optimum.

[20] E.g., SeaChange, C-COR, Concurrent, Broadbus, Arroyo.

[21] E.g., GoldPocket/Tandberg, BIAP, Bluestreak, TVWorks, Zodiac, Navic, Visiware.

[22] E.g., PowerTV, VRTX, Linux, VxWorks, OS20, Aperios.

MHP[23] and ARIB.[24] Similar technology is adopted by the wireless phone industry in Java phones. North American digital broadcasters plan to follow the same approach in ACAP.[25] It is a powerful tool for making applications portable across devices, and for enabling rapid innovation. In the cable context, for example, it allows the many VOD applications currently being developed by multiple manufacturers and programmers to use different commercially-advantageous techniques. The developers of interactive television services and applications may design their services in many innovative ways and still run successfully across cable systems and OCAP devices. Interactive applications 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 such as OCAP. Developers of cross-platform services (such as caller ID on the TV) can launch services and applications without waiting for the evolution of a single standard, winner, or protocol. The applications can be enhanced at the application level whenever innovation or competition requires, without awaiting a change in standards or adoption of unique protocols.

After consideration of a variety of options, the cable industry chose the OCAP path in 1999 and issued the OCAP 1.0 specification in December 2001. The CE industry helped write OCAP and the OCAP test suites. In fact, the majority of OCAP test suites were licensed from a consortium of CE companies. OCAP is rapidly maturing. It is a standard at ITU and at SCTE, an ANSI-certified body. The IPR owners (mainly consumer electronics manufacturers) agreed to and published a reasonable royalty in 2005.[26] Cable and CE experts are working cooperatively in technical teams to refine the OCAP specifications through the Engineering Change Request ("ECR") process at CableLabs.[27] Cable operators are working hand in hand with consumer electronics manufacturers (such as Samsung, LG and Panasonic) to bring two-way OCAP DTVs to market. Commercial implementations of OCAP are widely available from multiple sources. Vidiom offers OCAP Software Developers Kits ("SDKs"). Six successful

---

[23] Multimedia Home Platform (MHP) is a middleware standard within the international Digital Video Broadcasting project for enhanced television.

[24] The Association of Radio Industries and Businesses (ARIB) is a standardization organization in Japan.

[25] Advanced Common Application Platform (ACAP) is a digital broadcasting middleware standard project of the ATSC.

[26] The IPR owners of OCAP include Samsung, Philips, Thomson, Panasonic, Time Warner Cable, Comcast and OpenTV.

[27] The CableLabs ECR process routes suggested technical (or editorial) changes to OpenCable issued specifications to working groups. The ECR Working Groups are made up of cable operator representatives, vendors (including CE manufacturers) with a specific technical expertise and interest in the affected technology and a willingness to actively participate in the Working Group, and CableLabs OpenCable staff. The working groups subject the ECRs to an initial round of peer review. An ECR will then move to an engineering change notice (ECN) which is distributed to the OpenCable reflector for comment. The product of this process is then published as an Engineering Change Order (ECO). An ECR can originate from anyone at anytime. The majority of ECRs that have been adopted through this process are originated by CE companies.

interoperability sessions ("interops") have been held at CableLabs, involving more than 50 companies, including major content suppliers such as Walt Disney-ABC and Showtime. Samsung's two-way OCAP DTV has been certified through the CableLabs testing process.

Other companies that have participated in interops include:

Headend/Servers	Tools	Applications		Implementations
S&T	Extensible Format	NPTV	RTL/Scip	ADB
Unisoft	Digisoft	Ensequence	Tality	Osmosys
Digisoft	Sencore	Emuse	Astra	Pace
Softel	Tektronix	Aptiv Digital	Techscan	Motorola
Thales		Zodiac Gaming	Top5 Media	Cox
Alticast		Cox	Weather Channel	Samsung
NDS		Gist	ESPN	PowerTV/SA
Canal +		SofiaDigital	Starz Encore	Pioneer
Aircode		Tuxia	GuideWorks	Alticast
Harmonic		Snap2	PixelPlay	LGE
Scientific Atlanta		Cardinal		Philips
Motorola		Espial		Panasonic
				Tality
				Vidiom
				Mystro

CableLabs' Host 2.0 Hardware Specification Ensures That Both Cable and CE Applications Will Work on IDCPs

Moving interactive set-top functionalities into a retail DTV is more complicated than implementing a one-way downstream interface, as used in "plug and play" UDCPs. Many more dedicated resources are needed inside the device to receive interactive cable services. Currently, a cable operator can put all the resources it needs to make its functions operate properly into the set-top box to make it work 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 listens to 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 device functions properly for its intended purpose.

With a two-way retail digital cable ready device which essentially has set-top functionality integrated into the product, the operator's and CE manufacturer's resources are shared. Thus, the hardware specifications need to make sure that both the operator's cable services and applications, and the CE manufacturer's native applications, will run properly in a shared device. These issues are largely addressed in the hardware

specifications associated with OCAP, known as Host 2.0. In our proposal, we ask the Commission to adopt rules requiring IDCPs to meet the Host 2.0 specification.

The Host 2.0 specification requires two-way connectivity support via out-of-band and via DOCSIS Signaling Gateway ("DSG") to assure portability across systems. It specifies the capabilities for performing self-diagnostics and displaying the results, and for reporting the results to the CableCARD. The diagnostics include, for example, boot status, memory allocation, software version numbers of code in the IDCP, MAC addresses, port status, and hardware version ID. Likewise, it covers set-up and provisioning. Together, these tools help the cable operator diagnose any consumer problems in retail and leased devices alike quickly and efficiently. The specification requires that OCAP and operator-specified applications must continue to run in the background of an IDCP and have access to cable resources regardless of the mode in which it is operating. It specifies keycode support in the host so that cable operators (and interactive programmers) can tell consumers what buttons to press on a remote control. The Host 2.0 Core Functional Requirements specification is publicly posted at http://www.opencable.com/specifications/.

