

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

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| In the Matter of |) | |
| |) | |
| Implementation of Section 304 of the Telecommunications Act of 1996 |) | CS Docket No. 97-80 |
| |) | |
| Commercial Availability of Navigation Devices |) | |
| |) | |
| Compatibility Between Cable Systems and Consumer Electronics Equipment |) | PP Docket No. 00-67 |
| |) | |
| Oceanic Time Warner Cable, A subsidiary of Time Warner Cable, Inc. |) | File Nos. EB-07-SE-351, EB-07-SE-352 |
| |) | |
| Oceanic Time Warner Cable, a division of Time Warner Cable, Inc. |) | NAL/Acct. Nos. 200832100074, |
| Oceanic Kauai Cable System |) | 200932100001, 200932100002, |
| |) | 200932100003, 200932100008, |
| Oceanic Time Warner Cable, a division of Time Warner Cable, Inc. |) | 200932100022, and 200932100023 |
| Oceanic Oahu Central Cable System |) | |
| |) | |
| Cox Communications, Inc. Fairfax County, Virginia Cable System |) | FRN Nos. 0018049841, 0016034050 |
| |) | |
| Cable One, Inc.'s Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules |) | CSR-8080-Z |

THIRD REPORT AND ORDER AND ORDER ON RECONSIDERATION

Adopted: October 14, 2010

Released: October 14, 2010

By the Commission: Chairman Genachowski and Commissioners Copps, McDowell, Clyburn and Baker
issuing separate statements.

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I. INTRODUCTION

1. In this Third Report and Order (“*Order*”), we remedy shortcomings in our CableCARD rules in order to improve consumers’ experience with retail navigation devices (such as set-top boxes and digital cable-ready television sets) and CableCARDS, the security devices used in conjunction with navigation devices to perform the conditional access functions necessary to access cable services. We believe these rule changes are necessary to discharge our responsibility under the Act to assure the development of a retail market for devices that can navigate cable services. We seek to remove the disparity in consumer experience between those who choose to buy a retail device and those who lease the cable provider’s set-top box,¹ as the disparity is impeding the development of a retail market for navigation devices. Specifically, we adopt rules today to (1) require cable operators to support the reception of switched digital video services on retail devices to ensure that subscribers are able to access the services for which they pay regardless of whether they lease or purchase their devices; (2) prohibit price discrimination against retail devices to support a competitive marketplace for retail devices; (3) require cable operators to allow self-installation of CableCARDS where device manufacturers offer device-specific installation instructions to make the installation experience for retail devices comparable to the experience for leased devices; (4) require cable operators to provide multi-stream CableCARDS by default to ensure that cable operators are providing their subscribers with current CableCARD technology; and (5) clarify that CableCARD device certification rules are limited to certain technical features to make it easier for device manufacturers to get their products to market. We also modify our rules to encourage home-networking by simplifying our set-top box output requirements. In addition, we adopt a rule to promote the cable industry’s transition to all-digital networks by exempting all one-way set-top boxes without recording functionality from the integration ban. Each of the rule changes adopted in this item are intended to meet the goals of Section 629 by further developing a retail market for navigation devices. Finally, we consider nine petitions for reconsideration of prior decisions in CS Docket No. 97-80, PP Docket No. 00-67, and the enforcement proceedings captioned above regarding changes to device certification procedures, the Commission’s content encoding and protection rules, and access to switched digital video. Together, the changes we adopt today should benefit consumers who wish to buy navigation devices while at the same time removing unnecessary regulatory obligations on cable operators.

¹ Cable operators’ leased navigation devices have historically been set-top boxes that serve a single television set and provide access to both linear channels and additional two-way services, including video-on-demand offerings. Advances in technology and consumer demand for greater functionality and home network features may lead cable operators to develop more advanced leased navigation devices, including home media servers or home gateways, that provide greater functionality and the ability to serve multiple television sets by incorporation of multiple tuners and home networking protocols.

II. BACKGROUND

2. In the Telecommunications Act of 1996, Congress added Section 629 to the Communications Act.² That section directs the Commission to adopt regulations to assure the commercial availability of navigation devices used by consumers to access services from multichannel video programming distributors (“MVPDs”). Section 629 covers “equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems.”³ Congress, in enacting the section, pointed to the vigorous retail market for customer premises equipment used with the public switched-telephone network and sought to create a similarly vigorous market for devices used with MVPD services.⁴

3. In 1998, the Commission adopted the *First Report and Order* to implement Section 629.⁵ The order required MVPDs to make available a conditional access element separate from the basic navigation or host device, in order to permit unaffiliated manufacturers and retailers to manufacture and market host devices while allowing MVPDs to retain control over their system security.⁶ The technical details of this conditional access element were to be worked out in industry negotiations. In 2003, the Commission adopted, with certain modifications, standards on which the National Cable and Telecommunications Association (“NCTA”) and the Consumer Electronics Association (“CEA”) had agreed in a Memorandum of Understanding (“MOU”).⁷ The MOU prescribed the technical standards for one-way (from cable system to customer device) CableCARD compatibility. The CableCARD is a security device provided by an MVPD, which can be installed in a retail navigation device bought by a consumer in the retail market to allow the consumer’s television to display MVPD-encrypted video programming. To ensure adequate support by MVPDs for CableCARDS, the Commission prohibited MVPDs from integrating the security function into set-top boxes they lease to consumers, thus forcing MVPDs to rely on CableCARDS as well.⁸ This “integration ban” was initially set to go into effect on January 1, 2005,⁹ but that date was later extended to July 1, 2007.¹⁰ Although the cable industry has

² See Telecommunications Act of 1996, Pub. L. No. 104-104, § 304, 110 Stat. 56, 125-126 (1996); 47 U.S.C. § 549.

³ 47 U.S.C. § 549(a).

⁴ H.R. REP. NO. 104-204, at 112-3 (1995).

⁵ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 13 FCC Rcd 14775 (1998) (“*First Report and Order*”).

⁶ *Id.* at 14808, ¶ 80; 47 C.F.R. § 76.1204(a)(1).

⁷ See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, 18 FCC Rcd 20885, at 20926-20944, Appendix B (2003) (“*Plug and Play Order*”). See also *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, 18 FCC Rcd 518, 531-609, Appendix B (2003).

