

June 6, 2002

W. Kenneth Ferree  
Chief, Media Bureau  
Federal Communications Commission  
The Portals  
445 12th Street, S.W.  
Washington, D.C. 20554

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

Dear Mr. Ferree:

As you requested, we are writing on behalf of Cable Television Laboratories, Inc. ("CableLabs") and the National Cable & Telecommunications Association ("NCTA") to address the questions you and your colleagues raised at the meeting you convened on May 10, 2002 regarding copy protection and related issues. We appreciate your efforts in trying to help resolve some of these difficult issues, and we hope that these responses and our participation in the meetings will assist you in those efforts.

The CableLabs OpenCable™ project, which developed the "POD-Host" interface specification, is part of an industry-wide effort to encourage competing manufacturers to build competitive but interoperable next-generation digital consumer devices, and to promote consumer choice, retail availability and competition. Part of CableLabs' challenge has been to maintain the balance necessary to promote innovation in the set-top market while providing adequate assurances to owners of the type of high-value programming that our customers desire. The copy control mechanisms which we have incorporated into the "POD-Host" interface specification and the POD-Host Interface License Agreement ("PHILA") are essential to (i) obtaining the content our customers want, (ii) being fully competitive with Direct Broadcast Satellite ("DBS") providers who have installed similar tools, and (iii) being competitive with future distribution technologies, such as Internet "streaming," which may develop similar tools affording them access to such programming. In reviewing the parties' answers to the Bureau's questions, it will be helpful to consider them in the context of at least three aspects of the larger picture.

First, the debate over copy protection and selectable output controls has arisen in a climate of fierce competition for programming. DBS providers enjoy an exemption from the navigation device rule; they therefore can and do specify exactly the features – including, if they wish, copy control tools and selectable output controls – that must be built into their receivers by their self-selected manufacturers for retail sale through their self-selected distributors. By contrast, there will be a myriad of cable television set-top boxes and other "host" devices sold on the retail market which can access cable services but which the cable operator will not supply. Specifying similar copy protection and output tools in such devices allows cable to compete on an equal footing for programming with DBS and other distribution technologies. It is

incongruous at best for the Consumer Electronics Association, the Consumer Electronics Retailers Coalition, CE manufacturers, and retailers to decry the requirement for such tools in PHILA, when they and their constituent members build and sell DBS equipment that includes the very same requirements.

Second, much of this debate arises from the failure of the consumer electronics industry to provide the interfaces and appropriate copy protection mechanisms needed to provide digital and high-definition services to the wide variety of TV sets in the market. While the cable industry supported 1394/5C and the DVI/HDCP connector, CE manufacturers opposed any kind of copy protection, and sought to flood the market with an installed base of DTVs that lacked any tools to respect intellectual property rights. Even now, while objecting to the possibility of marking programming for “down-resing” when delivered over unprotected component analog outputs, manufacturers continue to bring DTVs to market without digital connectors and copy protection. CE vendors are creating the very legacy problem for consumers, and greater need for “down-resing,” for which cable is being faulted.

Third, CableLabs has designed PHILA with a dynamic and competitive market in mind. CableLabs’ seeks to encourage competing manufacturers to build competitive but interoperable next-generation digital consumer devices, and specifically invites the addition of new features and functionalities to navigation devices. The specifications allow manufacturers to build a “family” of products with different features and functions at different price points. The certification process relies primarily on self-testing, with expeditious audits and limited testing at CableLabs. If the manufacturer chooses to include the OpenCable Applications Platform (“OCAP”) in a device, it will support nationally portable applications. OCAP also has the advantage of being based on a stable, mature specification from the European DVB-MHP specification – a specification to which Sony, Panasonic, Philips, and other major consumer electronics manufacturers have already built televisions and set-top boxes. Cable companies have already pledged their support of OCAP-enabled devices. But it remains the manufacturers’ choice: they may build devices with proprietary features, or devices with OCAP that will support nationally portable applications.

## QUESTIONS

### I. PROCESS ISSUES

#### A. **Has the issue of indemnification against 3<sup>rd</sup> party intellectual property infringement claims been resolved?**

1. CableLabs believes that indemnification issues have been resolved consistent with agreements involving specifications such as PHILA and commercial reasonableness. First, PHILA reduces the likelihood of intellectual property claims against licensees by including a standard “non-assert” clause amongst all Licensees. Each Licensee waives rights to assert intellectual property (“IP”) rights against CableLabs and other Licensees for use of the Dynamic Feedback Arrangement Scrambling Technique (“DFAST”) encryption technology that the manufacturers are taking under patent license from CableLabs. See PHILA, Sections 8.5, 1.10 (“Essential Patent Claims”). Some manufacturers raised concerns (following the submission of the original PHILA to the Commission in December 2000) that a later change in specifications might compromise other intellectual property rights (“IPR”) in a manufacturer’s patent portfolio.

