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Federal Communications Commission
Washington, D.C. 20554

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OFFICE OF THE SECRETARY

In the Matter of)
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Compatibility Between Cable)
Systems And Consumer)
Electronics Equipment)
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PP Docket No. 00-67

To: The Commission

Comments of Circuit City Stores, Inc.

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Table of Contents

I.	This Proceeding Raises Basic Issues As To Competitiveness And Consumer Choice.	2
A.	<i>The Cable Industry is Far Behind in Fulfilling Promises Made to the FCC in Response to the Congressional Mandate for Competition.</i>	2
B.	<i>Pursuit of Strategic Goals By Entrenched Cable and Motion Picture Interests in Licensing Contexts Threatens to Nullify the Procompetitive Potential of Congressional and FCC Initiatives.</i>	4
C.	<i>The July 1 Date for Full MSO Support of Competitive OpenCable Devices Requires Emergency, Interim Action by the FCC.....</i>	4
II.	Making The 1394 Interface Mandatory or Essential Or Giving It Favored Status Would Harm Competition And Consumers Dramatically.....	5
A.	<i>The IEEE 1394 Interface has Several Important Potential Uses in Facilitating a Home Network, But the One Function for Which it Should Not be Necessary is to Connect an Integrated Navigation/Display Device to an MSO System.....</i>	6
B.	<i>Mandating or Favoring the 1394 Interface Could Serve Only One Purpose: Moving Features and Functions Back Into System-Specific, MSO-Provided Devices.</i>	6
C.	<i>If Favored Status for MSO-Provided Devices Were to be Preserved Through Specification or Labeling As to the 1394 Interface, the Requirement for All Navigation Devices to Rely on Pods by 2005 Still Would Not Produce a Level Playing Field.</i>	7
D.	<i>Favoritism of MSO-Provided Devices Would have Consequences Beyond the "Set-Top" Receiver Functionality.</i>	8
E.	<i>The 1394 Interface is Not Being Employed in MSO-Provided Devices.</i>	8
III.	The Critical Consumer Interface Issue Is Interactivity, As To Which The Cable Industry Is Not In Compliance With FCC Regulations.....	9
A.	<i>CableLabs is at Least One Year Behind in Supporting Navigation Devices Capable of Competing With Interactivity Offered in MSO-provided Devices.</i>	9
B.	<i>The Commission Needs to Take Steps to Preserve Competition.</i>	10
IV.	The FCC Needs To Oversee A Balanced, Inter-Industry Approach to Copy Protection Issues.....	10
A.	<i>More than Recording Rights are at Stake – Consumer Viewing is Threatened By an Overly Restrictive Regime.....</i>	11

B.	<i>Consumers are Entitled to the Same Rights With Respect to Digital Products that they Enjoy as to Analog Products.....</i>	<i>13</i>
C.	<i>A Balanced Result as to Copy Protection Means Crossing Several Product, Interface, and Industry Lines.....</i>	<i>14</i>
D.	<i>Policy or License Decisions Approved in this Proceeding Will Affect Other Media and Device Industries.</i>	<i>15</i>
V.	Copy Protection And Competitive Issues Cannot Be Solved Adequately Or Fairly Through The DFAST License.	15
A.	<i>FCC Regulations Clearly and Specifically Limit OpenCable Licensing Restrictions to Issues of Conditional Access Rather than Copy Protection.</i>	<i>16</i>
B.	<i>The FCC Should Not Revise Its Regulations So as to Allow Copy Protection Issues to Be Resolved Through the DFAST License.....</i>	<i>18</i>
1.	MSO-provided Navigation Devices that do not support PODs do not encounter DFAST technology, hence cannot be bound by the DFAST license.	19
2.	Imposition of restraints through the DFAST license would thus further burden competitive devices in unequal competition with MSO-provided devices. Imposition of any such restraints should at best not be allowed until 2002, and only if full compliance of MSO-provided Navigation Devices with all OpenCable specifications is ordered by that date as well.	19
3.	As no single license can be expected to cover all potential Navigation Devices, the FCC should recognize copy protection issues as raising inter-industry policy questions as to consumer choice and welfare.....	20
a.	<i>The FCC should convene a working group to address these issues on an expedited basis.....</i>	<i>21</i>
b.	<i>The July 1 date for MSO full compliance with all obligations related to OpenCable requires that, to comply with existing regulations, CableLabs should provide a restriction-free interim DFAST license immediately.....</i>	<i>21</i>
VI.	Conclusion.....	22

Summary

Unless the issues raised by the Commission in this NPRM are resolved in a pro-competitive manner, the effects of Cable industry noncompliance with OpenCable obligations to the Commission will be aggravated severely. Cable industry obligations include:

- Making specifications available to prospective manufacturers of CE and IT devices, to enable them to design, make and distribute competitive Navigation Devices nationally, for sale to consumers by July 1, 2000;
- Supporting the operation of such competitive CE and IT devices on cable systems in a manner fully competitive with the devices provided to customers by MSOs; and
- Supplying "Point Of Deployment" ("POD") security modules to consumers who obtain such CE and IT devices, to enable them to operate on any local system.

But Specifications for "unidirectional" (non-interactive) Navigation Devices have been late and incomplete. Specifications for "bidirectional" (interactive) Navigation Devices, already offered by MSOs, will be at least one year behind schedule. The Cable industry has ignored obligations as to "hybrid" devices. The Commission needs to resolve the issues raised in this NPRM in a pro-competitive fashion to avoid further damage to consumers and competition.

Favoring The 1394 Interface Through Labeling Would Put All Competitive OpenCable Devices, Including Those That Feature This Interface, At A Competitive Disadvantage.

The IEEE 1394 interface connects separate consumer devices that perform different functions in a digital home network. This interface is not necessary to achieve feature integration within devices. A DTV receiver with integrated Navigation Device functionality needs only the POD interface to function on the cable network. So, the presence or absence of the 1394 interface in a functionally integrated receiver should be irrelevant to consumers with respect to receiving cable services. Suggesting to consumers that they are at a disadvantage if their set lacks the 1394 interface can make sense only if the industry intends to use the 1394 interface as a "trap" door to allow it to maintain second-class status for competitive devices, even after MSO-provided products must support the POD interface.

The most serious threat to competition and consumer choice springs not from whether the 1394 interface is offered, but rather from the fact that cable system interactivity, already offered in MSO-provided devices, will not be supported in CE and IT devices over any interface for at least another year. Early in the OpenCable project, the cable systems that control CableLabs chose a technical path for devices they would provide themselves that is crucially

different from their prescription for competitive devices. Thus, the devices being offered by cable MSOs to consumers will be able to offer what consumers really want – one-button control over interactive advanced services, such as receiving pay-per-view (PPV) and video-on-demand (VOD) programming. For at least another year, OpenCable devices will not.

Circuit City has continually urged the Commission to move up the 2005 date by which MSO-provided boxes would have to employ the same specifications as competitive CE and IT boxes. The discrimination against OpenCable devices to date makes it doubly important that the Commission brook no further impositions on such devices through requirements as to the 1394 interface, or through constraints via the DFAST license – especially when such impositions are not placed on MSO-provided devices.

The DFAST License Should Not Be Used To Oppress Consumers Or Make OpenCable Devices Even Less Competitive.

CE and IT manufacturers need a license from CableLabs in order to enter the market under Congress's mandate and the Commission's regulations. To the extent motion picture studios succeed in insisting on inclusion of provisions in the CableLabs "DFAST" license that would require competitive CE and IT devices to degrade viewing or prevent reasonable copying, they would be using the law and the Commission to force acquiescence in objectives to which competitive manufacturers otherwise would not agree.