⁸ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6794, ¶ 2 (2005) (“[C]ommon reliance by cable operators on the same security technology ... that consumer electronics manufacturers must employ in developing competitive navigation devices will help attain the goals of Section 629 of the [Telecommunications] Act.”).

⁹ *Id.*

¹⁰ In April 2003, the Commission extended the effective date of the integration ban until July 1, 2006. See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 18 FCC Rcd 7924, 7926, ¶ 4 (2003). Then, in 2005, the Commission further extended that date until July (continued....)

challenged the lawfulness of the integration ban on three separate occasions, in each of those cases the D.C. Circuit denied those petitions.¹¹

4. Unfortunately, the Commission's efforts to date have not developed a vigorous competitive market for retail navigation devices that connect to subscription video services.¹² Most cable subscribers continue to use the traditional set-top boxes leased from their cable operator; only 1 percent of the total navigation devices deployed are purchased at retail.¹³ Although following adoption of the CableCARD rules some television manufacturers sold unidirectional digital cable-ready products ("UDCPs"), most manufacturers have abandoned the technology.¹⁴ Indeed, since July 1, 2007, cable operators have deployed more than 22.75 million leased devices pre-equipped with CableCARDS, compared to only 531,000 CableCARDS installed in retail devices connected to their networks.¹⁵ Furthermore, while 605 UDCP models have been certified or verified for use with CableCARDS, only 37 of those certifications have occurred since the integration ban took effect in July 2007.¹⁶ This evidence indicates that many retail device manufacturers abandoned CableCARD before any substantial benefits of the integration ban could be realized.

5. Not only were very few retail devices manufactured and subsequently purchased in the retail market, but an additional complication with the installation process further depressed the retail market. The cable-operator leased devices come pre-equipped with a CableCARD, so that no subscriber

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1, 2007. See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6810, ¶ 31 (2005).

¹¹ *Comcast Corp. v. FCC*, 526 F.3d 763 (D.C. Cir. 2008); *Charter Comm., Inc. v. FCC*, 460 F.3d 31 (D.C. Cir. 2006); *General Instrument Corp. v. FCC*, 213 F.3d 724 (D.C. Cir. 2000). The Commission argued, and the D.C. Circuit agreed, that the integration ban was a reasonable means to meet Section 629's directive. *Charter Comm., Inc. v. FCC*, 460 F.3d 31, 41 (D.C. Cir. 2006) ("this court is bound to defer to the FCC's predictive judgment that, '[a]bsent common reliance on an identical security function, we do not foresee the market developing in a manner consistent with our statutory obligation.'").

¹² FEDERAL COMMUNICATIONS COMMISSION, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 50-51 (rel. March 16, 2010); Rob Pegoraro, *As Cable TV Goes Digital, It's Still Stuck Inside the Box*, THE WASHINGTON POST, Oct. 4, 2009, at G1; *F.C.C. May Pry Open the Cable Set-Top Box*, THE NEW YORK TIMES, Dec. 4, 2009, available at <http://bits.blogs.nytimes.com/2009/12/04/watch-out-comcast-the-fcc-may-not-let-you-favor-nbc/>.

¹³ See FEDERAL COMMUNICATIONS COMMISSION, BROADBAND GAPS 18 (November 18, 2009), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294708A1.pdf.

¹⁴ Rob Pegoraro, *As Cable TV Goes Digital, It's Still Stuck Inside the Box*, THE WASHINGTON POST, Oct. 4, 2009, at G1. Some manufacturers are offering tru2way television sets with CableCARD slots in test markets. David Chartier, *Panasonic ships first tru2way HDTVs to Chicago, Denver*, ARS TECHNICA, October 16, 2008, available at <http://arstechnica.com/old/content/2008/10/panasonic-ships-first-tru2way-hdtvs-to-chicago-denver.ars>. See *infra* ¶ 6 for a discussion of tru2way.

¹⁵ Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 1 (Sept. 30, 2010).

¹⁶ Compare Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 1 (December 22, 2009) with Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 1 (June 25, 2007).

premises installation of the card is required.¹⁷ But this is not the case with devices purchased at retail. CableCARDS for use in retail devices must be installed in the home, and many cable operators require professional installation by the cable operator. Unfortunately, the record reflects poor performance with regard to subscriber premise installations of CableCARDS in retail devices.¹⁸ This could be a consequence of the fact that only 1 percent of the total navigation devices deployed are purchased at retail and require an actual CableCARD installation,¹⁹ which may have made it difficult to train the cable installers properly. It could also reflect either indifference or reluctance by cable operators to support navigation devices purchased at retail in competition with their own set-top boxes. Regardless of the cause, these serious installation problems further undermine the development of a retail market.

6. A consumer using a unidirectional device cannot take advantage of two-way services offered by a cable operator. The Commission anticipated that the parties to the MOU would negotiate another agreement to achieve bidirectional compatibility, using either a software-based or hardware-based solution.²⁰ Unlike one-way devices, which can only receive communication from cable headends, bidirectional devices can send requests to the cable headend, which enables those devices to receive services like cable operator-provided interactive programming guides, cable-operator provided video-on-demand and pay-per-view, and other interactive programming services. When the Commission realized in June 2007 that negotiations were not leading to an agreement for bidirectional compatibility between consumer electronics devices and cable systems, it released a Third Further Notice of Proposed Rulemaking, seeking comment on competing proposals for bidirectional compatibility and other related issues.²¹ In the wake of the *Two-way FNPRM*, the six largest cable operators and numerous consumer electronics manufacturers negotiated an agreement for bidirectional compatibility that continues to rely and builds on CableCARDS by using a middleware-based solution called “tru2way.”²²

7. The National Broadband Plan, released in March of this year, recommended changes in the CableCARD rules to provide benefits to consumers who use retail CableCARD devices without

¹⁷ See, e.g., MOTOROLA DCX700 SPEC SHEET, available at http://www.motorola.com/staticfiles/Business/Products/TV%20Video%20Distribution/Customer%20Premises%20Equipment/All%20Digital%20QAM%20Set-tops/DCX700/_Document/static_files/DCX700%20spec%20sheet.pdf?localeId=33 (featuring a “Pre-installed M-Card”); SCIENTIFIC ATLANTA, IMPLEMENTING SEPARABLE SECURITY in a DBDS at 13, available at http://www.scientificatlanta.com/products/customers/images_training/752705-c%20implementing%20separable%20security%20in%20a%20dbds.pdf (explaining that set-top boxes with factory-installed CableCARDS are called “Separable Security Combination” boxes).