Under OCAP and Host 2.0, retail products can run applications such as electronic program guides, video-on-demand, switched digital, cross-platform services like caller-ID, and new OCAP services to come (including interactive programming applications). An IDCP manufacturer may include support for either a multi-stream or single-stream CableCARD, at the manufacturer's option. The cable service need not be the only service provided by the display, but when it is presented, it must be presented as offered by the cable operator to consumers. The device may have other features, including a native menu and guide, photo viewers, games, DVD players, or any other input. Neither CE manufacturers nor cable operators are limited to innovations that fit within existing standards.

The current Host 2.0 does not require a DVR, but the OpenCable specifications provide two methods for including DVR functionality in an IDCP, if the manufacturer chooses to offer it. The manufacturer may include a DVR as a UDCP, under the control of its own user interface. Alternatively, the manufacturer may also choose to include a DVR that allows a customer to use the integrated DVR to record from the cable EPG, as though it were a DVR integrated into a set-top box. The specifications for this option are set out in the Host 2.0 DVR extension and the OCAP DVR extension, posted at http://www.opencable.com/specifications/. In order to support connections to multiple devices (including external recorders) via the IEEE-1394 bus, 1394 interfaces with DTCP are required on all IDCP DTVs to the same extent that 1394 is required as an output from a leased set-top box. Although not every potential feature is addressed through these specifications, recommended performance guidelines and reference applications from cable operators may be made available to the developer community as a guide.

As noted above, technical experts from the cable and consumer electronics industries are working out precise sharing arrangements for the tuner, drive, processing power and memory; to assure that guides will continue populating in the IDCP in the background, and that the IDCP can listen for updates and entitlements, handle remote

keycodes, and otherwise perform the many functions that set-tops do in an interactive device while allowing a customer to, for example, tune from an 8VSB tuner to a QAM tuner, or shift from a game to watching TV, or watch various inputs in picture-in-picture mode. These cooperative technical discussions will feed back into the CableLabs ECR process, which will lead to revised specifications. This process allows manufacturers to build to evolving standards, and for cable operators to deploy competitive services, without awaiting the longer process of moving specifications through the standards process.

Adequate Protection is Needed for Consumers to Receive the Highest Value Content

The specifications and related licenses also address security and content protection. 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 proposals include the authorization to use selectable output controls (SOC) under specific circumstances.

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, that it be protected from unauthorized copying, and that cable networks remain flexible and innovative enough to accommodate new business models (like early release windows). Cable operators are routinely reminded that if cable networks 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 no longer be available to cable customers. For example, content protection tools that provide selectable output control have been incorporated in competing platforms.[28] Content suppliers have increased the pressure on cable operators to make certain such tools are in the devices that connect to cable networks – including retail devices – lest their content be compromised by any particular output from such devices. If that were to happen, the losers would be cable customers who would no longer receive high value content as content suppliers refuse to provide it to cable operators. The cable industry must continue to innovate in its technology in order to satisfy these content providers. The ultimate beneficiaries are consumers, who

[28] Today, the ability to selectively control the outputs used by particular content is included in the protocols used in Media Center Edition/Windows Media DRM, emerging specifications for next generation digital media and related technology and Microsoft specifications for IPTV. In order for cable operators to obtain a high-value theatrical motion picture or a premium event offering, the supplier might require the operator to route the content through only the most secure ports that offer the highest protection against unauthorized copying or redistribution over the internet.

will be able to receive high-value content via cable to the extent that the cable industry can continue to attract such high-value content to its networks.

SOC functionality is included in the Host 2.0 specifications, and is implemented through OCAP. 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.

A Reasonable Testing Regime is Critical to Deployment of Products that Work as Intended on Cable Systems

The one-way MOU anticipated that IDCPs would be subject to a more rigorous testing environment than one-way products. The proposed rules provide for the testing of IDCPs to assure they meet applicable requirements. The cable and CE industries have already agreed on the basic structure 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.

The device testing referenced in applicable OpenCable licenses was used successfully to certify the Samsung OCAP-DTV. As a practical matter, host certification testing is initially performed at CableLabs based on the Host 2.0 PICs and ATP[29], which includes the OCAP test suite. Although testing will begin at CableLabs, the cable industry is open to the possibility of a qualified third party test facility.[30] 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.) Every one of the 22 manufacturers of UDCPs has taken advantage of development testing at CableLabs. Tests are administered on a cost recovery, not for profit, basis. The tests, and the suite of applications and devices, will change and evolve as more products and applications are introduced to the market.

The applicable licenses also provide a path toward self-verification.[31] This approach was also offered to and used by the consumer electronics manufacturers

---

[29] PICS proformas and an acceptance test plan are part of the testing regime for devices.

[30] The same offer was made under the one-way "plug and play" regime. There may be greater market interest to take up that offer with two-way products.

[31] The 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

building unidirectional products under the OpenCable process (rather than under the DFAST license).

A Two-Way Device Must Comply With Applicable Licenses

In today's world, technological devices are invariably subject to licenses covering various private intellectual property interests. 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. Adding cable functionality is no exception. The relevant licenses include CHILA, OCAP, and Digital Certificate licenses which CableLabs makes available to all manufacturers on non-discriminatory, cost recovery, terms. CHILA governs the DFAST patent for two-way devices. OCAP governs the OCAP API specification (including copyrights), plus the terms and conditions for licensing and use of the OCAP Conformance Test Package, the OCAP Automated Test Environment (ATE), and certain OCAP software code. The Host 2.0 Digital Certificate Agreement governs the security certificates placed within the device (Host 2.0 and DSG Device Certificates, as well as OCAP and DSG code verification certificates).[32] All of these licenses are published and available from CableLabs on a non-discriminatory, cost recovery, basis.