CableLabs revised PHILA to protect a Licensee's patent portfolio by adopting clarifying language similar to language in the 5C license agreement.

2. Second, CableLabs offers the DFAST technology without royalty. CableLabs is a non-profit research and development consortium and will not share in the commercial proceeds that manufacturers may gain from developing commercial products under this royalty-free license. Accordingly, the DFAST technology is offered with a limited warranty, including no knowledge of any notice or claim, threatened or pending, that the use of this CableLabs technology infringes any third party's intellectual property rights. This warranty is based on reasonable inquiry of CableLabs and its engineers, who are well versed in the field and are constantly engaged in discussions with many manufacturers, firms, and engineers. Such a warranty is commensurate with the royalty-free nature of this agreement. See PHILA, Sections 8.1, 8.3.

3. Third, CableLabs provides a joint defense mechanism in PHILA. See PHILA, Section 8.4. In response to manufacturer concerns over allocation of joint defense liabilities, CableLabs revised Section 8.4 to reflect that a manufacturer who has not submitted an "activation notice" (that is, one that has not moved from testing to commercial deployment), is not obligated for joint defense liabilities.

4. As evidence of the reasonableness of the PHILA rights and indemnification clauses, we note that they have been accepted by Scientific-Atlanta, Inc., General Instrument Corporation d/b/a Motorola Broadband Communications Sector, Pace Micro Technology PLC, Pioneer Digital Technologies, Inc. and the Cable and Communications Group of the Business Solutions Division of Pioneer Electronics (USA) Inc. – all sophisticated parties who deal routinely with IP rights and indemnification clauses. See, Letter from Paul Glist to Magalie Roman Salas, December 27, 2001, CS Docket No. 97-80; Letter from Paul Glist to Kenneth Ferree, June 6, 2002 and [http://www.cablelabs.com/news\\_room/PR/02\\_pr\\_pioneer\\_phila\\_060602.html](http://www.cablelabs.com/news_room/PR/02_pr_pioneer_phila_060602.html)

**B. Does the PHILA non-disclosure agreement prevent a party from filing a complaint with the Commission regarding the terms of either of the PHILAs filed in the navigation devices proceeding?**

5. CableLabs was quite surprised when a Mitsubishi representative stated during congressional discussions that by entering into commercial negotiations under the PHILA non-disclosure agreement ("NDA"), the company would be unable to raise concerns at the FCC. Mitsubishi had never advanced that interpretation of the PHILA NDA to CableLabs before it was presented to Congress. This interpretation does not reflect CableLabs' intent. Nor has this interpretation constrained any manufacturer (including their trade associations) from submitting their concerns over PHILA to the FCC and to Congress.<sup>1</sup> In any event, the CableLabs' NDA does not restrict the disclosure of information that is obtained lawfully from public sources, which would include both of versions of PHILA that have been filed with the FCC.

---

<sup>1</sup> See, e.g., Reply Comments of The Consumer Electronics Association, CS Docket No. 97-80, filed December 18, 2000, Matsushita Electronics Corporation of America Ex Parte Presentation, CS Docket No. 97-80, filed April 20, 2001, Sony Electronics, Inc. Summary Disclosure of Oral Ex Parte Presentation, CS Docket No. 97-80, filed January 15, 2002, Thomson Multimedia Ex Parte Communication, CS Docket No. 97-80, filed February 11, 2002.

**C. Does the PHILA violate any of the Commission’s navigation devices rules?**

6. CEA has previously claimed that the inclusion of copy-protection tools in PHILA violates the Navigation Device Rules. The FCC rejected that claim.<sup>2</sup>

7. At the FCC’s Meeting of May 10, 2002, participants who made this claim were hard-pressed to support it. Eventually, a Sony representative contended that PHILA violated Rule 76.1204(c), which provides that contracts and IPR should not preclude navigation devices from adding features or functions. But, in fact, PHILA *specifically* invites manufacturers to add features and functionalities to navigation devices. PHILA Section 4.2 provides that, with limited exceptions, “nothing in this Agreement shall preclude Licensee from including in a Host Device additional features or functionalities not specified in the OpenCable HOST-POD Specifications or the applicable Core Functional Requirements. ...” Consistent with FCC rulings, the conditions are to (i) avoid physical harm to the network or disruption of service; (ii) permit the delivery of services offered over the cable system to cable subscribers; (iii) protect system security; and (iv) protect the legal rights of the cable operator to prevent theft of service. In addition, the Devices must meet the “Compliance” (copy-protection) and “Robustness” (tamper-resistance) rules – all of which are consistent with the Commission’s Navigation Device Rules.