¹⁸ See, e.g., Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 3-13 (June 23, 2010).

¹⁹ See FEDERAL COMMUNICATIONS COMMISSION, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 51 (rel. March 16, 2010).

²⁰ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 18 FCC Rcd 7924, 7925-6, ¶ 4-5 (2003); *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6811-2, ¶ 34 (2005).

²¹ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 22 FCC Rcd 12024 (2007) (“*Two-way FNPRM*”).

²² See Letter from Joel Wiginton, Vice President and Senior Counsel, Sony Electronics Inc., and Kathryn A. Zachem, Vice President, Regulatory Affairs, Comcast Corporation to Monica Desai, Chief, Media Bureau, Federal Communications Commission at Attachment at 1 (June 10, 2008).

imposing unfair regulatory burdens on the cable industry.²³ The plan suggested that these changes could serve as an interim solution that will benefit consumers while the Commission considers broader changes to develop a retail market for navigation devices. After considering those recommendations, on April 21, 2010 the Commission adopted a *Fourth Further Notice of Proposed Rulemaking* (“FNPRM”)²⁴ seeking comment on proposed measures to remedy shortcomings in the existing CableCARD system. The Commission proposed five measures intended to remove the disparity between the treatment of consumers who choose to use a retail CableCARD-equipped video device and those who lease a cable provider’s video navigation box. In the FNPRM, we sought comment on proposals to (1) ensure that retail devices have comparable access to video programming that is prescheduled by the programming provider; (2) make CableCARD pricing and billing more transparent; (3) streamline CableCARD installations; (4) require cable operators to offer multi-stream CableCARDs; and (5) clarify certification requirements. In the FNPRM, we also proposed a rule change that would allow cable operators to substitute certain interfaces in lieu of the IEEE-1394 interface currently required on all high-definition set-top boxes, and proposed to define a baseline of functionality that such interfaces must meet. Finally, in order to encourage the cable industry’s transition to digital technology, the Commission proposed an exemption to the integration ban for all one-way devices that do not have digital video recording capabilities.

III. DISCUSSION

A. Reforming the CableCARD System

8. Based on the record before us, we conclude that modifications to our rules are necessary to improve the CableCARD regime and advance the retail market for cable navigation devices. We are sympathetic to concerns that we are adopting these rules while we consider a successor regime,²⁵ but we must keep in mind that CableCARD is a realized technology – consumer electronics manufacturers can build to and are building to the standard today. Until a successor technology is actually available, the Commission must strive to make the existing CableCARD standard work by adopting inexpensive, easily implemented changes that will significantly improve the user experience for retail CableCARD devices. Therefore, in this order we adopt rule changes that will (1) require cable operators to provide retail devices with access to switched-digital channels; (2) require cable operators to provide greater transparency in their CableCARD charges; (3) require cable operators to allow subscribers to self-install CableCARDs and require cable operators to inform their subscribers about this option; (4) require cable operators to provide multi-stream CableCARDs by default, unless a subscriber explicitly requests a single-stream CableCARD; and (5) clarify the testing requirements for CableCARD devices. Based on our examination of the record in this proceeding, we believe that these changes will be inexpensive to implement and will eliminate or reduce the disparity in the consumer experience between leased devices and retail devices, which has dampened enthusiasm for retail devices.

²³ See FEDERAL COMMUNICATIONS COMMISSION, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN 52 (rel. March 16, 2010).

²⁴ *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices and Compatibility between Cable Systems and Consumer Electronics Equipment*, 25 FCC Rcd 4303 (2010) (“FNPRM”).

²⁵ See *Video Device Competition; Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility between Cable Systems and Consumer Electronics Equipment*, 25 FCC Rcd 4275 (2010) (“NOI”). In the NOI, the Commission sought comment on a concept that is intended to develop a competitively neutral solution to navigation device compatibility.

1. Switched Digital Video

9. Switched Digital Video (“SDV”) is a method of delivering linear programming²⁶ that requires a set-top box to request specific channels from the cable head-end.²⁷ SDV allows cable providers to offer their services more efficiently, as channels occupy capacity on the system only if subscribers are viewing or recording them. Unfortunately, this can affect one-way retail CableCARD devices adversely because one-way devices are not capable of requesting the switched channels, and therefore subscribers with retail devices are unable to access programming provided using SDV. Certain cable operators that have deployed SDV offer their subscribers free “tuning adapters,” which are repurposed set-top boxes that allow TiVo and Moxi retail set-top boxes and certain home-theater PCs to access switched digital content. These cable operators have provided the tuning adapters voluntarily, as the Commission’s rules have not required cable operators to provide access to switched digital channels for one-way retail devices.²⁸

10. In the *FNPRM*, the Commission sought comment on whether this voluntary solution provides adequate support for retail navigation devices.²⁹ The Commission also sought comment on TiVo’s proposal to use an IP backchannel to request switched digital channels.³⁰ There was vigorous disagreement between commenters on this issue – certain commenters strongly supported maintaining the *status quo*, while others zealously advocated a rule that would require cable operators who use SDV to support retail devices through the use of an IP backchannel.

11. Commenters who support maintaining the voluntary, market-based tuning adapter solution argue that SDV benefits consumers and that any changes to the *status quo* could stifle deployment of SDV and its associated benefits.³¹ They assert that the tuning adapter solution works adequately, and that there is no evidence that an IP backchannel would work better than the tuning adapter solution.³² They also argue that it does not make sense to require the industry to develop and deploy an IP backchannel solution, which could be costly and discourage deployment of SDV,

²⁶ The term “linear programming” is generally understood to refer to video programming that is prescheduled by the programming provider. *Cf.* 47 U.S.C. § 522(12) (defining “interactive on-demand services” to exclude “services providing video programming prescheduled by the programming provider”).

²⁷ *See FNPRM*, 25 FCC Rcd at 4308-9, ¶ 14.

²⁸ *Oceanic Time Warner Cable, Cox Communications, et al.*, 24 FCC Rcd 8716, 8720-3, ¶¶ 9-15 (2009).