These licenses are dynamic. Among other things, they help move consumers to protected digital interfaces to advance the digital transition.[33] 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.[34] The robustness rules also evolve, for example moving up to 128 bit AES encryption as security standards have evolved in the

---

process." The demonstration of capability necessarily depends upon the individual performance of each manufacturer.

[32]As DCAS is integrated as an option into OpenCable devices, a DCAS license will grant rights in that intellectual property. The terms of the DCAS license are the subject of NCTA's separate concurrent filing in this docket.

[33] In the meantime, IDCPs with component analog outputs must be able to respond to the Constrained Image Trigger.

[34] As in the one-way license, the licenses for CHILA/OCAP continue to provide for CableLabs to add (or remove) authorized outputs. For example, VCPS was recently added, and Windows Media DRM is expected to be formally added to the published compliance rules in the near future. The current DFAST license includes certain FCC appeal rights from output decisions, although they have never been used. If deemed necessary, a similar provision could be added to CHILA if the proposed regulations are put in place.

market. Such amendments are incorporated in the licenses through the applicable change management provisions.[35]

The CHILA and OCAP licenses are explicitly flexible: their terms invite the addition of new features and functionalities to devices.[36] Likewise, they also permit innovation in cable services and networks that can lead to changes in specifications.[37] Specifications must be able to change quickly in response to competition. The change process in the licenses permit phase in periods and dispute resolution, while assuring cable the right to innovate in services and networks. The licenses also require that cable customers receive the cable service as it is intended to be offered by the cable operator, by requiring that compliant devices not disrupt, impede or impair the cable service. Such clauses are essential to assure that cable customers receive the cable service they expect to receive when they pay for such services, and as those services evolve in the competitive marketplace. (By contrast, cable's video competitors like DBS assure that experience not by supporting separate security module enabled retail devices but by providing end to end service through equipment that is manufactured to precise DBS specifications.)

The CHILA, OCAP, and digital certificate agreements are posted at http://www.opencable.com/documents/. They have already been commercially accepted by major CE manufacturers (including Samsung, LG, Panasonic, and Digeo) and are available to all manufacturers on a non-discriminatory, most favored nation basis.

Consumer Education Requirements Must be Adopted to Avoid Confusion

With the proliferation of a wide variety of television sets, particularly the new digital television sets, disclosure of the capabilities and limitations of such products has often been deemed inadequate. The Commission has repeatedly urged that CE manufacturers use a uniform nomenclature that make functionalities understandable to consumers; that they make certain 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; and that consumer electronics manufacturers and retailers should provide point-of-sale and other marketing information to consumers and clearly label new television sets so that consumers are informed about their prospective purchases before they become owners of the sets. The FCC has included these exhortations in the Second DTV Periodic Review, in its DTV Tuner orders, and in the one-way "plug and

---

[35] Other topics under development include a common, multi-industry multi-output system renewability message (SRM) to revoke compromised devices and CGMS-A generation and pass through.

[36] 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.). OCAP § 2.7 is a parallel clause.

[37] 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." *Second R&O,* 20 FCC Rcd at 6809, para. 30.

play" order.[38] The GAO DTV Transition Report found that 18 of the 23 sales staff at consumer electronics retailers provided inaccurate information about at least one significant aspect regarding DTV.[39] 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.[40] They also would place consumer education obligations on both consumer electronics manufacturers and retailers, the details of which would be developed through rulemaking.

The proposed rules do more than impose a regulatory obligation for consumer education. Requiring that two-way digital cable ready products meet OCAP and OpenCable specifications, the resulting 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 TV displays, diagnostic screens, remote control keycodes, and other features will operate in a way that CSRs are trained to support and that cable customers will understand.

The Proposed Regulations are Based on the One-Way Rules Previously Adopted by the Commission

The structure of the proposed regulations attached as Exhibit B is based on the Commission's current unidirectional rules.[41] The rules define obligations of Part 15 IDCP devices by pointing to existing commercially adopted OCAP and Host 2.0 specifications and testing arrangements which can continue to develop as cable operators and manufacturers gain more experience with those specifications. While the

---

[38] *Requirements for Digital Television Receiving Capability*, ET Docket No. 05-24, Second Report and Order, FCC 05-190, 37 Comm. Reg. (P&F) 143, para. 28 (rel. November 8, 2005); *Requirements for Digital Television Receiving Capability*, ET Docket No. 05-24, Report and Order and Further Notice of Proposed Rulemaking, FCC 05-121, 36 Comm. Reg. (P&F) 65, para. 19 and separate statement of Commissioner Copps (rel. June 9, 2005); *Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MB Docket No. 03-15, 19 FCC Rcd 18279, paras. 166, 168 (rel. Sep. 7, 2004); *Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, CS Docket No. 97-80, and *Compatibility Between Cable Systems and Consumer Electronics Equipment,* PP Docket No. 00-67, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-225, 18 FCC Rcd 20885, 20904, 20967, para. 41 and separate statement of Commissioner Copps (rel. Oct. 9, 2003).

[39] "TELECOMMUNICATIONS: Additional Federal Efforts Could Help Advance Digital Television Transition," General Accounting Office Report, GAO-03-7, Nov. 2002.

[40] *Commercial Availability of Navigation Devices*, CS Docket No. 97-80, and *Compatibility Between Cable Systems and Consumer Electronics Equipment,* PP Docket No. 00-67, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-225, 18 FCC Rcd 20885, 20904, para. 41 (rel. Oct. 9, 2003).