While there has been progress in producing digital display devices, most of the HDTV, DTV, and DTV-ready display devices offered by retailers use the same "analog" techniques as do conventional NTSC receivers (i.e., employing a "tube" in which the scanning of an electron beam is controlled, or a solid-state technology for activating phosphors). Hence, conversion from digital to analog format must take place prior to display. In some DTV receivers, this conversion is performed in the same box as the display device. In the vast majority of receivers sold by Circuit City and other retailers, however, the display device contains no facility for this conversion. It is performed at the output stage of a separate box, which is either provided with the display or can be added later. Like the sales model, the interface for DTV set-tops and displays is derived from the computer practice.

In letters and public statements, representatives of the Motion Picture Association of America have sought to reserve the right not to convert to analog (other than the NTSC output) transmissions as to which they have copy protection concerns. In the case of most DTV receivers on the market today, this would mean not providing the DTV display for which the

customer has paid. The Commission should make crystal clear, in this proceeding, that such an anti-consumer, anti-competitive result would be flatly unacceptable.

Today, cable customers are not constrained from recording at home. Copy protection technologies have been developed, with the cooperation of the CE and IT industries, to facilitate a balanced regime that recognizes both consumer and proprietor rights. But no overall architecture for such a regime has yet emerged. In the absence of any balanced solution, CableLabs has put forward draft versions of the DFAST license that would resolve such issues unilaterally and drastically against consumer interests. No balance or consumer right or safe harbor, acknowledging present practices, is provided for.

The Commission should not allow such impositions on consumers. Nor should it assume that the cable industry can or will protect consumers in order to compete with DBS distribution. If the motion picture industry's requirements are incorporated into "compliance rules" approved in this proceeding as license constraints, the motion picture industry will without question be able, by threatening to withhold product, to insist contractually on similar consumer, product and interface restrictions with respect to DBS.

The Navigation Device Report & Order follows the *Carterfone* 'right to attach' principle in declaring that devices that do not adversely affect the network may be attached to the network. The CableLabs "DFAST" license provisions with respect to downstream interfaces and copy control run directly counter to this principle, and are specifically precluded by FCC regulations. Section 76.1204(c) states:

No multichannel video programming distributor shall by contract, agreement, patent, intellectual property right or otherwise preclude the addition of features or functions to the equipment made available pursuant to this section that are not designed, intended or function to defeat the conditional access controls of such devices or to provide unauthorized access to service.

Any failure to certify a CE or IT device, or to withdraw use of a POD from it, on a basis other than facilitating unauthorized service or defeating conditional access, would even more clearly violate Section 76.1202:

No multichannel video programming distributor shall by contract, agreement, patent right, intellectual property right or otherwise prevent navigation devices that do not perform conditional access or security functions from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with such owner or operator, subject to Section 76.1209 [theft of service].

Section 76.1203 clearly limits contractual constraints, even when they are addressed to instances of harm to the network or security:

Such restrictions may be accomplished by publishing and providing to subscribers standards and descriptions of devices that may not be used with or attached to its system. Such standards shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service. In any situation where theft of service or harm occurs or is likely to occur, service may be discontinued.

By definition, CE and IT host devices are not allowed under FCC regulations to perform conditional access or security functions. Thus, if copy protection functions performed by OpenCable host devices were to be classified as "conditional access" or "security," the OpenCable specification itself would be contrary to Commission regulations.

If the Commission does decide to change its regulations, the DFAST license would not be an appropriate vehicle for application of broad copyright policy. Until 2005, MSOs can manufacture and deploy Navigation Devices that do not contain the POD interface, hence do not encounter DFAST technology. Any action taken by the Commission to embrace copy control, as well as conditional access, should govern all Navigation Devices, not just those that are competitive with the entrenched providers.

All problems to date spring from the Cable Industry having been able to follow one set of specifications for MSO-provided devices, and another for devices to be offered by competitive entrants. Imposing, through the DFAST license, further restraints on CE and IT devices, but not on MSO-provided devices, could be the last straw in breaking the back of their competitiveness. If the Commission sees no alternative, the only reasonably reliable way to avoid such discrimination would be to delay the imposition of any such constraints until January 1, 2002, and move up the date for full compliance with OpenCable specifications by MSO-provided boxes also to January 1, 2002.

In view of what must be done, and the disadvantages competitive CE and IT devices face simply in order to get to market, there is no way that pending issues can be worked out, inside or outside the DFAST license, by July 1. To contain the scope of its violation of Commission orders, CableLabs needs immediately to extend its "evaluation" license to allow manufacture, sales, and marketing, and to provide full support of such products, not only by distributing PODs, but also through system functionality.

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Comments of Circuit City Stores, Inc.

Circuit City Stores, Inc. ("Circuit City") respectfully submits these comments in response to the April 14, 2000 Notice of Proposed Rule Making ("NPRM") issued by the Federal Communications Commission ("FCC" or "Commission") in the above-captioned proceeding.¹ Circuit City, a national retailer of consumer electronics and information technology products, has taken a leading role in urging both the Congress and the Commission to bring the benefits of competition to consumers in the vast and emerging market for devices capable of operating on digital cable systems. The prospective benefits, to consumers, of the actions taken thus far are vast. However, several crisis points – including some cited directly by the Commission in this NPRM – must be passed before this effort can be considered even marginally successful.

While the interface and copyright issues identified specifically by the Commission in its NPRM are very important, the most crucial pending issue is *competition*. Will Congress's efforts, as implemented by the Commission, result in the empowering of competitive consumer electronics, information technology, and "convergence" devices to provide services to consumers over cable systems? Or – despite passage of a law² and completion of the

¹ *In the Matter of Compatibility Between Cable Systems and Consumer Electronics Equipment*, PP Docket No. 00-67, *Notice of Proposed Rulemaking* (Rel. Apr. 14, 2000)(the "Compatibility NPRM").

² Section 304 of the 1996 Telecommunications Act, Pub. L. No. 104-1-4, 110 Stat. 56 (1996) (codified at 47 U.S.C. § 549).

rulemaking stage of a Commission proceeding³ – will industrial forces, in the program creation and distribution industries, for their own strategic reasons, manage to leave the old monopoly structure essentially in place? The jury is still out. The Commission's decision to recognize the pending problems, and issue this NPRM, is an important step toward achieving a positive verdict on competition.

I. This Proceeding Raises Basic Issues As To Competitiveness And Consumer Choice.

The CableLabs "OpenCable" project, the crucible in which the issues posed by the Commission arise, is but a means to an end directed by the Congress, and ordered in Commission regulations: consumer choice of competitive devices. Unfortunately, the Cable industry's compliance with pending FCC obligations to support Consumer Electronics ("CE") and Information Technology ("IT") devices that compete with their own offerings is dangerously inadequate. Circuit City believes that *unless the issues raised by the Commission in this NPRM are resolved in a pro-competitive manner, the effects of industry noncompliance will be aggravated severely, perhaps beyond repair.*

A. The Cable Industry is Far Behind in Fulfilling Promises Made to the FCC in Response to the Congressional Mandate for Competition.

In the Report & Order adopted June 11, 1998 and released on June 24, 1998, the Commission accepted the Cable industry's promise to implement a voluntary program of support for competitive Navigation Devices. In exchange for this promise, and the industry's acceptance of a set of deadlines for specific accomplishments, the Commission refrained from imposing its own standards, regulating more finely, or turning the task over to a multi-industry group, as some had proposed.⁴

³ *In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, CS Docket No. 97-80, *Report & Order*, 13 FCC Rcd 14775 (Rel. June 24, 1998) (*Navigation Device R&O*); *Order on Reconsideration*, 14 FCC Rcd 7596 (Rel. May 14, 1999) (*Navigation Device Reconsideration Order*).