²⁹ *Id.*

³⁰ Under TiVo’s “IP-backchannel” proposal, a UDCP would be able to communicate with a cable headend using an IP connection to request a switched digital channel rather than via a USB connection to a tuning adapter directly connected to the retail device. *See* Letter from Matthew Zinn, Senior Vice President, General Counsel, Secretary & Chief Privacy Officer, TiVo, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission at 3 (Feb. 17, 2010) (citing Jeff Baumgartner, *RCN Makes TiVo Its Dominant DVR*, LIGHT READING (Aug. 4, 2009), available at http://www.lightreading.com/document.asp?doc_id=180071&site=cdn). The operator would be required to publish an application programming interface, or API, enabling the retail manufacturer to develop firmware that would allow its devices to request and keep alive individual SDV channels. If the retail device customer is not a subscriber to its cable operator’s high speed internet service, these IP requests would necessarily travel over the public Internet, triggering some of the cable operator’s concerns regarding security.

³¹ BendBroadband Reply at 4-6; BBT Comments at 15-16; Cisco Comments at 2; Cisco Reply at 2-4; Cox Comments at 6-11; Motorola Comments at 17-20; NCTA Comments at 36-47; NCTA Reply at 24-27; Time Warner Comments at 6-10; JSI Comments at 2-3; TIA Comments at 4; Verizon Comments at 2-5; Verizon Reply at 5.

³² *Id.*

particularly with the successor AllVid requirements on the horizon and the current availability of the cable industry's tru2way solution.³³ They argue the additional development time and resources necessary to implement an IP backchannel would be better allocated to AllVid development.³⁴ Certain commenters also assert that implementing a signaling backchannel over the public Internet would raise security and privacy concerns, including potential denial-of-service attacks, attacks that could provide unauthorized access to proprietary networks, and attacks that could result in theft of service and/or subscriber data.³⁵ Therefore, these commenters argue, the tuning adapter solution that has developed in the marketplace is the most pragmatic, effective way to ensure that retail devices can access switched channels, and the Commission does not need to adopt rules.

12. While several commenters assert that the tuning adapter solution works adequately,³⁶ others argue that consumers will not purchase retail CableCARD devices unless they are certain that they will be able to access all of the programming to which they subscribe.³⁷ Because the Commission's rules do not require operators to provide access by retail CableCARD devices to switched digital video channels, TiVo is concerned that cable operators could withdraw their current willingness to provide tuning adapters at no additional charge to the customer.³⁸ Furthermore, a number of cable subscribers indicate that they have trouble obtaining tuning adapters that work.³⁹ These commenters argue that the most effective way to provide retail CableCARD devices with access to switched-digital channels is

³³ Comcast Comments at 20; Comcast Reply at 20-22; Panasonic Comments at 5; Cisco comments at 6; Cisco Reply at 2-3.

³⁴ NCTA Reply at 27; Letter from Matthew Brill, Counsel to Time Warner Cable, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission at 6 (September 13, 2010).

³⁵ *See, e.g.*, Cisco Comments at 5, 15.

³⁶ Comcast Comments at 17. *See also* BendBroadband Reply at 4-6; BBT Comments at 15-16; Cisco Comments at 2; Cisco Reply at 2-4; Cox Comments at 6-11; Motorola Comments at 17-20; NCTA Comments at 36-47; NCTA Reply at 24-27; Time Warner Comments at 6-10; JSI Comments at 2-3; TIA Comments at 4; Verizon Comments at 2-5; Verizon Reply at 5.

³⁷ *See, e.g.*, TiVo Comments at 9-11.

³⁸ TiVo Comments at 8-10; TiVo Reply at 5-12.

³⁹ Craig Block Reply at 1; CEA Comments at 15-17; CEA Reply at 6-9; Daniel L. Flannery Comments at 1 ("My [tuning adapter] frequently fails to tune SDV channels and has had many complete outages that require calling TWC customer service, resulting in many hours of my time being wasted . . . Most of their customer service people barely know that [tuning adapters] exist, let alone any detailed information about them"); Brian McMullan Reply at 1 ("In nearly three months of use, I can still not receive the channels I pay for"); Wes Mills Reply at 1 ("As is the case with much of the CableCARD world, providers' representatives and installers are not well trained on the devices and not equipped to troubleshoot issues arising from the use of the devices."); Sayantan Nandi Reply at 1 ("The current Tuning Adaptors are power hungry, bulky, slow, and tend to fail. Setup is complicated, and there are many reports of consumers being denied channels they deserve due to poor provisioning by cable companies. I've had 2 of 5 TAs I have been issued fail in the last 18 months or so."); Public Knowledge Comments at 18-20; Scott Ratliff Reply at 1 ("The adapters have not been reliable and have required periodic restarts and support calls to have the adapter re-authorize . . . Problems with them can often lead to missed recording on my DVR"); TiVo Reply at 4-7; John Whittle Comments at 1 ("Over the last three days, the SDV system in the area of Los Angeles, West Valley, has failed on Saturday Evening, Sunday Evening and Monday Evening. The Tuning Adapter makes its call to the headend but no channel frequency is returned and the SDV 1 error is returned.").

through the use of an IP backchannel.⁴⁰ They assert that the IP-backchannel solution would solve problems that consumers experience with tuning adapters because it would not require additional, potentially unreliable, customer-premises hardware.⁴¹ Furthermore, they argue, the tuning adapter takes up space, is not energy efficient, and limits the ability to use all of the tuners on multi-tuner devices, thereby limiting the ability of multi-tuner devices to record more than two channels at once.⁴² TiVo also expresses concern that cable operators are misinforming subscribers that certain channels are not available on retail devices.⁴³ Finally, TiVo and CEA assert that the IP backchannel solution would be less expensive than tuning adapters in the long run.⁴⁴

13. We conclude that we should mandate SDV support for retail devices without specifying the technology that cable operators must use to ensure such compatibility. SDV is an innovative technology with a number of benefits, and we do not wish to discourage its deployment. The record is replete, however, with comments from consumers who have had negative experiences using tuning adapters to access switched digital channels on their retail CableCARD devices.⁴⁵ Both of the proposed solutions have significant benefits and drawbacks, and the Commission believes that with appropriate direction, cable operators will find the most efficient means of effectively supporting SDV. For example, the Commission recognizes that the economics of deploying an IP backchannel solution are different between those operators who have already or will soon deploy SDV, and those operators who will deploy the next generation of SDV hardware. The Commission does not wish to foreclose the possibility of an IP backchannel for those operators to whom it will add *de minimis* costs as the result of being included in future headend equipment. Conversely, for those operators who currently use SDV and have significant deployments of tuning adapters, the cost to retrofit TiVo's IP backchannel proposal may be prohibitive.⁴⁶

⁴⁰ Craig Block Reply at 1; CEA Comments at 15-17; CEA Reply at 6-9; Daniel L. Flannery Comments at 1; Brian McMullan Reply at 1; Wes Mills Reply at 1; Sayantan Nandi Reply at 1; Public Knowledge Comments at 18-20; Scott Ratliff Reply at 1; TiVo Reply at 4-7; John Whittle Comments at 1.