[41] Where existing UDCP references have been updated, we have also included current references and noted those changes in notes to the proposed rules.

specifications include SOC requirements, the exercise of that tool would be subject to proposed encoding rules to be included in Subpart W.

The largest cable operators have voluntarily committed to begin to launch OCAP in 2006. The proposed amendment to Part 76 takes the unprecedented step of volunteering the cable industry to meet periodic support benchmarks, and to complete the installation of a specific technology – OCAP – in headends nationwide by July 1, 2009.[42] Generally, the Commission's preference is to permit market forces, rather than regulation, to define technological choices and their introduction to the market. The cable industry offers this commitment to deploy OCAP over 3 years to give assurances to consumer electronics manufacturers that an IDCR built to OCAP and OpenCable specifications will work nationwide. The three-year timeframe is more rapid than comparable FCC technology mandates (*see* Exhibit A: Technology Phase-In Periods), but the cable industry is willing to meet it under the terms proposed.[43]

The rules also fine tune interfaces: they expand the commitment to the DVI/HDMI input (which provides an uncompressed broadband path into TVs) to all TVs, including smaller screens; and they maintain the requirement for a 1394 interface from operator-supplied HD set-tops, but make it available only on subscriber request.

As noted above, the proposals submitted today include a combination of proposed rules, voluntary commitments and expected marketplace developments which, in combination, will bring two-way digital cable ready devices to market as quickly as possible. One example of how the marketplace has already started to address such issues without the need for regulation is in how DTVs correct internal problems. DTVs today use flash cards and other hard media to fix defective firmware. As DTVs grow more complex, and offer more features, manufacturers are seeking other means for distributing "bug fixes." In Europe, the BBC distributes "bug fixes" via a dedicated broadcast channel. The cable industry is currently working with CE manufacturers on a means to deliver authenticated corrected code images via a national over-the-air broadcast signal similar to the way the StarSight guide was distributed using a national network signal. Such an approach could serve to correct code whether the DTV was connected to a cable, satellite, terrestrial, or other feed. Although not required by law, the cable industry is working to bring this solution about in order to improve the customer experience with digital cable ready products.

Conclusion

Under both the Commission's one-way "plug and play" rules and an earlier CableLabs license regime ("PHILA"), one-way digital cable ready devices are

---

[42] Nothing in this proposal would prohibit the Commission from granting small system or similar waivers in appropriate circumstances.

[43] If additional or less flexible obligations are imposed, the timetable for deployment will necessarily be delayed. For example, the requirement to support DVR profiles other than the UDCP or DVR extension profiles would extend the transition period much longer.

commercially available. They can access one-way cable services without the need for a set-top box and be manufactured and sold by companies not affiliated with a cable operator. As noted, over 370 models of such devices from 22 manufacturers are currently available and over 80,000 CableCARDs have been deployed by operators for use in such devices.[44] The Commission has observed that the "objective of Section 629 is to open new competitive outlets for devices that have in the past tended to be exclusively available from or under the control of service suppliers."[45] There can be no question but that goal has been achieved for one-way digital cable ready devices.

While the Commission has noted that commercial availability is "not a development easily mandated by a set of Commission rules,"[46] with the adoption of the proposals in this report, the Commission will have adopted all regulations necessary to assure the continued development, deployment and support – the commercial availability – of IDCPs. 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."[47]

---

[44] As noted above, DirecTV has shifted away from multiple, branded CE suppliers to OEM suppliers who build exactly to DirecTV's specifications with DirecTV's brand, as does Echostar

[45] *Implementation of Section 304 of the Telecommunications Act of 1996*, CS Docket No. 97-80, Order on Reconsideration, FCC 99-95, 14 FCC Rcd 7596, 7601, para. 12 (1999).

[46] *Id.*

[47] *Id. at* 7597, para. 1.

Respectfully submitted,

/s/ Daniel L. Brenner

Daniel L. Brenner
Neal M. Goldberg

National Cable & Telecommunications Association
1724 Massachusetts Avenue, N.W.
Washington, D.C. 20036-1903

William A. Check, Ph.D.
Senior Vice President, Science & Technology

Andy Scott
Senior Director, Engineering

Paul Glist
Cole, Raywid, & Braverman, L.L.P.
1919 Pennsylvania Avenue, N.W.
Suite 200
Washington, D.C. 20006
202-828-9820
pglist@crblaw.com

November 30, 2005

cc: Donna Gregg
Bill Johnson
Deborah Klein
Natalie Roisman
Mary Beth Murphy
John Wong
Alison Greenwald
Andrew Long
Tom Horan
Steve Broeckaert
Michael Lance
John Gabrysch
Sarah Mahmood
Jeff Neuman
Alan Stillwell
Priscilla Lee