⁴ *See, e.g.*, CEMA Navigation Device Petition for Reconsideration at 11. Circuit City opposed requiring the Cable industry to share responsibility for compliance with other industries, as it would then not be possible to identify those on whom sanctions for any non-compliance should be imposed. *See, e.g.*, Circuit City Opposition to Petitions for Reconsideration at 20 (discussing why C3AG should not be allowed to take over the Navigation Device standard-setting function); *Navigation Device Reconsideration Order* ¶ 40.

As refined on reconsideration, the Commission regulations require that Cable MSOs provide full support for competitive CE and IT Navigation Devices by July 1, 2000. Elements of such support include:

- Making specifications available to prospective manufacturers of CE and IT devices, to enable them to design, make and distribute competitive Navigation Devices nationally, for sale to consumers by July 1, 2000;
- Supporting the operation of such competitive CE and IT devices on cable systems in a manner fully competitive with the devices provided to customers by MSOs; and
- Supplying "Point Of Deployment" ("POD") security modules to consumers who obtain such CE and IT devices, to enable them to operate on any local system.

It is already too late for the Cable industry to comply with obligations (1) and (2):

- Specifications for "unidirectional" (non-interactive) Navigation Devices have been late and incomplete. Though specifications are available now, it seems doubtful that meaningful numbers of conforming products could possibly be offered by July 1.
- On July 1, 2000, specifications for "bidirectional" (interactive) Navigation Devices, competitive with the best devices now being distributed by MSOs, will be at least *one year behind schedule*. This means that, on the date set for full compliance, competitive interactive CE and IT products will still be at least *one year away* from reaching consumers.
- The Cable Industry has taken *no meaningful steps* to fulfill its obligation to support operation of competitive digital Navigation Devices on systems in which some programs can be obtained only through analog descrambling.⁵ This, despite the Commission's rollback, at the request of Circuit City and other parties, of the Commission's initial order to support competitive Navigation Devices for all analog services.⁶

⁵ Without such a facility, a competitive Navigation Device cannot offer full service to consumers – to receive those programs that are offered only with analog scrambling, the owner of such a Navigation device would *still need an MSO-provided set-top box*. Circuit City pointed out the sham nature of the Cable industry's nominal gesture toward compliance in this respect in an *ex parte* comment filed with the Commission on July 30, 1999. *Ex Parte* Letter from Robert S. Schwartz to Magalie R. Salas, CS Docket No. 97-80 (filed July 30, 1999).

⁶ Circuit City proposed this rollback, and persuaded other private sector interests to support it, specifically in response to Cable Industry protestations that it could not meet all obligations if it had to address purely analog products. Neither NCTA nor CableLabs opposed Circuit City's compromise initiative. But having been let off the hook as to the major obligation, the industry has taken no action to meet the more limited requirement.

It is in this context of systemic and severe noncompliance with the Commission's regulations that Circuit City addresses the particular issues raised in this NPRM. The Commission needs to resolve these issues in a pro-competitive fashion to avoid aggravating, perhaps fatally, the damage to competition that already has been done.

B. Pursuit of Strategic Goals By Entrenched Cable and Motion Picture Interests in Licensing Contexts Threatens to Nullify the Procompetitive Potential of Congressional and FCC Initiatives.

Enforcing the business plans of motion picture studios and cable MSOs, and providing leverage in license negotiations, were never identified as goals when Congress enacted Section 304, and the Commission moved to enforce it. Yet the "1394 labeling" issue and the "copy protection" issue addressed by the Commission arise from such strategic efforts to take advantage of the Commission's regulatory authority, for ends that are not beneficial to consumers:

- To the extent cable MSOs succeed in mandating use of the "1394" interface, or in stigmatizing products that lack it, they would make the Commission complicit in plans to undermine reliance on features and functions included in competitive Navigation Devices, and to move these back to system-specific, MSO-provided boxes.⁷
- CE and IT manufacturers need a license from CableLabs in order to enter the market under Congress' mandate and the Commission's regulations. To the extent motion picture studios succeed in insisting on inclusion of provisions in the CableLabs "DFAST" license that would require competitive CE and IT devices to degrade viewing or prevent reasonable copying, they would be using the law and the Commission to force acquiescence in objectives to which competitive manufacturers otherwise would not agree.⁸

C. The July 1 Date for Full MSO Support of Competitive OpenCable Devices Requires Emergency, Interim Action by the FCC.

Because the OpenCable specifications themselves have been behind schedule, it may already be too late for any IT or CE manufacturer to offer consumers any competitive product by July 1. To the extent that these manufacturers try to get to market, however, they must be licensed by CableLabs under intellectual property governing the POD interface. However, CableLabs has offered only versions of the "DFAST" license that are *in violation of*

⁷ This issue is discussed more fully in Section II.B.

⁸ This issue is discussed more fully in Sections III. and IV.

*existing FCC regulations.*⁹ If CE and IT manufacturers must wait any longer for a lawful license, they will not even be able to manufacture the products that can now be supported by the OpenCable specifications. The Commission should use its explicitly reserved oversight authority¹⁰ over the OpenCable process to insist that *an interim license*, shorn of constraints that are contrary to current FCC regulations, be issued while the FCC considers, in this proceeding, whether those regulations need to be amended so as to permit constraints that present regulations do not allow.

II. Making The 1394 Interface Mandatory or Essential Or Giving It Favored Status Would Harm Competition And Consumers Dramatically.

Of the commercial enterprises that have participated in the Commission's Compatibility and Navigation Device dockets, and in the legislative debate leading up to enactment of Section 304, Circuit City stands closest to the shoes of the consumer. It has no vested interest as to which particular technological approaches may triumph over others. Circuit City does need to assure, however, that the products it offers will meet consumers' needs.

Given the millions of MSO-provided digital Navigation Devices now being rolled out to consumers, and on order, and the hundreds of thousands of DTV receivers now being distributed, all without the 1394 interface, Circuit City believes that this interface – though of great potential value in a number of home contexts – cannot and will not be a necessary element for obtaining *cable or satellite* services. Its use may, for a host of market reasons, become highly desirable to many consumers. Making its use mandatory or essential, or attacking its absence through labeling, would serve only strategic industry, not consumer, interests. It would do this by preserving the primacy of MSO-supplied Navigation Devices, configured for local systems, over fully functional CE and IT devices that should have no need for a *box-to-box interface*.

⁹ Circuit City raised this issue publicly in an *ex parte* filing on February 2. *Ex Parte* Letter from Robert S. Schwartz to Magalie R. Salas, CS Docket No. 97-80 (filed Feb. 2, 2000). Since then, successive license drafts have been offered which address some objections, but still do not comply with Commission regulations. See Section IVA.

¹⁰ *Navigation Device R&O* ¶ 125; *Navigation Device Reconsideration Order* ¶ 41.

A. *The IEEE 1394 Interface has Several Important Potential Uses in Facilitating a Home Network, But the One Function for Which it Should Not be Necessary is to Connect an Integrated Navigation/Display Device to an MSO System.*

Circuit City recognizes the potential important uses, and consumer appeal, of the IEEE 1394 interface in connecting separate consumer devices that perform different functions in a digital home network. As a bidirectional interface carrying compressed data, it should be useful for connecting "source" devices, such as Navigation Devices, to "sink" devices, such as non-integrated displays and VCRs, helping separate boxes perform *as if they were integrated*. The 1394 interface is *not* necessary, however, to achieve feature integration *within devices*. For example, a DTV receiver with integrated Navigation Device functionality needs only the POD interface to function on the cable network. As Navigation features can be integrated at the silicon or software application level, such a device has no need of the 1394 interface to provide cable services. If a manufacturer does wish to add 1394 interface capability, it would be to offer a link to *other devices*.