⁴¹ *Id.*

⁴² CEA Comments at 5; CEA Reply at 6-9; Sayantan Nandi Reply at 1; Public Knowledge Comments at 18-20; Scott Ratliff Reply at 1; TiVo Comments at 9-10; Bryan Moor Comments at 1.

⁴³ TiVo Comments at 9-10.

⁴⁴ CEA Reply at 7-9; TiVo Comments at 12-16; TiVo Reply at 7-12.

⁴⁵ *See, e.g.*, John Whittle Reply at 1; Craig Block Reply at 1; Brian McMullan Reply at 1; Wes Mills Reply at 1; Sayantan Nandi Reply at 1; Scott Ratliff Reply at 1; Jonathan Trudel Reply at 1; David Flannery Reply at 1. We did not receive any comments from consumers who approved of tuning adapters, although Cox Communications, Inc. and Cox Enterprises, Inc. did make an ex parte presentation in which they listed positive customer testimonials regarding tuning adapter installation. Letter from Natalie G. Roisman, Counsel to Cox Communications, Inc. and Cox Enterprises, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission at Attachment (July 28, 2010).

⁴⁶ Letter from Matthew Brill, Counsel to Time Warner Cable, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission at 5 (September 13, 2010) ("if the communications between the UDCP and TWC's video network proved unreliable, TWC could be forced to install proxy servers closer to the edge of its network, such as at various hubs—of which TWC has over a thousand."). TiVo estimates that each proxy server could cost between \$10,000 and \$25,000 dollars. TiVo Comments at 15. As NCTA highlights in its comments, tuning adapters are compatible with certain CableCARD-equipped computers as well:

Tuning Adapters are being used successfully today by customers not only with TiVo and Moxi DVRs but also with certain compatible personal computers. For example, AMD has released the ATI TV Wonder Digital Cable Tuner that, with an operator-supplied Tuning Adapter, enables consumers to access SDV cable programming on a personal computer with Windows Media

(continued...)

Further, the Commission does not presume that these are the only two means of supporting SDV, and expect that some operators may choose other options, such as in-home IP signaling, that provide additional benefits to consumers.⁴⁷ We do not foreclose any of these options so long as appropriate documentation is available to enable UDCPs to access SDV channels.

14. Subscribers must be able to use the devices they purchase at retail to access all of the linear channels that comprise the cable package they purchase. Providing retail navigation devices and leased navigation devices with equivalent access to linear programming at an equivalent service price is essential to a retail market for navigation devices.⁴⁸ We also want to avoid making deployment of SDV unnecessarily costly. While use of IP-backchannel would not require consumers to purchase additional equipment, we recognize that mandating this approach could be costly for some cable operators. Moreover, we note that operators currently provide tuning adapters at no charge to consumers.⁴⁹ Accordingly, pursuant to our authority under Section 629 of the Communications Act, we require cable operators to ensure that cable subscribers who use retail CableCARD navigation devices have satisfactory access to all linear channels, but we will not mandate a specific method by which cable operators must provide such access.⁵⁰ We believe that this rule change will address the security concerns raised about the IP-backchannel proposal, as our rule will not require a cable operator to adopt an approach that it believes is insecure. To address the problems with tuning adapters identified by commenters, the satisfactory access standard will require cable operators to ensure that retail devices are able to tune at least as many switched digital channels as that operator's most sophisticated operator-supplied set-top box or four simultaneous channels, whichever is greater.⁵¹ Further, the satisfactory access standard will require the ability to tune and maintain the desired channel as long as it is being watched or recorded, and to do so reliably. Furthermore, we prohibit cable operators from presenting their customers with misleading information regarding retail devices' ability to tune switched digital channels.⁵² We adopt these requirements pursuant to Section 629 because we conclude that SDV support for retail devices is

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Center. A leading expert on Windows Media Center reported last fall that Charter installed and activated a Tuning Adapter with his PC in about five minutes and that the experience was "totally easy."

NCTA Comments at 41; *see also* Cox Comments at 14. Furthermore, Ceton Corporation, a manufacturer of a CableCARD-compatible navigation device, indicates that its product "Supports Switched Digital Video." *See* Ceton Corporation, *Multi-Stream Tuner Cards by Ceton*, <http://www.cetonecorp.com/products.php>.

⁴⁷ We note that in the *NOI*, the Commission is specifically exploring solutions which would rely on in-home IP signaling to provide access to cable operator services. Many of the benefits of that approach, such as the ability to support multiple UDCPs from a single in-home device, the ability to locate the in-home device anywhere in the home, and the ability of the device to communicate via a simple, protocol-based standard, would be available if a cable operator were to use in-home IP-signaling for SDV support on retail devices.

⁴⁸ *See* TiVo Comments at 8, n.16.

⁴⁹ We note that cable operators have offered tuning adapters to their subscribers free of charge and have not generally imposed incremental costs, such as mandatory professional install fees, on switched digital support. *See, e.g.*, Comcast Comments at 19; Time Warner Cable Comments at 7-8; Cox Comments at 3.

⁵⁰ *See* Appendix B at 46 (adopting new Section 76.1205(b)(4)).

⁵¹ Cable operators have nine months to make necessary hardware or software upgrades in order to provide satisfactory access to switched digital channels.

⁵² *See* TiVo Comments at 10-11, Exhibit E (indicating that certain operators list channels as "Not Available on CableCARDS," without noting that tuning adapters allow for access to SDV channels). *See also* Appendix B at 47 (adopting new Section 76.1205(c)).

necessary to assure a retail market for navigation devices. We will continue to monitor the development of SDV and the access afforded to cable customers who use, or wish to use, retail navigation devices. If we find that customers who want to use retail set-top boxes do not have satisfactory and equivalent access to all of the linear channels that comprise the cable package to which they subscribe, we will revisit our decision here.