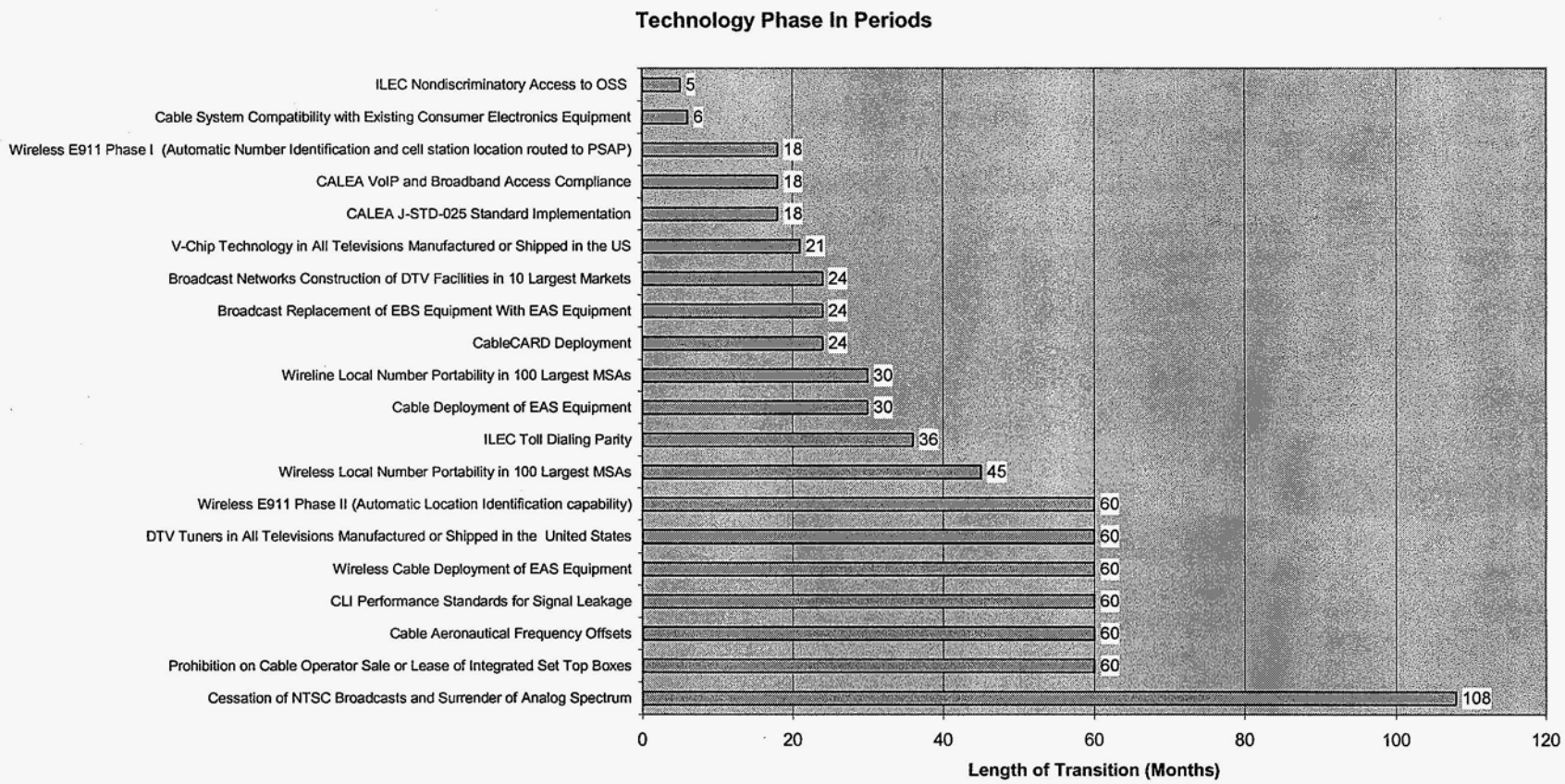

Exhibit A: Technology Phase In Periods

Exhibit B: Proposed Regulations

Part 15 of the Code of Federal Regulations is amended as follows:

PART 15 – RADIO FREQUENCY DEVICES

1. The authority for Part 15 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302, 303, 304, 307, 336, and 544a.

2. Amend §15.38 to read as follows[1]:

***

(c) The following materials are freely available from at least one of the following addresses: Cable Television Laboratories, Inc., 858 Coal Creek Circle, Louisville, Colorado, 80027, www.cablelabs.com/udcp; or at Consumer Electronics Association, 2500 Wilson Blvd., Arlington, VA 22201, http://www.ce.org/public_policy.

(1) Uni-Dir-PICS-I03-040831[2]: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma," 2003, IBR approved for §15.123.

(2) Uni-Dir-ATP-I05-040629[3]: "Uni-Directional Receiving Device Acceptance Test Plan," 2004, IBR approved for §15.123.

(3) OpenCable Application Platform Specification, OC-SP-OCAP1.0-I16-050803.

(4) OpenCable™ Host Device 2.0 Core Functional Requirements OC-SP-HOST2.0-CFR-I06-050708

(5) CableCARD™ Interface 2.0 Specification OC-SP-CCIF2.0-I03-051117

(6) CableCARD™ Copy Protection 2.0 Specification OC-SP-CCCP2.0-I02-050708

§15.123 Labeling of Digital Cable Ready Products.
***
(c) ***

(1) The manufacturer or importer shall have a sample of its first

[1] Items in double underline have been previously agreed to in cable and CE FCC filings on 3-10-2004 to implement the joint cable-CE agreement on testing of UDCPs.
[2] This reference updates the reference currently contained in FCC rules.
[3] This reference updates the reference currently contained in FCC rules.

model of a unidirectional digital cable product tested to show compliance with the procedures set forth in Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) at a qualified test facility. If the model fails to comply, t~~T~~he manufacturer or importer shall have any modifications to the product to correct failures of the procedures in Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) retested at a qualified test facility and the product must comply with the applicable procedures in § 15.38 before the product or any related model may be labeled or marketed. If the manufacturer or importer's first unidirectional digital cable product is not a television, then that manufacturer or importer's first model of a unidirectional digital cable product which is a television shall be tested pursuant to this subsection as though it were the first unidirectional digital cable product.