**D. How many certification processes are there? Does signing a PHILA agreement require a set-top to be OpenCable/OCAP certified?**

8. CableLabs has one certification process. The OpenCable Host specifications describe many different configurations and profiles of Host devices. For example, a device built to the “baseline” specification provides access to premium (scrambled) content and call-ahead pay per view, while a device that includes OCAP provides for interactive services.<sup>3</sup> Just as consumer electronics manufacturers do in today’s retail market for television sets, VCRs, DVD players and the like, where they build a “family” of products with different features and functions at different price points, manufacturers may choose to build a number of different products in compliance with OpenCable specifications – e.g., set-top boxes, integrated television receivers – and may choose whether to include OCAP in such devices. But the certification process is the same for each, with compliance with the interfaces and Host requirements applicable to the type of product that is submitted.

9. The CableLabs certification process relies primarily upon self-testing by the manufacturer using Test Tools provided through PHILA. See PHILA Section 2.1. The manufacturer then submits an affidavit and provides sample devices, which are then subject to audit and limited testing.

---

<sup>2</sup> See Further Notice of Proposed Rulemaking and Declaratory Ruling, Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, 15 FCC Rcd. 18199, 18209-12 (¶¶ 25-32) (2000).

<sup>3</sup> Currently there are specifications for the Unidirectional Set-Top Box, the Unidirectional Terminal, the Bidirectional Set-Top Box, the Bidirectional Terminal, the Bidirectional Set-Top Box with OCAP, the Bidirectional Terminal with OCAP, the Bidirectional Advanced Set-Top Box, the Bidirectional Advanced Terminal, the Bidirectional High Definition Set-Top Box, and the Bidirectional Advanced High Definition Set-Top Box. OCAP is required only under six of these ten specifications.

10. Manufacturers are not obligated to build any device by signing PHILA. PHILA Section 2.1 grants a limited development right to build prototypes, distribute test tools to other Licensees, and to conduct field trials in North America, but there is no obligation to undertake any such activity. If the manufacturer provides CableLabs with an “activation notice,” it is granted the right of full manufacture and sale, but it is not required to do so. See PHILA Sections 2.3, 2.4, 3.2. A manufacturer may continue to build proprietary, non-OCAP, non-OpenCable navigation devices after signing PHILA. However, if a manufacturer wishes to build a Host device using the DFAST technology licensed under PHILA, then that manufacturer must follow the certification process. As noted in ¶8, devices may be built with and without OCAP.

11. CableLabs’ current certification procedures provide manufacturers with test tools (for in-house testing) and permit manufacturers to engage in “dry runs” at CableLabs, in order to facilitate their success in receiving certification in their chosen official certification wave. As noted in the currently posted PHILA, CableLabs is negotiating additional procedures for expediting the processing of certification for related products, such as a “family” of integrated DTVs, minor changes to previously certified products, and changes in faceplate by an Original Equipment Manufacturer.

**E. Is there any reason for a cable operator to require additional testing from an OpenCable certified piece of equipment before it authorizes the box to receive service?**

12. The specifications developed by OpenCable set forth how manufacturers can build OpenCable-compliant Host devices that will work with operator-supplied OpenCable POD security modules. Consistent with the cable industry’s commitment to the February 2000 agreements, to the OpenCable process, and to the OpenCable specifications for an integrated DTV set in particular, leading cable operators have made clear their commitment to support CableLabs-certified Host devices once such devices become commercially available. Operators may find the need to test for performance of new devices, in order to distinguish network performance problems from device performance limitations. Any device, OpenCable or not, that is connected to the MSO network must also be integrated with back-office software. The cable industry understands that a retail solution must support the prompt installation of different televisions from different manufacturers.