2. CableCARD Pricing and Billing

15. In the *FNPRM*, the Commission sought comment on a proposal to require cable operators to list the fee for their CableCARDS as a line item on subscribers' bills separate from their host devices. The Commission proposed this rule change as a means to inform customers about retail navigation device options and to enable them to compare the price of a retail device to the price for leasing a set-top box from their cable operator. The proposed rule also was intended to ensure that the price that subscribers pay for CableCARDS in retail devices is the same as the price that subscribers pay for CableCARDS that are affixed to leased devices. Proponents of the Commission's proposed rule suggest that separate billing will facilitate fair choice and promote competition, as a viable retail market depends on transparency,⁵³ while opponents argue that such billing would be difficult and expensive to implement, with no benefit to subscribers.⁵⁴ Proponents of the rule assert that Section 629 requires separate billing and prohibits cross-subsidization.⁵⁵ Opponents of the rule point to Section 629(f), which states that "Nothing in this section shall be construed as expanding" the Commission's authority under the Communications Act. Those commenters assert that the proposed rule would be an expansion of the Commission's authority under the statutory rate provision, Section 623, which allows cable operators to aggregate their equipment costs and charge a standard average rate across their footprints.⁵⁶

16. Public Knowledge argues that the proposed rule does not go far enough.⁵⁷ Public Knowledge suggests that in addition to requiring cable operators to separate the monthly fee for a CableCARD from the set-top box on a subscriber's bill, the Commission should also require cable operators to provide each subscriber with the aggregate amount the subscriber has spent on set-top box lease fees.⁵⁸ Additionally, Public Knowledge argues that cable operators should be required to notify subscribers about the retail options that are available to them.⁵⁹ In a similar vein, Montgomery County, Maryland suggests that the Commission allow state legislatures to adopt legislation that would require cable operators to sell the devices that they lease to ensure that consumers have more options to purchase navigation devices.⁶⁰

⁵³ CEA Comments at 10-11; CEA Reply at 4-6, 20-23; Nagravision Comments at 2; TiVo Comments at 16-18; TiVo Reply at 22-23.

⁵⁴ Verizon Comments at 2, 5-7; JSI Comments at 4; Time Warner Cable Comments at 13-15; NCTA Comments at 15-19; NCTA Reply at 9-11; Comcast Comments at 24-26; Comcast Reply at 17-19; Charter Comments at 1-3.

⁵⁵ Public Knowledge Comments at 10-12.

⁵⁶ NCTA Comments at 18-19; Comcast Comments at 25-26; Comcast Reply at 17-19. Furthermore, Verizon asserts that Section 623 does not apply to competitive cable providers, and that therefore any attempt to regulate the cost of equipment is inapplicable to Verizon. Verizon Comments at 6-7.

⁵⁷ Public Knowledge Comments at 10-12.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Montgomery County Reply at 3-4.

17. Opponents of the Commission's proposed billing rule assert that a separate billing requirement would only serve to confuse consumers and lead them to believe that their cable operators have added an extra fee to their bills.⁶¹ They also assert that this rule would arbitrarily burden subscribers who lease separated security devices as opposed to those who do not because currently all subscribers pay the same lease fee for a set-top box regardless of whether it has separated security.⁶² They argue that implementation of the billing rule would be costly for cable operators, as their billing systems are not designed to separate the cost of a CableCARD from the cost of the set-top box.⁶³ NCTA and Arris assert that the availability of this information will not affect the retail market because the cost of CableCARDS has no effect on the retail market for set-top boxes.⁶⁴

18. Despite their opposition to the proposed rule as written, NCTA and others are not opposed to the purposes behind the rule, which are to treat retail and leased devices equivalently and encourage pricing transparency.⁶⁵ As a compromise, NCTA has proposed that cable operators notify subscribers of the cost of CableCARDS on the operators' websites and yearly rate card notices.⁶⁶ NCTA asserts that its proposal would serve the same purpose as the Commission's proposed rule without imposing expensive and confusing billing burdens on cable operators.

19. We conclude that NCTA's compromise solution will inform consumers about CableCARD costs and retail options adequately without imposing unnecessary burdens on cable operators. Therefore, we adopt a requirement that cable operators prominently list the fee for their CableCARDS as a line item on their websites (readily accessible to all members of the public) and annual rate cards separate from their host devices, and provide such information orally or in writing at a subscriber's request. These CableCARD lease fees must be uniform across a cable system regardless of whether the CableCARD is used in a leased set-top box or a navigation device purchased at retail.⁶⁷ We are not convinced that NCTA's solution will ensure that cable operators are not subsidizing the costs of leased set-top boxes with service fees. Accordingly, we also adopt a rule that requires cable operators to reduce the price of packages that include set-top box rentals by the cost of a set-top box rental for customers who use retail devices, and prohibits cable operators from assessing service fees on consumer-owned devices that are not imposed on leased devices. These price reductions must reflect the portion of the package price that is reasonably allocable to the device lease fee. In the event that an interested party (including a consumer, local franchise authority, or device manufacturer) alleges a violation of this "reasonably allocable" standard, the Commission will consider in its evaluation whether the allocation is consistent with one or more of the following factors: (i) an allocation determination approved by a local, state, or federal government entity; (ii) the monthly lease fee as stated on the cable system rate card for the navigation device when offered by the cable operator separately from a bundled offer; and (iii) the actual cost of the navigation device amortized over a period of no more than 60 months.⁶⁸ These rule

⁶¹ Charter Comments at 3; JSI Comments at 4; Comcast Comments at 26; Comcast Reply at 18-19; NCTA Comments at 16-18; Time Warner Cable Comments at 13-15.

⁶² *Id.*

⁶³ JSI Comments at 4-5; NCTA Comments at 18-19.

⁶⁴ NCTA Reply at 9-11; Arris Comments at 4.

⁶⁵ *See, e.g.*, Charter Comments at 1-2; Comcast Comments at 26; NCTA Reply at 9; TiVo Reply at 22-23.

⁶⁶ NCTA Comments at 18-19; JSI Comments at 4-5.

⁶⁷ *See* Appendix B at 46 (adopting new Section 76.1205(b)(5); amending Section 76.1602(b)).