In every public or official description of the OpenCable specification, CableLabs has purported to recognize that the POD interface is meant to enable a broad range of CE and IT products to function as Navigation Devices – not just set-top boxes. So, the presence or absence of the 1394 interface in a functionally integrated receiver should be irrelevant to consumers *with respect to receiving cable services*.

B. *Mandating or Favoring the 1394 Interface Could Serve Only One Purpose: Moving Features and Functions Back Into System-Specific, MSO-Provided Devices.*

Ever since Circuit City began advocating competitive availability of the Navigation function in CE and IT devices, we have emphasized one key question: When POD-enabled IT and CE products are finally available, can the consumer expect them to function on cable systems as well as the external devices offered by MSOs? The emphasis on 1394 functionality as indicating "Cable Ready" seems an industry to attempt to maintain the answer "NO." The vision of a "level playing field" keeps receding in the distance.

The tactic is familiar. When the CPE market was opened to competition, the Bell System – until stopped by the Commission – required that non-Bell telephones be

connected to the network by an "adapter" that served no purpose in providing telephone service or in protecting the system.¹¹ Similarly, trying to convince consumers that they are at a disadvantage if their set lacks the 1394 interface can make sense only if the industry intends to use the 1394 interface as a "trap" door to allow it to maintain second-class status for competitive devices.

In comments to the Congress while Section 304 was under consideration, Circuit City did not oppose reserving to MSOs the right also to distribute Navigation Devices. (By contrast, the Bell Companies had to accept constraints on their CPE distribution business to fully enable competitive entry.) Clearly, however, the Congress did not intend for this reserved right to compete to be used to disable the competition from new entrants. But forcing CE and IT devices to rely on the 1394 interface makes sense, with respect to receiving cable service, only if the industry is thereby reserving the right and the ability to offer system-specific features and functions only through MSO-provided Navigation Devices. Ironically, in such case, the import of the consumer's decision to purchase a "cable ready" or "interactive" receiver would be that the consumer would soon need to obtain a set-top box. That this is more than a possibility is borne out by a recent CableLabs publication showing that a consumer with an OpenCable-compliant digital television would still need an enhanced set-top box in order to receive "enhanced" MSO services.¹² Circuit City believes that consumers would not react positively to such a circumstance.

C. If Favored Status for MSO-Provided Devices Were to be Preserved Through Specification or Labeling As to the 1394 Interface, the Requirement for All Navigation Devices to Rely on Pods by 2005 Still Would Not Produce a Level Playing Field.

While Circuit City would have preferred that the Commission set a date earlier than 2005 for MSO-provided devices to rely on the POD interface that the Cable industry has designed for its competitors, this date offers at least some assurance that, eventually, this

¹¹ See, e.g., *In the Matter of Revision of Part 68 of the Commission's Rules to Specify Standard Plugs and Jacks for the Connection of Telephone Equipment to the Nationwide Telephone Network*, Docket No. 20774, *Report & Order*, 62 FCC.2d 735 (1976).

¹² *OpenCable Set-top Box Architecture for Multimedia Delivery – Part II*, SPECS News & Technology From Cable Labs, Vol. 12, No. 2, Feb./Mar. 2000, at 11 and Fig. 5. An excerpt from the relevant portion of this article is attached to these comments as Appendix A.

particular interface will be adequately supported, because MSO-provided devices will have to rely on it too. However, this accomplishment will not assure competition if *other* parts of the OpenCable specifications remain inferior to those available in MSO-provided devices. Cable industry efforts to mandate or favor the 1394 interface seem to signify a means, rationale, and intention to maintain the second-class status of OpenCable devices, even *after* MSO-provided products must support the POD interface.

D. Favoritism of MSO-Provided Devices Would have Consequences Beyond the "Set-Top" Receiver Functionality.

Ironically, the same industry that insists on the importance of box-to-box capabilities in competitive CE and IT Navigation Devices has discovered the benefits of integrating CE and IT functionality into the products that it distributes to consumers. MSO-provided Navigation Devices are beginning to feature integrated CE and IT functions such as Personal Video Recording (PVR).¹³ This validates Circuit City's longstanding concern that, *unless the competitive playing field is truly level*, the only entities that will be able to offer local cable services, plus the suite of integrated features that consumers want, will be the non-competitive cable MSOs. In such case the congressional and FCC initiatives will have accomplished very little to bring competitive choices to consumers.

E. The 1394 Interface is Not Being Employed in MSO-Provided Devices.

The Cable industry has a long history of resisting application to its own products of any requirements imposed on CE products in order to be considered "Cable Ready." It is now taking the position that inclusion of the 1394 interface is an important factor for buyers of competitive Navigation Devices, while it deploys millions of set-tops that lack this interface. The Commission should not, again, go down the sorry "cable ready" path – at least with respect to the 1394 interface – until (1) this interface is in predominant use in both CE and MSO products, and (2) there is some justification, consistent with a "level playing field," for its use in receiving cable services.

¹³ Bill Menezes, *Big MSO Orders Highlight Set-Top Progress at Show*, Multichannel News, Dec. 20, 1999, at 61.

III. The Critical Consumer Interface Issue Is Interactivity, As To Which The Cable Industry Is Not In Compliance With FCC Regulations.

Circuit City believes that the most serious threat to competition and consumer choice springs not from whether the 1394 interface is offered, but rather from the fact that cable system interactivity, already offered in MSO-provided devices, will not be supported in CE and IT devices over *any* interface for at least another year. This failure to support competition, as required by law and regulation, arises from deliberate choices made by the system operators that control CableLabs.

A. *CableLabs is at Least One Year Behind in Supporting Navigation Devices Capable of Competing With Interactivity Offered in MSO-provided Devices.*

Early in the OpenCable project, the cable systems that control CableLabs chose a technical path for the devices they provide themselves that is crucially different from their prescription for competitive devices. Devices designed for their own systems were allowed to be bound to elements of specific CPU operating systems. For OpenCable devices, however, the MSOs insisted that no operating system could be specified, so no features or functions could be made operating-system dependent. While either approach may be justifiable technically, the decision to implement different approaches for MSO and competitive boxes put the latter at a distinct and unwarranted disadvantage.¹⁴

As a result, the implementation, on CE and IT devices, of interactive features for particular systems – which relies on software downloaded from the system – would have to await the construction of a new “middleware” application layer in interactive CE and IT Navigation Devices, one not necessary in non-interactive CE and IT devices, or in *any* MSO-provided devices. Hence, the OpenCable specifications for competitive CE and IT devices were split. The specification for devices that could provide only non-interactive, “unidirectional” features and functions was put on a course that, while still late, could support nominal claims of compliance with the July 1, 2000 deadline. The specification for

¹⁴ According to published reports, the CableLabs decision was made for business rather than technical reasons – the operators purportedly did not want to surrender too much leverage to any OS provider. See, e.g., Price Colman, *S-A, Sun Software Deal Advances Set-Top Movement*, *Broadcasting & Cable*, Apr. 13, 1998, at 42.

interactive, "bidirectional" devices was put on a slower track, reflecting its technical complexity and, in Circuit City's view, the lack of sufficient priority and resources assigned to it by CableLabs.