**II. COPY PROTECTION**

**A. Encoding Rules –**

**1. Should cable and satellite be operating under similar rules? Have manufacturers signed licensing agreements with satellite operators that contain copy protection standards that they oppose in the context of the PHILA?**

13. CableLabs designed its POD-Host interface specification, PHILA, and the rest of its OpenCable efforts, to enhance the cable customer experience – by delivering new forms of programming, high value programming such as newly-released motion pictures in early release windows, and new services yet to be developed in the digital world. At the specific request of the Motion Picture Association of America (“MPAA”) – representing owners of the type of high-value programming that our customers desire – PHILA includes a requirement that certain

encryption and copy protection tools be built into OpenCable-certified devices. Content providers told us that these provisions were required before they would provide such high-value content to cable operators. Therefore, we viewed such requirements as essential to obtaining the content our customers want, as well as to be fully competitive with DBS providers who have installed similar tools, and future distribution technologies, such as Internet “streaming,” which may have similar tools affording access to such programming.

14. PHILA requires a manufacturer to include in its products the capability of “down-resing” high-definition programming marked for this protection when provided over component analog outputs, which unlike digital interfaces, are not copy protected. “Down-resing” allows high-definition programming to flow to display devices (e.g., DTVs and Monitors) with greater than standard definition resolution, but without inviting widespread copying. According to press reports,<sup>4</sup> Echostar and DirecTV had already agreed to include within their set top boxes the capability of “down-resing” high-definition television programming provided over component analog outputs. Content providers had informed CableLabs that programming would not be made available to cable without this same capability. PHILA does not “down-res” programming by default, nor does it require that any particular program be *marked* to “down-res;” but it does require that the device be able to recognize such signals if that is required for cable carriage of a particular program. We find it ironic (at best) that CEA members manufacture the DBS set-tops with these capabilities, yet they object to the same tools being placed into OpenCable-certified Host set-tops.

**2. Could the affected industries live with the 5C encoding rules as a general policy? What about 5C encoding rules as a baseline that could be overridden for specific non-broadcast content with robust notice and customer express consent?**

15. The “5C” license covers use of the Digital Transmission Copy Protection (“DTCP”) encryption technology over a 1394 digital interface. The 5C license is negotiated between the Digital Transmission Licensing Administrator, LLC (“DTLA”) (the 5C licensing authority) and equipment manufacturers. Each content provider, as owner of the programming, controls the rights granted in its programming. A separate 5C “Content Participant” Agreement contains “encoding rules” that classify program material in certain ways so that, for example, current premium programs may not be classified as “copy never,” but video-on-demand programs may be so classified. To our knowledge, only two studios have signed the “Content Participant” Agreement, but MPAA has informed us that its other members agree with the encoding rules in principle, and according to DTLA, any content provider may use the DTCP technology so long as they abide by the encoding rules.

16. PHILA is structured differently from 5C but dovetails with 5C when OpenCable-certified host devices are connected with 1394/5C digital connectors to digital home recording devices. The PHILA license covers use of the DFAST encryption technology for passing digital programming over a POD-Host interface into a host device such as a set-top box. PHILA grants a DFAST technology license from CableLabs to equipment manufacturers. Many separate

---

<sup>4</sup> E.g., “HDTV Insider” Perfect Vision, November/December 2001, pp. 19-20, filed Nov. 29, 2001 in FCC PP Docket 00-67.

programming agreements, negotiated between individual content providers and individual cable operators, determine what copy control instructions will accompany the programming sent to cable subscribers. CableLabs does not have the authority to impose encoding rules on content and we did not include “encoding rules” in PHILA.

17. However, we understand that MPAA members will follow the 5C encoding rules for all of their content that will be output from a PHILA-licensed device into a home recording device through a 1394 interface, and that they will require, in each of the programming agreements they enter with cable operators, that the copy control instructions associated with digital programming for output over a 1394 interface be consistent with the 5C encoding rules. As a practical matter, therefore, through this “contractual chain,” the studio-cable operator agreements will reflect the studio-5C encoding rules agreements. In turn, PHILA provides a toolbox that will respond to the copy control information that may be associated with the programming content, pursuant to the terms of those programming agreements. Thus, as a practical matter, the 5C encoding rules will apply to content transmitted through a PHILA-licensed device over a 1394/5C connector.

18. With respect to consumer notice and consent, we understand that no consumer consent would override the “encoding rules” in the 5C license. We understand, for example, that even if consumers would be willing to watch a new motion picture as display only, at full ticket price on the first weekend of theatrical release, the 5C rules would treat that kind of delivery as patent infringement. The DTLA IP Statement of July 10, 2001 states that any programmer may output content through a 1394/5C port but may not mark it copy never without any pause or recording rights. A display only motion picture would presumably be treated as an infringement of DTLA’s patent and IP rights. <http://www.dtcp.com/data/IPStatement07102001.pdf>.