⁶⁸ *Id.* *See* Letter from Julie Kearney, Vice President, Regulatory Affairs, Consumer Electronics Association, to Marlene H. Dortch, Secretary, Federal Communications Commission (July 20, 2010) (suggesting that a 60 month (continued...))

changes are well within our statutory authority under Section 629.⁶⁹ Section 629 gives the Commission broad power to adopt regulations to assure the commercial availability of navigation devices and states that multichannel video programming distributors may lease their own devices, as long as “the system operator’s charges to consumers for such devices and equipment are separately stated and not subsidized by charges” for multichannel video programming service.⁷⁰ These minor rule changes will serve to ensure that cable operators are not subsidizing the costs of their set-top boxes via service charges and will serve to allow consumers to compare the costs involved in choosing between purchasing or leasing a navigation device. This prohibition on subsidies and increased transparency is vital to the continued development of a retail navigation device market, as it will allow subscribers to make informed economic decisions about whether they should purchase a navigation device at retail.

3. CableCARD Installations

20. In the *FNPRM*, the Commission expressed concern that CableCARD installation costs and policies may differ unjustifiably between retail devices and leased boxes. To address this situation, the Commission proposed requiring cable operators to allow subscribers to install CableCARDS in retail devices themselves if the cable operator allows its subscribers to self-install leased set-top boxes. Furthermore, the Commission proposed a rule with regard to professional installations that would require technicians to arrive with at least the number of CableCARDS requested by the customer.

21. Commenters who support adopting the proposed installation rule argue that individual users are more than capable of installing their own CableCARDS.⁷¹ According to these commenters, the installation consists of inserting a CableCARD and calling in to the cable operator to report a series of numbers that appear on an activation screen, which subscribers could easily do with basic instruction.⁷² Unfortunately, despite the apparent simplicity of installation, these individual subscribers comment that not all cable technicians are properly trained to install CableCARDS and they do not always arrive with functional CableCARDS; therefore it often takes several days and multiple installation appointments to get functional CableCARDS installed.⁷³ According to TiVo, “the premise of ‘plug and play’ was that a subscriber should be able to buy a device from a retailer, plug it into her cable connection, and have it work without the cable operator’s intervention;” therefore, TiVo argues, until individual subscribers have

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amortization would be a reasonable allocation for determining the value of equipment in bundles); Letter from Jonathan Friedman, Counsel, Comcast Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission at 1-2 (suggesting that allocation methods that have been approved by state taxing authorities would be reasonable).

⁶⁹ We reject Verizon’s argument that Section 623 restricts the Commission’s authority to impose pricing and billing rules in the context of this proceeding. 47 U.S.C. § 543. In adopting these rules, we are not relying on our authority under Section 623 but rather on our independent authority under Section 629. In addition, we take no position on Montgomery County, Maryland’s suggestion that we allow states to adopt legislation to ensure that consumers have options to purchase the navigation devices that they lease from cable operators. *See* Montgomery County Reply at 3-4; 47 U.S.C. § 549(f).

⁷⁰ 47 U.S.C. § 549(a).

⁷¹ Amaral Comments at 1; Chauncey Reply at 1; King Reply at 1; Ratliff Reply at 1.

⁷² Mills Reply at 1; Public Knowledge Comments at 13; TiVo Comments at 6.

⁷³ Chauncey Reply at 1; Mills Reply at 1; Ratliff reply at 1.

the option to self-install their own CableCARDS, subscribers will not be able to purchase devices that are truly “plug and play.”⁷⁴

22. NCTA and CEA advocate a modification to the proposed rule that would require cable operators to allow self-installation of CableCARDS on any device for which the manufacturer provides detailed, step-by-step installation instructions.⁷⁵ Several major cable operators, including Charter and Comcast, support the self-installation option so long as adequate installation instructions are provided by the manufacturer.⁷⁶ Likewise, manufacturers such as Panasonic support the provision of web-based installation walkthroughs as one means of fulfilling the goal of making step-by-step instructions available to consumers seeking to self-install CableCARDS.⁷⁷ The few cable operator proponents do, however, request a four- to six-month phase-in period before this rule takes effect, during which time they will develop and implement necessary internal procedures and training that reflect the new policy.⁷⁸

23. Commenters including CEA/CERC and Panasonic suggest that cable operators should be required to permit retail outlets to sell CableCARDS and to assist in the installation at the point of sale.⁷⁹ Commenters from the cable industry were not necessarily opposed to this option, but they did note that allowing retail stores to install CableCARDS at the point of sale would introduce certain business, technical, and operational hurdles, such as identifying the encryption technology that a cable operator uses in the specific subscriber’s geographic location.⁸⁰ Therefore, they suggest that the Commission encourage industry negotiations to explore this option, but they oppose adoption of a rule that mandates retail installation.⁸¹ TiVo, however, supports this proposal as one of the few means of fulfilling the true purpose of the CableCARD requirement, which is to encourage a competitive market for retail devices that can be purchased, taken home, and installed without the cable operator’s intervention.⁸²

24. In addition to its other proposals, CEA seeks better enforcement of the CableCARD rules, including the new proposed installation rule.⁸³ CEA suggests that empowering local franchising authorities to enforce the CableCARD rules would encourage cable operators to comply with the rules.⁸⁴

25. Time Warner Cable and Verizon assert that cable operators are best equipped to determine whether customers should be allowed to install their own CableCARDS.⁸⁵ They argue that the CableCARD installation process is not straightforward, that consumers may not be equipped to install

⁷⁴ Tivo Reply at 19.

⁷⁵ NCTA Comments at 20, Reply at 14; CEA Comments at 4-5, 7.

⁷⁶ CEA Reply at 3; Charter Comments at 4-5; Comcast Comments at 21-23; Cox Comments at 15-16; NCTA Comments at 20-21.

⁷⁷ Panasonic at 6.

⁷⁸ Charter Comments at 4-5; Comcast Reply at 15-16.

⁷⁹ CEA Comments at 6-8; Panasonic Comments at 6.

⁸⁰ Comcast Reply at 3, 15-17; NCTA Reply at 14-15.

⁸¹ *See, e.g.*, Comcast Reply at 3, 16-17.

⁸² TiVo Reply at 19.

⁸³ CEA Comments at 8.