(2) A qualified test facility is a ~~facility~~ testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States or an appropriately qualified independent laboratory with adequate equipment and competent personnel knowledgeable with respect to the standards referenced in paragraph (b) of this section concerning the procedures set forth in Uni-Dir-PICS- I03-040831[4]: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) and with Uni-Dir-ATP- I05-040629[5]: "Uni-Directional Receiving Device Acceptance Test Plan," 2004, (incorporated by reference, see § 15.38). For any independent testing laboratory to be qualified hereunder such laboratory must ensure that all its decisions are impartial and have a documented structure which safeguards impartiality of the operations of the testing laboratory. In addition, any independent testing laboratory qualified hereunder must not supply or design products of the type it tests, nor provide any other products or services that could compromise confidentiality, objectivity or impartiality of the testing laboratory's testing process and decisions.

(3) Subsequent to the testing of its initial unidirectional digital cable product model, a manufacturer or importer is not required to have other models of unidirectional digital cable products tested at a qualified test facility for compliance with the procedures of Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) unless the first model tested was not a television, in which event the first television shall be tested as provided in § 15.123(c)(1). ~~However, t~~The manufacturer or importer shall ensure that all subsequent models of unidirectional digital cable products comply with the procedures in the Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) and all other

[4] This reference updates the reference currently contained in FCC rules.
[5] This reference updates the reference currently contained in FCC rules.

applicable rules and standards. The manufacturer or importer shall maintain records indicating such compliance in accordance with the verification procedure requirements in part 2, subpart J of this chapter. The manufacturer or importer shall further submit documentation verifying compliance with the procedures in the Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) to ~~a facility~~ the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

(4) Unidirectional digital cable product models must be tested for compliance with Uni-Dir-PICS-I03-040831: "Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma" (incorporated by reference, see § 15.38) in accordance with Uni-Dir-ATP-I05-040629: "Uni-Directional Receiving Device Acceptance Test Plan," 2004, (incorporated by reference, see § 15.38) or an equivalent test procedure that produces identical pass/fail test results. In the event of any dispute over the applicable results under an equivalent test procedure, the results under Uni-Dir-ATP-I05-040629: "Uni-Directional Receiving Device Acceptance Test Plan," 2004 shall govern.

3. Add §15.124 to subpart B to read as follows:

§15.124 Labeling of Interactive Digital Cable Ready Products.

(a) The requirements of this section shall apply to interactive digital cable products. Interactive digital cable products are two-way devices that accept a Point of Deployment module (POD) and which are capable of receiving interactive services, including a cable operator's interactive program guide, switched digital video, and other interactive applications, which include, but are not limited to televisions and set-top-boxes connected to digital cable systems.

(b) An interactive digital cable product may not be labeled with or marketed using the term "IDCR," "Interactive Digital Cable Ready," "IDCP," or "Interactive Digital Cable Product" or otherwise indicates that the device accepts a POD for interactive digital cable service or conveys the impression that the device is compatible with interactive digital cable service unless it implements, at a minimum, the following features:

(1) Tunes NTSC analog channels transmitted in-the-clear.

(2) Tunes digital channels that are transmitted in compliance with ANSI/SCTE 40-2004: "Digital Cable Network Interface Standard" (incorporated by reference, see § 15.38), provided, however, that with respect to Table B.11 of that standard, the phase noise requirement shall be -86 dB/Hz including both in-the-clear channels and channels that are subject to conditional access.

(3) Allows navigation of channels based on channel information

(virtual channel map and source names) provided through the cable system in compliance with ANSI/SCTE 65 2002: "Service Information Delivered Out-of-Band for Digital Cable Television" (incorporated by reference, see § 15.38), and/or PSIP-enabled navigation (ANSI/SCTE 54 2004: "Digital Video Service Multiplex and Transport System Standard for Cable Television" (incorporated by reference, see § 15.38)).

(4) Includes the POD-Host Interface specified in CableCARD Interface 2.0 Specification OC-SP-CCIF2.0-I03-051117 and CableCARD Copy Protection 2.0 Specification OC-SP-CCCP2.0-I02-050708 (incorporated by reference, see § 15.38).

(5) Responds to emergency alerts that are transmitted in compliance with ANSI/SCTE 54 2004 (formerly DVS 241): "Digital Video Service Multiplex and Transport System Standard for Cable Television" (incorporated by reference, see § 15.38).

(6) Includes middleware meeting the OpenCable Application Platform Specification, OC-SP-OCAP1.0-I16-050803.

(7) Meets the requirements of OpenCable Host Device 2.0 Core Functional Requirements, OC-SP-HOST2.0-CFR-I01-040831

(8) In addition to the above requirements, an interactive digital cable television may not be labeled or marketed as interactive digital cable ready or with other terminology as described in paragraph (b) of this section unless it includes a DTV broadcast tuner as set forth in §15.117(i)

(c) A manufacturer or importer of an interactive digital cable product labeled or marketed as interactive digital cable ready or with other terminology as described in paragraph (b) of this section may not manufacture or import a remote control provided with or intended for use with such an interactive digital cable product without providing the infrared codes which control the interactive digital cable product in advance to the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

(d) Each interactive digital cable product that includes a Y,Pb,Pr analog input shall also include one or more approved protected digital inputs. Each interactive digital cable product that includes Y,Pb,Pr analog outputs shall also include one or more approved protected digital outputs. Each interactive digital cable product shall include a DVI/HDCP or HDMI/HDCP interface.

(e) An interactive digital cable product is deemed to meet the foregoing requirements if it meets successor specifications published by the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

(f) Before a manufacturer's or importer's interactive digital cable product labeled or marketed as interactive digital cable ready or with other terminology as described in paragraph (b) of this section may be marketed, it must be tested to show compliance with the applicable PICS proforma, acceptance test plan, and interoperability requirements established by the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States, and the product must comply with the applicable requirements before the product or any related model may be marketed. If the model fails to comply, the manufacturer or importer shall have any modifications to the product to correct failures retested at the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

4. Add §15.125 to subpart B to read as follows:

§15.125 Consumer Education for Interactive Digital Cable Ready Products.