**B. Down resolution – Is there an alternative to down resolution to address the analog hole issue?**

19. Cable operators do not have any business incentive to impede their customers’ reception of high-definition or other programs and thereby reduce customers’ satisfaction and their own subscribership and revenue. Obviously, the better long-term solution would be for CE manufacturers to include digital connectors on all digital television sets, because digital connectors may utilize standard copy protection tools in order to assure program owners that high-value programming will not be subject to unconstrained copying or retransmitted onto the Internet. Chairman Powell’s DTV Transition Plan includes this as a necessary feature for the success of the digital transition, but CE manufacturers have yet to endorse it. In the interim, because DTV set manufacturers chose not to include digital inputs on their current generation digital television sets, installing the “down-res” capability was the only available means for assuring that high-value programming could be obtained and delivered to cable customers.

20. It is instructive to contrast the cable industry’s clear commitment to providing the interfaces and appropriate standard copy protection mechanisms needed to provide digital and high-definition services with the parallel effort of the consumer electronics industry to inhibit deployment of equipment with such protections to the wide variety of TV sets in the market. Cable was the first industry to support the 1394/5C interface to permit high quality transfer of programming. CE manufacturers opposed any kind of copy protection, and obtained an FCC ruling that allowed them to omit 1394 interfaces from so-called “cable ready” DTV sets.

Instead, CE manufacturers sought to flood the market with an installed base of TVs that lacked any tools to respect intellectual property rights. In the summer of 2001, cable took the next step, along with DBS providers and content providers, and endorsed the DVI/HDCP connector to permit consumers to enjoy display of uncompressed digital video.<sup>5</sup> Again, CE manufacturers continued to bring TV receivers without DVI interfaces and HDCP protection to market. Even now, while some manufacturers are bringing DTVs with 1394/5C connectors (but not DVI) to market, other CE manufacturers are selling DTVs with DVI connectors, but without the needed HDCP copy protection. This reflects a deliberate choice to deploy TV receivers without the tools needed to respect intellectual property. This may save some small cost, but it will not advance the availability of digital programming through accepted interfaces and accepted copy controls. Other CE vendors are continuing to introduce new DTVs *without* 1394 or DVI digital connectors, thereby creating more legacy problems for consumers and greater need for “down-resing.”

21. Because manufacturers chose not to include digital inputs, installing this “down-res” capability was the only available means for assuring that high-value programming could be delivered to cable customers. MPAA has informed us that the alternative to “down-resing” is turning off the analog output for HD programming marked for protection.

22. As was mentioned during the May 10 meeting, the selection of a watermark that is extensible to analog may be years away.

23. On May 22, 2002, CableLabs made an offer to resolve this technology/copy protection question. CableLabs offered to remove the “down-resing” requirement from PHILA if: (1) the capability to “down-res” is removed from DBS set-top box license agreements; (2) consumer electronics and computer manufacturers commit not to build devices for DBS or other types of distribution networks with the capability of “down-resing” high-definition programming provided over component analog outputs; and (3) program providers agree not to require the “down-resing” of any content delivered over any existing or future video distribution platform. Under such a regime, cable could compete on an equal footing with other distribution media for access to high value content that our customers desire. See, Letter of Dr. Richard Green to Chairman Billy Tauzin, May 22, 2002, attached as Exhibit 1.

**C. DVI Outputs - Is DVI spec something CE manufacturers can build-to, or does a decision need to be made between DVI and HDMI? If a choice needs to be made, how and when will it happen?**

24. The High Definition Multimedia Interface (“HDMI”) was announced in April 2002 by Hitachi, Panasonic, Philips, Silicon Image, Sony, Thomson, and Toshiba. HDMI is one of two proposals for an extension to the Digital Video Interface (“DVI”) 1.0 standard<sup>6</sup> that adds support for digital audio, as well as defining a smaller, more consumer-friendly connector. At this time the HDMI specification is not complete, and the working draft is only available under NDA with Silicon Image. Prototype silicon supporting HDMI is not expected until early 2003 and we believe that products supporting HDMI will not appear until late 2003 or early 2004.

<sup>5</sup> See : [http://www.cablelabs.com/news\\_room/PR/01\\_pr\\_dvi\\_hdtv\\_072501.html](http://www.cablelabs.com/news_room/PR/01_pr_dvi_hdtv_072501.html).