Thus, the devices being offered by cable MSOs to consumers will be able to offer what consumers really want – one-button control over interactive advanced services, such as receiving pay-per-view (PPV) and video-on-demand (VOD) programming. For at least another year, OpenCable devices will not. Circuit City views this as an unjustifiable, but predictable, outcome when *an entrenched provider is allowed to set the rules and specifications for competitors but has not been obliged to follow those rules or specifications himself.*

B. The Commission Needs to Take Steps to Preserve Competition.

Circuit City has continually urged the Commission to move up the 2005 date by which MSO-provided boxes would have to employ the same specifications as competitive CE and IT boxes. Discrimination against the new entrants is no longer a matter of fear and potential; it is an unfortunate fact. Circuit City will address this situation in additional contexts before the Commission.

As to the issues raised by this NPRM, the discrimination against OpenCable devices to date makes it doubly important that the Commission tolerate no further impositions on such devices through requirements as to the 1394 interface, or through constraints via the DFAST license – especially when such impositions are not placed on MSO-provided devices.

IV. The FCC Needs To Oversee A Balanced, Inter-Industry Approach to Copy Protection Issues.

Federal communications and fiscal policy assume and promote a transition to digital broadcasting by 2006.¹⁵ Consumers have done their part, buying HDTV and "DTV-ready" receivers and monitors as soon as they have been made available. Prices, though still steep, have headed down the production "learning" curve that has made CE and IT products

¹⁵ *In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, MM Docket No. 87-268, *Fifth Report & Order*, 12 FCC Rcd 12809, ¶ 99 (1997).

among the best values ever offered to consumers. Yet, as their reward for signing onto the digital revolution, consumers are confronted with efforts to cut back on their accustomed noncommercial home recording practices. And those buying the DTV products available today are threatened with loss of the ability to *view* some programs for which they have fully paid. The Commission cannot allow this to happen.

A. *More than Recording Rights are at Stake – Consumer Viewing is Threatened By an Overly Restrictive Regime.*

Encouraged by the Commission's promotion of multi-industry support for the ATSC family of DTV standards, Circuit City and other CE and IT retailers have been able to offer HDTV, DTV, and DTV-ready products for more than a year. The "DTV-ready" designation on a display product means that (as opposed to specifications necessary to display an NTSC signal) it is capable of meeting the requirements with respect to resolution, scanning and throughput necessary to handle a DTV signal in one of the ATSC formats.

While there has been progress in producing digital display devices, most of the HDTV, DTV, and DTV-ready display devices offered by retailers use the same "analog" techniques as do conventional NTSC receivers (i.e., employing a "tube" in which the scanning of an electron beam is controlled, or a solid-state technology for activating phosphors). Hence, conversion from digital to analog format must take place prior to display. In some DTV receivers, this conversion is performed in the same box as the display device. In the vast majority of receivers sold by Circuit City and other retailers, however, the display device contains no facility for this conversion. It is performed at the output stage of a separate box, which is either provided with the display or can be added later.¹⁶ This closely approximates the manner in which computer CPUs, which are digital, and computer monitors, which are analog, have been sold for many years.

Like the sales model, the interface for DTV set-tops and displays is derived from the computer practice. DTV receivers rely, for their broadband (i.e., non-NTSC) input on a variant of the computer "RGB" interface. Such a "component analog interface" provides

¹⁶ 80-90% of the non-integrated DTV displays bought at Circuit City are purchased by consumers who do not acquire a DTV tuner or other "set-top box" at the same time.

sufficient speed and bandwidth to handle the complete, uncompressed DTV signal, received from the digital-to-analog converter, for display. As in the case of computers, this allocation of resources promotes efficient and separate selection by consumers of the processing and display features that they want.

In letters and public statements, representatives of the Motion Picture Association of America have identified the strategic objective of keeping DTV transmissions, carried by any means other than free terrestrial broadcast, encrypted up to the point of display.¹⁷ Specifically, they have sought to reserve the right *not to convert to analog* (other than the NTSC output¹⁸) transmissions as to which they have copy protection concerns. In the case of most DTV receivers on the market today, this would mean *not providing the DTV display* for which the customer has paid. This outcome apparently has already been assumed by CableLabs¹⁹

The Commission should make crystal clear, in this proceeding, that such an anti-consumer, anti-competitive²⁰ result would be flatly unacceptable. Consumers who have in good faith purchased non-integrated HDTV, DTV, and DTV-ready receivers, and pay their

¹⁷ *FCC Office of Engineering and Technology Roundtable on DTV Receiver Compatibility With Cable Television Service*, May 20 1999, Statement of Chris Cookson, Executive Vice President Technical Operations, Warner Bros.; *Broadcasters Seek FCC Deadline for DTV-Cable Compatibility*, May 24, 1999 (noting Chris Cookson concerns over digital copy protection, saying "content suppliers simply won't make programs available to DTV if piracy is too easy."); *Ex Parte* Letter from Jack Valenti to Chairman William E. Kennard (filed June 9, 1999) ("Effective copy management capability requires that "cable ready" architecture be able to protect high-value content against unauthorized reproduction not only as it travels into the POD, but also as it travels from the POD to the final display device.").

¹⁸ NTSC transmissions can be protected by a "Macrovision" process that is not effective as to broadband transmission of this nature.

¹⁹ Appendix A, *OpenCable Set-top Box Architecture for Multimedia Delivery – Part II*, SPECS News & Technology From Cable Labs, Vol. 12, No. 2, Feb./Mar. 2000, at 11 and Fig. 5. Referring to a figure depicting the use of an OpenCable set-top box as a stand-alone unit, CableLabs says "Existing analog television or a DTV may be connected for viewing television channels – of course, the analog output port will not provide HDTV channels." *Id.* The certainty with which this statement is made is evidence enough that consumers are facing a real threat of losing the services for which they have paid.

²⁰ Several product integration and efficiency factors go into the allocation of functions among devices, and the degree of integration in each "box." Taking away from product designers the option of providing a non-integrated display device would deny what is often – as in the case of PCs – the most flexible, economical, and competitive option.

cable bills, should be able to get what they paid for. They should not lose value because of an industry's concern that consumer recorders employing a component analog interface *might* appear, and that consumers *might* change their video home recording practices.

B. Consumers are Entitled to the Same Rights With Respect to Digital Products that they Enjoy as to Analog Products.

Circuit City's customers have been using consumer electronics devices to make private, noncommercial home recordings since 1976. The ill predicted to befall the motion picture industry as a result of devices with recording capability being available to consumers has not, in fact, occurred. To the contrary, whereas playback-only home video devices failed to find a significant market, video recorders formed the basis for a home video industry that has been a bonanza. Not only has the industry's inventory of old movies become much more valuable; home video has now become the industry's primary revenue source – the first one considered when decisions are made as to new motion picture projects.²¹ As the Supreme Court found in the Betamax case, nothing could better illustrate the contribution of the concept of "fair use" to fulfilling the purpose of the copyright laws.²²

Today, cable customers are not constrained from recording at home. Copy protection technologies have been developed, with the cooperation of the CE and IT industries, to facilitate a balanced regime that recognizes both consumer and proprietor rights. But no overall architecture for such a regime has yet emerged. In the absence of any balanced solution, CableLabs has put forward draft versions of the DFAST license that would resolve such issues unilaterally and drastically against consumer interests. According to these drafts, consumers would be at risk of de-certification of their devices, and revocation of PODs, if a cable provider (based on contracts with the motion picture industry) developed *any* objection to the implementation of unspecified copy control objectives. No

²¹ Home video supplanted theatrical distribution as the primary revenue source years ago.

²² *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984). The constitutional purpose of copyright is to promote creation rather than to reward creators, although the latter has always followed the former.

balance or consumer right or safe harbor of the sort that has been sought in CE and IT industry negotiations with the motion picture industry is provided for.²³

In Circuit City's experience, it is important that consumer outcomes be easily understood and predictable, as well as fair. Otherwise, consumers will conclude, from their frustration, that their CE or IT products are defective. Such a result causes loss and inconvenience for consumers, as well as for the industries that serve them. In the case of CE and IT Navigation Devices, which have already been put at unlawful disadvantage, this would be another, unwarranted barrier to consumer acceptance. As we discuss below, because of the different purpose and, particularly, the limited scope of the DFAST license, it is not the right venue for resolving the copy protection issue.