(a) The requirements of this section shall apply to interactive digital cable products labeled or marketed as interactive digital cable ready or with other terminology as described in Section 15.124(b).

(b) A manufacturer or importer must meet the following minimum consumer education requirements: [[to be determined in FNPRM. This should include standard vocabulary for features and functions that can be used in parallel to marketing terms.]]

(c) A manufacturer or importer may not sell interactive digital cable products to or through retailers unless those retailers meet the following minimum consumer education requirements: [[to be determined in FNPRM. This should include standard vocabulary for features and functions that can be used in parallel to marketing terms.]]

Part 76 of the Code of Federal Regulations is amended as follows:

PART 76 – MULTICHANNEL VIDEO AND CABLE TELEVISION SERVICE

5. Amend §76.640 by amending paragraph (b)(4)(ii) to read:

(ii) Effective July 1, 2005, include a DVI or HDMI interface on all high definition set-top boxes acquired by a cable operator for distribution to customers.

6. Amend § 76.640 (b)(1)(iv)(B) to read as follows[6]:

(B) PSIP data describing a twelve-hour time period shall be carried for each service in the transport stream. This twelve-hour period corresponds to delivery of the following event information tables: EIT-0, -1, -2 and -3. Additional event information tables may be carried at the option of the cable operator;

7. Amend §76.640 (b)(1)(iv)(C) to read as follows:

(C) The format of event information data format shall conform to ATSC Document A/65B: "ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (Revision B)" (incorporated by reference, see § 76.602). Cable operators are not required to correct event information data that does not conform to ATSC A/65B;

8. Amend §76.640 (b)(1)(iv) to read as follows.

(iv) For each digital transport stream that includes one or more available audio/video services carried in-the-clear, such transport stream shall include virtual channel data in-band in the form of ATSC Document A/65B: "ATSC Standard: Program and System Information Protocol for Terrestrial Broadcast and Cable (Revision B)" (incorporated by reference, see § 76.602), when available from the content provider. With respect to in-band transport:

9. Add §76.641 to subpart B to read as follows:

§76.641 Support for Interactive Digital Cable Ready Products on Digital Cable Systems.

(a) The requirements of this section shall apply to digital cable systems with an activated channel capacity of 750 MHz or greater serving 5,000 or more subscribers. For purposes of this section, digital cable systems shall be defined as a cable system with one or more channels utilizing QAM modulation for transporting programs and services from its headend to receiving devices.

(b) Cable operators shall support interactive digital cable products, as defined in §15.124 of this chapter, through the provisioning of Point-of-Deployment modules (PODs) and services, as follows:

(1) Digital cable systems with an activated channel capacity of

[6] Amendments concerning PSIP were previously filed in NCTA's Petition for Reconsideration of December 29, 2003.

750 MHz or greater serving 5,000 or more subscribers shall comply with the technical standards and requirements set forth in Section 76.640(b)(1).

(2) Digital cable systems with an activated channel capacity of 750 MHz or greater serving 5,000 or more subscribers shall comply with the technical standards and requirements set forth in Section 76.640(b)(2).

(3) Software code downloads required for network or computer security purposes, diagnostics, technical support, or repair, for the detection or prevention of fraudulent activities, or for the delivery of services by a cable operator to the customer, are not restricted by this section.

(c) Effective July 1, 2006, digital cable systems shall make available, upon request of a customer, Multistream CableCARDs that comply with the standards specified in CableCARD Interface 2.0 Specification OC-SP-CCIF2.0-I03-051117 and CableCARD Copy Protection 2.0 Specification OC-SP-CCCP2.0-I02-050708 (incorporated by reference, see § 15.38). Effective December 1, 2006, digital cable systems shall ensure an adequate supply of Multistream CableCARDs that comply with the standards specified in CableCARD Interface 2.0 Specification OC-SP-CCIF2.0-I03-051117 and CableCARD Copy Protection 2.0 Specification OC-SP-CCCP2.0-I02-050708 (incorporated by reference, see § 15.38) to ensure convenient access to such Multistream CableCARDs by customers.

(d) Each cable operator serving more than 2,000,000 multichannel video programming subscribers nationwide shall meet these benchmarks: (i) No later than October 1, 2006, each such cable operator shall begin deploying network support for the OpenCable Application Platform Specification, OC-SP-OCAP1.0-I16-050803 (incorporated by reference, see § 15.38). (ii) No later than July 1, 2008, each such cable operator shall ensure that at least 50% of its subscribers served by digital cable systems with an activated channel capacity of 750 MHz or greater serving 5,000 or more subscribers shall be served by digital cable systems that support interactive digital cable products, as defined in §15.124 of this chapter.

(e) No later than July 1, 2009, all digital cable systems with an activated channel capacity of 750 MHz or greater serving 5,000 or more subscribers shall support interactive digital cable products, as defined in §15.124 of this chapter.

(f) A digital cable system is deemed to meet the foregoing requirements if it meets successor specifications published by the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States for interoperability with successor specifications applicable to interactive digital cable products.

10. Add §76.643 to subpart B to read as follows:

§76.643 Compliance. Notwithstanding Section 76.1201, a cable operator may prevent connection to its system of devices that do not meet the requirements of Section 15.123 or 15.124.

11. Add 76.644 to Subpart B to read as follows:

§76.644 Consumer education program

Cable system operators shall provide a consumer education program on digital cable ready products to their subscribers that shall inform subscribers of the functionalities and limitations of digital cable ready devices when connected directly to the cable system. In conjunction with this information, cable system operators shall briefly explain the types of problems that could occur and offer suggestions for resolving those problems. Information may be disseminated to consumers in many different ways, including but not limited to cable subscriber notices, Internet web sites, or point of sale marketing materials to be provided to retailers.