<sup>6</sup> Digital Display Working Group, “Digital Visual Interface,” Revision 1.0, April 2, 1999.

The HDMI group has announced their intention to follow a certification process for this connector.

25. Meanwhile, a number of consumer electronics companies will release products this year with the DVI 1.0 interface. DVI 1.0 is already compatible with the HDCP content protection system, and the CEA 861-B standard. We also understand that HDMI will be backward compatible with DVI 1.0 when it becomes available. CableLabs will therefore continue to specify DVI 1.0 in the OpenCable high definition specifications, but will consider migrating to a different standard if a different consensus standard develops in the future.

**D. Selectable Output Controls**

- 1. Should specific PHILA/OCAP limitations regarding selectable output controls be established such as only an interface that has been compromised may be disabled?**
- 2. Do cable operators or the studios have any interest in selectable output controls beyond a security breach?**

26. Certain specifications referred to in PHILA assure that advanced OpenCable-certified set-top boxes (“STBs”) accommodate nationally portable applications, and can be programmed with updateable software to ensure that they properly handle copy protection and other instructions. These OpenCable Applications Platform (“OCAP”) specifications require the capability of independently turning different STB outputs on or off. For example, it could turn off a 1394 interface (typically sending digital signals to home recording devices) and leave the DVI output still “on” to transmit content to a high-resolution display, or vice versa.

27. Selectable output control provides the capacity for an effective response if there were widespread breach of security in a particular output, in a case in which cable companies did not have confidence that routine certificate revocation would be readily scalable or timely. However, security is not the only legitimate use of this capability.

28. This capability allows cable to provide its customers with new and innovative programming and service options and to match the competitive offerings of other distribution networks, such as streaming content to the home on a display-only basis, in the earliest release windows. Creating specifications for cable devices that cannot accommodate similar distribution would place the cable industry at a significant competitive disadvantage.

29. MPAA explained in the FCC’s May 10, 2002 meeting that, while it was not insisting upon inclusion of selectable output control requirements in OpenCable specifications, it considered it reasonable for the cable industry to provide for this capability in order to position itself to compete on an equal footing with other distribution networks, such as the Internet.

30. Selectable output control enables the cable industry to accommodate future business models for distributing new kinds of programs and services. Selectable output control could enable delivery of a new service over a specialized port, such as a home network port. We do not know all of the business models that might develop in the digital world. We do know that competition for programming will be fierce, with several distribution networks vying to provide the best selections of programming and services to customers. It would be foolish for the cable

industry to adopt specifications for equipment that would have none of the flexibility or capability that DBS and the Internet enjoy. That would deny cable the tools to compete for the right to deliver new and innovative services to cable customers – defeating the very purpose of the OpenCable effort, and, we would assume, the FCC’s goals as well. As we have repeatedly stressed, the entire purpose of the OpenCable project, including PHILA, is to offer the tools under which the cable industry can bring *new product* (e.g., newly-released motion pictures) to consumers. These tools are intended for security; for the capability to bid for programming on an equal footing with competitors; and for the flexibility to offer new, innovative services.

31. It must be recalled that the reason that the debate over copy protection and selectable output controls has arisen is that there will be a myriad of cable set-top boxes and other “host” devices sold on the retail market which can access cable services but which will not be provided by the cable operator. While this will undeniably benefit cable customers and cable operators as Congress intended, it also raises the question of how to protect cable-provided content delivered over these devices and how to make sure these retail devices can deliver all of the programming and services cable customers expect from their cable operators. Without copy protection mechanisms in these retail devices, high-value content is likely to migrate to other providers like DBS or the Internet, who can assure content providers that their material will be copy protected or otherwise secured from unauthorized redistribution. DBS providers do not have this problem because, while their “navigation devices” are purportedly “commercially available,” they are not bound by the FCC Navigation Device Rules and in fact are permitted to dictate the specifications of their receivers to their selected manufacturers before those devices are made “available” at retail through their selected distributors. Those manufacturers and retailers are the same members of the Consumer Electronics Association and the Consumer Electronics Retailers Coalition who somehow find it essential that cable be put in a copy protection straight-jacket while they ignore the fact that the equipment built and sold for their DBS customers includes the very same requirements they decry when cable equipment is at issue. This inconsistency on the part of CEA and CERC members may be related to the fact that DBS providers pay subsidies to the retailers, while cable operators do not.