C. A Balanced Result as to Copy Protection Means Crossing Several Product, Interface, and Industry Lines.

Any resolution of the issues raised in the NPRM must acknowledge, and be based on, consumer choice. Consumers cannot be expected to rely on a single interface for connecting devices of different degrees of integration and complexity – particularly if this interface is not included in the DTV product they have already purchased. Nor can they be expected to have their behavior governed by license provisions which, in a competitive market, must be of limited scope. Nor, even if applications of such breadth could be arranged, should a small group of private interests, no matter how well motivated, dictate the resolution of broad-scale policy issues with important consequences for consumers.²⁴ The Commission has clear jurisdiction over key issues and interfaces of importance to cable consumers. To the extent the Commission may conclude that only the Congress has the power to resolve all issues in their entirety, the Commission should act at least to assure that the interfaces and licenses

²³ See *WIPO One Year Later: Assessing Consumer Access to Digital Entertainment on the Internet and Other Media: Hearing Before the Subcomm. on Telecommunications, Trade and Consumer Protection of the House Committee on Commerce*, 106th Cong. 4-5 (Oct. 28, 1999)(the "WIPO Hearing") (statement of Rep. Boucher); *Id.* at 16 (statement of Jack Valenti, President & CEO, Motion Picture Association of America); *Id.* at 34-40 (statement of Gary Klein, Vice Chairman Home Recording Rights Coalition).

²⁴ See *WIPO Hearing* at 1-2, 53-54 (comments of Rep. Tauzin, Chairman, House Subcommittee on Telecommunications, Trade and Consumer Protection); *Id.* at 40-47 (statement of Michael Moradzadeh, Intel Corp., Chairman, Digital Transmission License Administrator, LLC).

over which it does exercise jurisdiction are not turned into vehicles for oppressing consumers.

D. Policy or License Decisions Approved in this Proceeding Will Affect Other Media and Device Industries.

The issues raised in this proceeding are vital for an additional reason: If the Commission does not demand a pro-consumer result with respect to cable program distribution, the utility of competitive devices used on Digital Broadcast Satellite ("DBS") systems will be degraded. Motion picture companies are in a position to – and have threatened to – withhold product from lines of distribution as to which they are not satisfied with respect to copy protection.²⁵

The Commission should not assume that the cable industry can or will protect consumers in order to compete with DBS distribution. The significance of this proceeding is quite opposite: *If the motion picture industry's requirements are incorporated into "compliance rules" approved in this proceeding as license constraints, the motion picture industry will without question be able, by threatening to withhold product, to insist contractually on similar consumer, product and interface restrictions with respect to DBS.*

V. Copy Protection And Competitive Issues Cannot Be Solved Adequately Or Fairly Through The DFAST License.

When Congress passed Section 304, it had competition, not copyright, in mind. In following the CPE deregulation model it was clearly foreseeable that some licensed, national security interface would be necessary to enable national portability and competition. But there was no suggestion that this legislation would or should provide a contractual link whereby the options of consumers, and the capability of devices, would be circumscribed contractually at the behest of the motion picture industry.

The Navigation Device Report & Order states that the Commission's limitations on conditions that may be imposed, by license, on competitive devices are derived from CPE

²⁵ See, e.g., David Hatch, *TV Makers Angered by MPAA's Stance*, Electronic Media, Nov. 2, 1998, at 6; Christopher Stern, *MPAA Getting High-Def Pix Headache*, Daily Variety, Oct. 28, 1998.

precedent: "We conclude that the core requirement, to make possible the commercial availability of equipment to MVPD subscribers, is similar to the Carterfone principle adopted by the Commission in the telephone environment. The *Carterfone* 'right to attach' principle is that devices that do not adversely affect the network may be attached to the network."²⁶

That the CableLabs "DFAST" license emerges as a potential copyright killing field is an entirely unintended and inappropriate consequence.²⁷ Indeed, the Commission foresaw the possibility of this sort of abuse, and specifically outlawed it in its regulations. The draft DFAST license provisions are contrary to these regulations.

A. *FCC Regulations Clearly and Specifically Limit OpenCable Licensing Restrictions to Issues of Conditional Access Rather than Copy Protection.*

Circuit City called the illegal nature of the first DFAST license to the Commission's attention in an *ex parte* filing on February 2 of this year.²⁸ In purporting to impose copy protection constraints on CE and IT host devices, this version, and succeeding drafts, clearly run afoul of a plainly stated rule:

76.1204(c) No multichannel video programming distributor shall by contract, agreement, patent, intellectual property right or otherwise preclude the addition of features or functions to the equipment made available pursuant to this section that are not designed, intended or function to defeat the conditional access controls of such devices or to provide unauthorized access to service.²⁹

As applied to the DFAST license, the effect of the regulation is precise: unless the purpose of a CE or IT device feature or function is to defeat conditional access controls or to provide unauthorized access to service, MSOs may not constrain it by license. Moreover, as the NPRM appears to recognize,³⁰ any failure to certify a CE or IT device, or to withdraw use

²⁶ *Navigation Device R&O* ¶ 8.

²⁷ H.R. Rep. No. 104-204, at 112 ("[T]he transition to competition in network navigation devices ... is an important national goal" ... that will lead to "innovation, lower prices and higher quality.")

²⁸ *Ex Parte* Letter from Robert S. Schwartz to Magalie R. Salas, CS Docket No. 97-80 (filed Feb. 2, 2000)

²⁹ 47 C.F.R. § 76.1204(c).

³⁰ *Compatibility NPRM* ¶ 20.

of a POD from it, on a basis other than facilitating unauthorized service or defeating conditional access would also be a violation of Section 76.1202, which is even more plainly stated and provides:

No multichannel video programming distributor shall by contract, agreement, patent right, intellectual property right or otherwise prevent navigation devices that do not perform conditional access or security functions from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with such owner or operator, subject to Section 76.1209 [theft of service].³¹

Section 76.1201 makes clear that the right to make such competitive devices available includes the right of consumers to attach and use them on the network, "except in those circumstances where electronic or physical harm would be caused by the attachment or operation of such devices or such devices may be used to assist or are intended or designed to assist in the unauthorized receipt of service."³² Section 76.1203 spells out the limitations on contractual constraints, even when they are addressed to instances of harm to the network or security:

Such restrictions may be accomplished by publishing and providing to subscribers standards and descriptions of devices that may not be used with or attached to its system. Such standards shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service. In any situation where theft of service or harm occurs or is likely to occur, service may be discontinued.³³

The discussion of these rules in the Navigation Device Report & Order notes specifically:

These standards shall be used only to prevent attachment of navigation devices that raise reasonable and legitimate concerns of electronic or physical harm or theft of service, and not as a means to unreasonably restrict the use of navigation devices obtained from a source other than the MVPD.³⁴

By definition, CE and IT host devices are not allowed under FCC regulations to perform conditional access or security functions. These regulations define "Conditional

³¹ 47 C.F.R. § 76.1202.

³² 47 C.F.R. § 76.1201.

³³ 47 C.F.R. § 76.1203. As described by the Commission in the Report & Order "[t]he rule we adopt specifically states that the right to attach does not apply to any equipment which can be used to receive, or assist in the unauthorized reception of service." *Navigation Device R&O* ¶ 32.

³⁴ *Navigation Device R&O* ¶ 38.