12. Amend 76.1902(s) of Subpart W to read as follows:

§76.1902 Definitions ***
(s) Unencrypted Broadcast Television means any service, Program, or schedule or group of Programs, that is a further transmission of a broadcast transmission (i.e., an over-the-air transmission for reception by the general public using radio frequencies allocated for that purpose) that substantially simultaneously is made by a terrestrial television broadcast station located within the country or territory in which the entity further transmitting such broadcast transmission also is located, where such broadcast transmission is not subject to a Commercially-Adopted Access Control Method (e.g., is broadcast in the clear to members of the public receiving such broadcasts), regardless of whether such entity subjects such further transmission to an access control method.

13. Amend 76.1903 of Subpart W to read as follows:

§76.1903 Output Controls

A Covered Entity may attach or embed data or information with Commercial Audiovisual Content, or otherwise apply to, associate with, or allow such data to persist in or remain associated with such content, so as to prevent its output through any analog or digital output authorized or permitted under license, law or regulation governing such Covered Product, as follows.

(a) To prevent or limit the output of Video-on-Demand, Subscription-on-Demand, or Pay-Per-View transmissions by Covered Products through any analog or digital output.

(b) To prevent or limit the output of Pay Television Transmissions, Non-Premium Subscription Television, and Free Conditional Access Delivery transmissions through any analog or digital output.

(c) To prevent or limit the output of any Undefined Business Model through any analog or digital output.

(d) Dispute Resolution

(1) Complaints. The use of output controls is subject to Commission review upon complaint.

(2) Complaint Process. Any interested party ("Complainant") may file a complaint with the Commission objecting to application of output controls.

(i) Pre-complaint resolution. Prior to initiating a complaint with the Commission under this subsection, the Complainant shall notify the Covered Entity that it may file a complaint under this subsection. The notice must be sufficiently detailed so that the Covered Entity can determine the specific nature of the potential complaint. The potential Complainant must allow a minimum of thirty (30) days from such notice before filing such complaint with the Commission. During this period the parties shall endeavor in good faith to resolve the issue(s) in dispute. If the parties fail to reach agreement within this 30 day period, Complainant may initiate a complaint in accordance with the procedures set forth herein.

(ii) Complaint. Within two years of a Covered Entity's first use of output controls, a Complainant may file a complaint with the Commission objecting to application of the output controls to the service at issue. Such complaint shall state with particularity the basis for objection.

(A) The complaint shall contain the name and address of the complainant and the name and address of the Covered Entity.

(B) The complaint shall be accompanied by a certification of service on the named Covered Entity.

(C) The complaint shall set forth with specificity all information and arguments relied upon. Specific factual allegations shall be supported by a declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

(D) The complaint shall set forth attempts made by the Complainant to resolve its complaint pursuant to paragraph (a)(2)(i) of this section.

(iii) Public Notice. The Commission shall give public notice of

the filing of the complaint. Once the Commission has issued such public notice, any person otherwise entitled to be a Complainant shall instead have the status of a person submitting comments under paragraph (d)(2)(iv) of this section rather than a Complainant.

(iv) Comments and Reply.

(A) Any person may submit comments regarding the complaint within thirty (30) days after the date of public notice by the Commission. Comments shall be served on the Complainant and the Covered Entity and on any persons listed in relevant certificates of service, and shall contain a detailed full statement of any facts or considerations relied on. Specific factual allegations shall be supported by a declaration of a person or persons with actual knowledge of the facts, and exhibits shall be verified by the person who prepares them.

(B) The Covered Entity may file a Response to the Complaint and comments within twenty (20) days after the date that comments are due. Such Response shall be served on all persons who have filed complaints or comments and shall also contain a detailed full showing, supported by affidavit or declaration, of any additional facts or considerations relied on. Replies shall be due ten (10) days from the date for filing a Response.

(v) Basis for Commission determination. In a permit-but-disclose proceeding, unless otherwise specified by the Commission, to determine whether output controls may be applied, the complainant shall have the burden of proof to establish that application of the output controls is not in the public interest. In making any such determination, the Commission shall take into account the following factors:

(A) The benefit to consumers of the service, including but not limited to earlier release windows, more favorable terms, innovation or original programming

(B) The limitation on the consumers' control over the service;

(C) The reasonable consumer information provided to consumers in association with the exercise of output controls

(D) The extent to which an offering made available by a Covered Entity with output controls is comparable to an offering made to a substantial number of customers by telephone and DSL providers, Internet, packaged media, or other competing technologies for the distribution of video that are not subject to these rules for output controls.

(vi) Determination Procedures. The Commission may specify other procedures, such as oral argument, evidentiary hearing, or further written submissions directed to particular aspects, as it deems appropriate.

(d) The obligations and procedures as to output controls set forth in this section do not apply in the case of a temporary bona fide trial of a service, or in the case of any waiver granted pursuant to Section 76.7.

(e) Nothing in this section shall be construed as prohibiting a Covered Entity from encoding, storing or managing Commercial Audiovisual Content within its distribution system or within a Covered Product under the control of a Covered Entity's Commercially Adopted Access Control Method, provided that the outcome for the consumer from the application of the output control rules set out in this section is unchanged thereby when such Commercial Audiovisual Content is released to consumer control.

14. Add 76.1908 to Subpart W to read as follows:

§76.1908 Sunset.

Sections 76.1902-.1906 shall cease to apply if any amendment to Title 17 of the US Code permits the copying of Commercial Audiovisual Content provided by a Covered Entity to a Covered Product which has been lawfully Encoded under this Part to prevent or limit the copying thereof.