**3. How likely is it that the next generation set-top box will have two different digital outputs, a 1394 and a DVI?**

32. It is very likely. As detailed in NCTA’s letter supporting the Powell plan, leading set-top box manufacturers have advised Cable Operators that they anticipate being able to furnish HD set-top boxes with 1394/5C, DVI/HDCP or both connectors, in quantity, by the end of 2003.

**4. Are the OCAP specifications regarding selectable output control and down resolution similar to the licensing requirements for DBS boxes?**

33. To our knowledge, yes. We have been informed that when the DBS industry sought to obtain digital programming from content providers, they were required to include within their set top boxes the ability to switch between the two available outputs at the time: component analog and 1394. The comparable “on and off” capability in OCAP provides the same tool for the current outputs (e.g. 1394/5C, DVI/HDCP) of OpenCable-certified advanced digital set-top boxes.

### III. OCAP (“OPENCABLE APPLICATIONS PLATFORM” OR MIDDLEWARE)

#### A. **Status of development - Is OCAP close to completion? What is the timetable for completion? What is the timetable for operator implementation? Will OCAP support be “turnkey” or will it be phased in through operator support of specific modules?**

34. OCAP 1.0 was completed ahead of schedule, on December 21, 2001. OCAP is based almost entirely on the European DVB-MHP specification, which is a very mature and stable specification. Sony, Panasonic, Philips, and other major consumer electronics manufacturers contributed to the MHP specification and have already built televisions and set-top boxes that incorporate MHP. As a technical matter, OCAP is so closely related to MHP that it is a minor issue to add the few additional pieces required by OCAP.

35. Cable company purchases and deployment of leased boxes with OCAP will depend on business issues, such as hardware vendor capabilities and delivery schedules. Major supplier Motorola announced at the NCTA 2002 convention that it is working with middleware vendor Liberate Technologies on its migration to an OCAP-enabled box.

36. Cable companies have committed to take all reasonable steps, including the necessary modifications to their headends, so systems will support CableLabs-certified, OCAP-enabled devices once such equipment becomes commercially available. This commitment includes CableLabs-certified set-top boxes, integrated digital TV receivers and other OCAP-enabled devices. When OCAP 1.0 was completed and published on the OpenCable website, a letter from leading multiple system operators was sent to Dr. Richard Green, Chief Executive Officer of CableLabs, describing their intention to support CableLabs-certified, OCAP-enabled devices in their systems once such equipment become commercially available. See, Attachment to Letter from William A. Check, Vice President, Science and Technology, NCTA to Magalie Roman Salas, Secretary, FCC, PP Docket No. 00-67, December 26, 2001. CableLabs and its member companies have scheduled meetings with headend vendors to develop the required changes.

#### B. **Have applications developers (i.e. software vendors) expressed a willingness to design products that will run on OCAP? Would any developer take issue with converting their program into the OCAP format? Have any started the task of porting their applications to OCAP? Do any operators require that applications be written to OCAP?**

37. Application developers, middleware vendors and especially content owners (such as movie studios and cable programming networks) all have expressed a willingness to design products to OCAP. Their main concern is to see a standard software platform deployed, and OCAP appears to be the one that will be available soonest with the broadest adoption, including Europe and North America. Among the software vendors that have recently committed to actively working on OCAP are Canal+, Liberate, Philips Softworks, and Alticast; hardware vendors with an active interest include Motorola, Pace, Panasonic, Samsung and Scientific Atlanta. When OCAP 1.0 was published, Paul Liao, CTO of Matsushita Electronic Corp. of America said: “Panasonic congratulates CableLabs on their release of the OCAP 1.0 specification. As the specification develops, we look forward to the widespread and early adoption of OCAP by U.S. cable operators. By building on MHP, the OCAP specification is a good step toward a consistent, open, and more global, platform, which should permit the

development of an expanding world of advanced interactive cable services.” CableLabs Press Release, CableLabs Publishes OCAP Middleware Specifications, Jan. 3, 2002, [http://www.cablelabs.com/news\\_room/PR/02\\_pr\\_OCAP\\_010302.html](http://www.cablelabs.com/news_room/PR/02_pr_OCAP_010302.html). In February, 2002, representatives from nearly 90 companies – including Panasonic, Philips, Samsung, Sharp, Sony and others – participated in the OpenCable developers’ Conference. More than 165 attendees represented a range of companies from start-ups to large international corporations, many of which sent multiple members to the conference to represent their various business units. The event was sponsored and coordinated by CableLabs in conjunction with 20 vendors actively developing products or services that support the OpenCable platform. Thirteen companies made presentations on topics covering reference OCAP/MHP implementations, application developer toolkits, content authoring tools, application servers and data carousels for interactive television (iTV), software test and diagnostic tools, application management and delivery mechanisms, emerging Java technologies for iTV, and developer support programs.