Access” as “[t]he mechanisms that provide for selective access and denial of specific services and make use of signal security that can prevent a signal from being received except by authorized users.” The entire purpose of the Commission’s regulations, and the requirement of a national security interface, is to bifurcate Navigation Device functions, so that POD modules provide authorization for, and enable, receipt of service, and host CE and IT devices cannot and do not do so.³⁵ Thus, if copy protection functions performed by OpenCable host devices were to be classified as “conditional access” or “security,” the OpenCable specification itself would be contrary to Commission regulations.

Even without these regulations, the Commission has authority to reject requirements that impose one-sided and anti-competitive burdens on consumers. In allowing CableLabs to develop standards to implement Congress’ mandate, the FCC reserved clear and aggressive oversight jurisdiction over all matters pertaining to implementation of such standards, including issues concerning technology, licensing, and competitive device support.³⁶ No further basis for review is required.

B. The FCC Should Not Revise Its Regulations So as to Allow Copy Protection Issues to Be Resolved Through the DFAST License.

Since the license constraints proposed in the drafts of the DFAST license are clearly counter to FCC regulations, the Commission would need to take action, to change its regulations, in order to allow such constraints to be imposed on the design freedom, and right to attach, of competitive CE and IT devices. Even if the Commission should arrive, in this proceeding, at some policy conclusion that includes a finding that some sort of constraint, that gives due regard to competition and consumer welfare, would be appropriate, the DFAST license would be an inappropriate vehicle for application of broad copyright policy.

³⁵ The history of the FCC’s proceedings as to cable compatibility and competitive availability is replete with statements by MSOs and the NCTA that they could not risk the performance of any conditional access or security functions by any circuitry other than that supplied by the MSO. *See, e.g.,* NCTA Navigation Device Comments at 26-27; Time Warner Navigation Device Comments at 9-10,13; U.S. West Navigation Device Comments at 12. Achieving competition, yet meeting this objection, was the entire purpose of the NRSS (see *Compatibility NPRM* ¶ 8) and the OpenCable POD specification based on it.

³⁶ *Navigation Device R&O* ¶¶ 69, 125; *Navigation Device Reconsideration Order* ¶¶ 33, 41.

1. *MSO-provided Navigation Devices that do not support PODs do not encounter DFAST technology, hence cannot be bound by the DFAST license.*

The “hook” devised by the cable and motion picture industries for purporting to control the features and functions of CE and IT devices is the application of a relatively simple encryption technology across the POD interface, to assure its “robustness” for copy protection purposes.³⁷ MSOs, however, have until 2005 to manufacture and deploy Navigation Devices that do not contain the POD interface, hence *do not encounter DFAST technology*. These MSO devices – which may remain in the marketplace once deployed – cannot lawfully be subject to the DFAST license, as they make no use of the licensed technology. Thus, use of the DFAST license as a vehicle for imposing copy control constraints on consumers would constrain CE and IT, but not MSO devices.

This failure is not merely theoretical. MSOs have never committed to make their devices OpenCable compliant. Devices being put into use, in increasing numbers, today are customized for particular systems and bear different degrees of relevance to OpenCable standards. They are major, and may remain primary, factors in the marketplace. Any action taken by the Commission to embrace copy control, as well as conditional access, should govern *all* Navigation Devices, not just those that are competitive with the entrenched providers.

2. *Imposition of restraints through the DFAST license would thus further burden competitive devices in unequal competition with MSO-provided devices. Imposition of any such restraints should at best not be allowed until 2002, and only if full compliance of MSO-provided Navigation Devices with all OpenCable specifications is ordered by that date as well.*

Circuit City has, above, provided a catalog of the ways in which the OpenCable specification has defeated the “level playing field” mandate of the Congress and the

³⁷ This technology does not aspire to a security level that would be considered sufficient by MSOs to prevent theft of service or for other conditional access purposes. If it did, this encryption could be used at the headend and there would be no need for PODs – the CE and IT devices could function directly on the cable system. No MSO or motion picture company has proposed that this technology be used for such purpose.

Commission. All of these infringements arise from CableLabs having been able to follow one set of specifications for MSO-provided devices, and another for devices to be offered by competitive entrants. Imposing further restraints on CE and IT devices, but not on MSO-provided devices, through the DFAST license would be, if one is necessary, the last straw in breaking the back of their competitiveness.

The Commission should not destroy its own regulations by changing them to allow further discrimination. If the Commission sees no alternative, the only reasonably reliable way to avoid such discrimination would be to *delay the imposition of any such constraints until January 1, 2002, and move up the date for full compliance with OpenCable specifications by MSO-provided boxes also to January 1, 2002.* In the Navigation Device Report & Order, the Commission clearly stated that, upon assessing the prospects for full compliance by July 1, 2000, it was reserving the right to do so.³⁸

3. *As no single license can be expected to cover all potential Navigation Devices, the FCC should recognize copy protection issues as raising inter-industry policy questions as to consumer choice and welfare.*

The DFAST license applies only to POD-enabled devices. The "5C" ("DTCP") license discussed in the NPRM applies only to devices implementing the 1394 interface. Neither was originally conceived, or can be adapted, to settle all consumer copy protection issues. Even if the DFAST license could apply absolutely equally to all Navigation Devices (and those in field were recalled as necessary), CableLabs and cable MSOs should not be in a position to dictate, unilaterally, the competitive and copy protection outcomes that are critical to future

³⁸ *Navigation Device R&O* ¶ 69. Another area of discrimination, also in direct violation of FCC rules, involves the failure of CableLabs to provide conditional access support for CE and IT devices on "hybrid" systems in which both digital and analog conditional access measures are employed. See Opposition of Circuit City Stores Inc. filed May 22, 2000 in response to the pending waiver petitions by Charter and AT&T. *Petition for Waiver from Requirement to Provide Point of Deployment Modules*, CSR 5545-Z (Public Notice Rel. May 5, 2000); *Petition for Waiver from Requirement to Provide Point of Deployment Modules*, CSR 5548-Z (Public Notice Rel. May 11, 2000). In proposing to the Commission that the original, full analog conditional access obligations be eased in aid of MSO compliance, Circuit City and others also proposed that the "level playing field" date be moved up. *Ex Parte* Letter from Robert S. Schwartz to Magalie R. Salas, CS Docket No. 97-80 (filed Feb. 2, 2000). The Commission, in accepting the compromise suggestion, declined to move this date up at that time, but again said that it would consider doing so based on compliance developments. *Navigation Device Reconsideration Order* ¶ 33. Given the number of craters now in the playing field, there is sufficient basis in experience for the Commission to act.

consumer welfare. Increasingly, there are indications that CableLabs itself recognizes the heavy nature of such a burden.³⁹

- a. The FCC should convene a working group to address these issues on an expedited basis.

Since no solution to copy control issues will work unless it is fair, balanced and comprehensive, the Commission should recognize that its jurisdiction over key elements of the problem should result in its leadership in convening a solution of adequately broad applicability. Any partial solution is likely to have broad ranging, but unbalanced and unfair, implications. While legislation may be the ultimate answer in terms of full guarantees of both consumer rights and industry enforcement, the Commission can cast the die through judicious exercise of its jurisdiction.

- b. The July 1 date for MSO full compliance with all obligations related to OpenCable requires that, to comply with existing regulations, CableLabs should provide a restriction-free interim DFAST license immediately.

In view of what must be done, and the disadvantages competitive CE and IT devices face simply in order to get to market, there is no way that pending issues can be worked out, inside or outside the DFAST license, by July 1. Meanwhile, manufacturers are held back by unilateral demands contained in the unlawful license draft that they would have to sign in order to prepare products for market.