38. Following the February, 2002 developer conference, CableLabs opened its facilities to 14 active MHP implementers who successfully demonstrated the interoperability of several different iTV applications simultaneously running on various manufacturers’ hardware platforms. This particular demonstration used MHP, on which OCAP is largely based. The success of this interoperability demonstrates the feasibility and near-term reality of running various iTV applications on a number of different platforms, without undergoing the costly and time-consuming process of “porting” each application to each manufacturer’s hardware and operating system. This “application portability” is made possible by the software interface described in the OCAP specification.

39. As discussed at the May 10, 2002, meeting, Panasonic demonstrated an OCAP Prototype Platform to the CableLabs Board on May 1, 2002. See Exhibit 2.

40. In a major development, TV Guide has already been ported to Java on the Liberate Compact platform, running on a Motorola DCT 2000 as shown at the recent NCTA convention. Liberate also has announced work on porting to Java its Video-on-demand application. Several European application developers who already have applications running on MHP came to a CableLabs interoperability event in February of this year to demonstrate their intention to migrate those applications to OCAP. These included Alticast, DigiSoft.tv, Philips Softworks, SNAP2, Sofia Digital, and S&T Technologies.

41. Our understanding is that several MSOs have notified their vendors of the requirement to migrate applications to OCAP. The TV Guide work is an example.

**C. CERC complains that OCAP contains a “monitor” application that restricts or disallows functions or features resident in the device – Given that the Commission’s rules prohibit MVPDs from precluding the addition of features or functions in the boxes (76.1204(c)) why is this requirement in the specification?**

42. The OCAP APIs that permit a monitor application do not preclude the addition of features or functions in a host device. Rather, OCAP APIs that permit a monitor application are designed to allow applications to co-exist without jeopardizing the reliability of the Host device (i.e., causing the device to “crash”).

43. CableLabs developed OCAP by modifying MHP in order to create greater flexibility for application developers. MHP only allows one application to run at a time. OCAP allows several applications to run simultaneously. As a result, there is a need to manage system resources. This is equivalent to a PC informing the user that there are not enough resources to run the next application, and the user needs to turn something off. Having these capabilities in a monitor application actually allows more functionality in the box to be used at a given time.

**D. IPPV –[This] area has been covered in previous hoedowns, but CERCs latest ex parte maintains that it cannot be done under the existing specification – Is OCAP implementation required for IPPV?**

44. OCAP implementation is not required for IPPV, but it is the most efficient and practical way to implement IPPV functionality on a nationwide scale. As Panasonic and others have conceded in FCC filings, OCAP is not required for IPPV services.<sup>7</sup> Manufacturers may add proprietary IPPV applications to their devices under the existing specification, but these are not portable applications and require specific proprietary support such as through a telephone return (such as DBS uses) or other return path (e.g., RF). The PHILA specifically allows additional features and functionalities to be added to an OpenCable-certified device. However, with the implementation of OCAP on a device, IPPV can be provided in a manner that is portable.

45. OCAP is designed to provide customers with the ability to get new applications to run on their set-tops or televisions no matter which manufacturer's device they purchased. Proprietary implementations of IPPV or other services will defeat the goals of portability and innovation. For this reason, CableLabs does not certify IPPV applications built in OpenCable host devices until those devices include OCAP – but that does not preclude the inclusion of IPPV functionality in such devices.

---

<sup>7</sup> See Matsushita Electronics Corporation of America Ex Parte Presentation, CS Docket No. 97-80, filed April 20, 2001.

Respectfully submitted,

Richard R. Green, Ph.D.  
President and Chief Executive Officer  
Cable Television Laboratories, Inc.  
400 Centennial Parkway  
Louisville, CO 80027-1266  
303-661-9100

William A. Check, Ph.D.  
Vice President, Science and Technology  
National Cable & Telecommunications Association  
1724 Massachusetts Avenue, N.W.  
Washington, DC 20036-1969  
202-775-3637

Cc: Ms. Marlene H. Dortch, Secretary, FCC (for inclusion in CS Docket No. 97-80 and PP Docket No. 00-67)

#### Attachments

1. Letter of Dr. Richard Green to Chairman Billy Tauzin, May 22, 2002.
2. Panasonic demonstration of OCAP Prototype Platform, May 1, 2002.