CableLabs has offered an interim license for "evaluation" purposes, but not for retail product manufacture. To contain the scope of its violation of Commission orders, CableLabs needs immediately to extend its "evaluation" license to allow manufacture, sales, and marketing, and to provide full support of such products through PODs and system functionality. Anything less would be a severe aggravation of the effect of the discrimination, in other areas, for which there is no immediate remedy. The Commission

³⁹ The original DFAST licensing documents were offered as a license, to which signatures were solicited and accepted. After the Circuit City *ex parte* comments and filing, CableLabs and NCTA clarified that it was a draft. Additional drafts, recognizing the delicacy of interface and copy control issues, have been circulated. There is still, however, no lawful license instrument available for CE and IT manufacturers to execute.

should recognize, and make plain, that failure to do this will increase the imminence and seriousness of the sanctions that cable operators may face for their noncompliance to date.

VI. Conclusion

The issues raised by the Commission in this NPRM, important in themselves, are a subset of those pertaining to the general frustration, to date, of the goals established by the Congress in Section 304 and pursued by the Commission in CS Docket 97-80. Despite three years of work by the Commission, the goals of competition and consumer choice are imperiled. If the Commission were to approve labeling and licensing provisions as presently sought by the Cable industry, the competition and increase in consumer welfare sought by the Congress could slide irretrievably out of reach.

The Commission has the responsibility and the authority to make sure that this does not occur. If it were to wait, and to accept further contractions of consumer rights, or impositions on the competitive "level playing field," the FCC would fail in its obligations. It should take immediate steps to allow competitors to enter the device market free of unlawful and unfair constraints, and to require Cable operators to rely on the same enabling technologies that they make available to competitive entrants to the device market.

Respectfully submitted,

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Appendix A

OpenCable continued from page 9

Thus, a DVCR or a camcorder will be able to use the TV as a viewing monitor. Similarly, if the power to the STB and the DTV is turned off, the camcorder will be able to transfer digital audio/visual data to the DVCR for recording.

devices to complete standard procedures, such as dynamic node address allocation, self-identification, arbitration for IRM, BM, and cycle master. The STB will then query the DTV to collect capability information. Some of the AV/C commands involved are shown in the following table.

UNIT INFO	Used to obtain information about the AV unit. Response example: <i>unit_type = Digital TV</i> <i>Company_ID = XXX</i>
SUBUNIT INFO	Used to obtain information about the AV unit subunits. Response example: <i>subunit_type = Video Monitor</i> <i>subunit_type = Tuner etc</i>
OPEN DESCRIPTOR	Gains the right to access the descriptor corresponding to a subunit.
READ DESCRIPTOR	Reads data from the descriptor. The descriptor contains information about the subunit capabilities. For example, it checks, in case of the Video Monitor subunit: OSD grid format supported, whether DTV supports double buffering

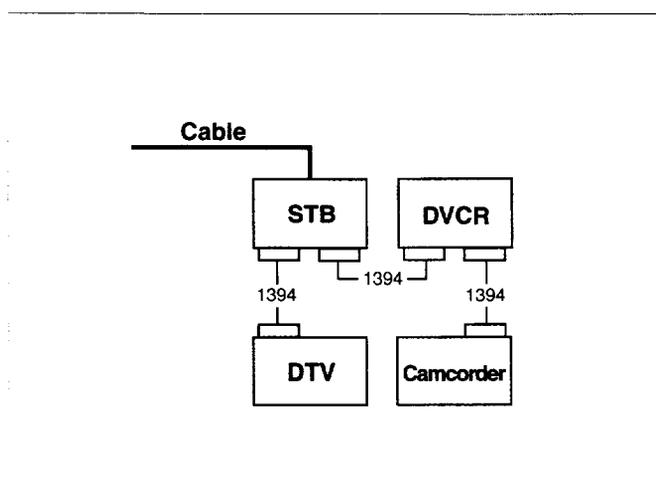


Figure 4. A Simple Home Entertainment Environment

What will happen when two devices, such as a STB and a DTV with 1394 capabilities, are connected using a 1394 cable for television viewing? Any device attach/detach, or power turn on, will cause the bus to reset. Before the link is ready for data transfer, a sequence of handshake signals (packets) will be exchanged between the two

Once the initialization sequence is completed, the STB/DTV pair is ready to interact. An example of how this interaction could occur is described here. A menu display, with buttons or icons on the DTV screen, will indicate that the link to the STB is ready; the table on page 10 details the basic sequence to view a television channel.

The DTV and the STB could support a default mode after power-up to select the last state (i.e., last television channel viewed), which is similar to current televisions. In this case, the above sequence would run automatically without user intervention.

1394 Limitations

Although the 1394 serial bus technology includes many advanced features, which make it user-friendly and, at the same time, high performing, there are a few limitations (please see reference [2]).

The OpenCable architecture may be implemented in various ways as shown in Figure 5 (page 11). Figure 5a shows an implementation of the OC STB architecture as a stand-alone

OpenCable continued from page 10

<p>The user invokes the electronic program guide (EPG) by pushing a button on the remote. The STB and DTV establish an OSD connection. Using asynchronous packets, the STB then sends the OSD bitmap information to the DTV.</p>	<p>OpenCable™ HDNI Specification</p>
<p>Television channel selection. The user can either browse/select from the EPG or simply input the television channel number directly without EPG assistance.</p>	<p>Implementation dependent</p>
<p>The STB requests that the IRM create an isochronous channel with a certain bandwidth matching the bit rate of the selected television channel (HD, SD, etc.).</p>	<p>IEC 61883-1 General Connection Management Procedures (CMP)</p>
<p>The isochronous channel number assigned by the IRM is conveyed to the STB output plug control register and the DTV input plug control register.</p>	<p>IEC 61883-1 General CMP</p>
<p>The STB starts sending isochronous packets containing MPEG data to the isochronous channel via its output plug. The DTV starts listening from the same isochronous channel via its input plug.</p>	<p>IEC 61883-4 MPEG-2-TS data transmission</p>

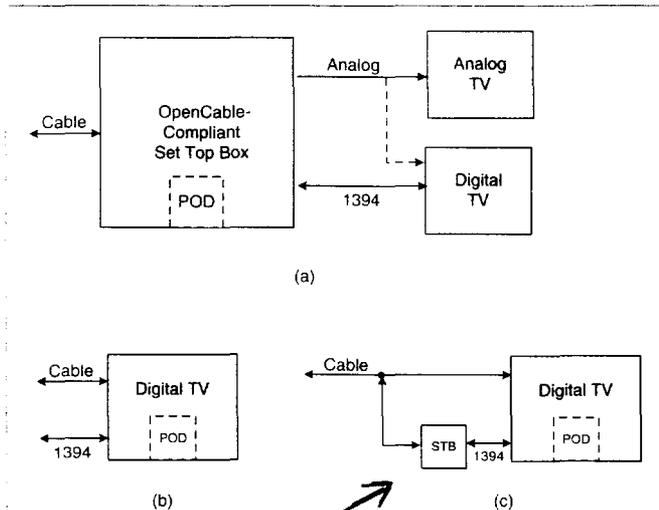


Figure 5. STB Implementation and Logical Interfaces

unit. Existing analog television or a DTV may be connected for viewing television channels—of course the analog output port will not provide HDTV channels. In Figure 5b, a STB may be embedded inside a DTV with a PCMCIA card slot for the POD. Figure 5c shows a way to augment the OC

DTV with an enhanced STB in the future, when such enhanced services will be available.

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Certificate of Service

I, Janet Davis, hereby certify that true copies of the foregoing Comments of Circuit City Stores, Inc. were served by hand on May 24, 2000, to the persons listed below.

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