⁸⁴ *Id.*

⁸⁵ Time Warner Cable Comments at 11-12; Verizon Comments at 9-10; Verizon Reply at 6.

such equipment, and that the installations are not overly expensive. Verizon further argues that customers have shown no real demand to perform self-installation.⁸⁶ Similarly, Cox submits that the low number of interested consumers does not justify development of costly support mechanisms for those who wish to self-install, unless the customer support burden shifts entirely to retail device manufacturers.⁸⁷ Verizon also expresses skepticism that the Commission has authority to adopt such a rule.⁸⁸

26. We conclude that the best means of assuring the development of a retail market for navigation devices is to require cable operators to allow subscribers to self-install CableCARDS. We believe cable operators should have time to train staff and develop more robust customer support infrastructures and procedures, and provide nine months to comply for any operators that allow subscribers on any of their systems to self-install any cable modems⁸⁹ or leased set-top boxes.⁹⁰ We are not persuaded by arguments that cable operators could not support activation of retail CableCARD devices within this reasonable transition period. However, we are concerned that a cable operator that does not permit self-installation of any equipment that attaches to its network may not have the customer support infrastructures in place to handle self-installations and may need a longer transition period.⁹¹ Therefore, we will allow cable operators that do not have any self-installation support in place twelve months to phase in this self-installation requirement.⁹² We also require cable operators to inform their subscribers about the self-installation option when they request CableCARDS.⁹³

27. With respect to professional installations, we adopt our proposed rule requiring technicians to arrive with at least the number of CableCARDS requested by the customer.⁹⁴ We require cable operators to make good faith efforts to ensure that all CableCARDS delivered to customers or brought to professional installation appointments are in good working condition and compatible with their customers' devices, and to allow subscribers to request CableCARDS using the same methods that subscribers can use to request leased set-top boxes.⁹⁵ These rules are intended to solve the complaints in

⁸⁶ Verizon Comments at 10.

⁸⁷ Cox Comments at 15-16.

⁸⁸ Verizon Comments at 10.

⁸⁹ Cable modem installations involve steps that are substantially similar to CableCARD installation steps. *See, e.g.,* Cisco, Modems/Gateways FAQs - Support, *I bought a Cisco/Scientific Atlanta cable modem, connected all the cables myself, now how do I access the Internet?*, http://www.cisco.com/web/consumer/support/prod_fa_q_modems.html.

⁹⁰ NCTA Reports that nine out of the ten largest incumbent cable operators allow self-installation of some set-top boxes, and the tenth cable operator plans to do so beginning in 2010. *See* Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Eloise Gore, Acting Legal Advisor, Office of Commissioner Mignon Clyburn, Federal Communications Commission at 1 (Oct. 6, 2010).

⁹¹ *Cf.* Cox Comments at 15-16; Charter Comments at 4-5 (claiming that it could be costly to support CableCARD self-installation).

⁹² *See* Appendix B at 46 (adopting new Section 76.1205(b)(1)).

⁹³ *See id.*

⁹⁴ *See* Appendix B at 46 (adopting new Section 76.1205(b)(3)).

⁹⁵ *See id.* These requirements pertaining to professional installations remain relevant now and in the future. Notwithstanding our adoption of the requirement for cable operators to allow customers to self-install CableCARDS, some cable operators will continue to provide professional installations for those customers who request professional installation and during the time period before the self-installation requirement takes effect.

the record that professional CableCARD installations often require multiple appointments.⁹⁶ We believe that requiring cable technicians to have CableCARDS in good working condition on hand when they are requested and allowing subscribers to self-install CableCARDS will decrease the number of required appointments dramatically. To address Time Warner Cable and Verizon's concerns that subscribers may not be properly equipped to self-install a CableCARD,⁹⁷ our self-installation rule will apply only where device manufacturers or vendors provide detailed, device-specific instructions on how to install a CableCARD and the manufacturer's or vendor's toll-free telephone number within the packaging of the device and on the manufacturer's or vendor's website.⁹⁸ At this time we will not adopt a rule requiring retail installation of CableCARDS; however, since devices will now contain instructions from manufacturers or vendors on self-installation and because such an action will decrease the burden on the cable providers, we encourage⁹⁹ cable operators and consumer electronics retailers to reach agreement through continued private negotiations to achieve this type of consumer-friendly retail option.

28. In addition to empowering cable subscribers to install CableCARDS, we will also make it easier for consumers to file complaints relating to cable customer premises equipment (including CableCARDS, tuning adapters, and set-top boxes) with the Commission by adding a specific reference to CableCARDS and other customer premises equipment to the process for filing complaints on our website.¹⁰⁰ If a cable operator chooses to provide satisfactory access to SDV channels for retail devices by means of customer-premises equipment such as a tuning adapter, this process will encompass complaints relating to such equipment as well as complaints relating to CableCARDS. We will strictly enforce our navigation device rules in order to ensure proper support for CableCARD devices. We conclude that this streamlined complaint process makes CEA's suggestion that the Commission provide local franchising authorities with the authority to enforce the CableCARD rules unnecessary, and will allow for more consistent enforcement of our CableCARD rules nationwide. In addition, we will develop new consumer education materials specifically discussing the availability of cable boxes at retail as an alternative to leasing a cable box from the cable operator. Within the next few weeks, these materials will be available on our website and will be provided by our call center to those customers who lack web access.

29. The changes we adopt herein will improve the consumer experience substantially, as cable subscribers will no longer have to schedule multiple installation appointments for CableCARD installations. Furthermore, these rule changes will place only a *de minimis* burden on cable operators, because the device manufacturer's or vendor's self-installation instructions will include the manufacturer's or vendor's toll-free telephone number directing customer questions to the manufacturer or vendor and not to the cable operator. We disagree with Verizon's assertion that the Commission does not have the authority to adopt such a rule, as we believe that this rule falls squarely within our authority under Section 629. The need to schedule multiple installation appointments unquestionably is an

⁹⁶ Farley Padron Comments at 1; Brian Charbonneau Comments at 1; Kristopher King Reply at 1; Wes Mills Reply at 1; Letter from Christopher Cupler to Federal Communications Commission at 1-2 (Aug. 14, 2010); Jesus M. Rodriguez Ex Parte filing at 1-2 (July 12, 2010).

⁹⁷ Commenters agreed that Moxi and TiVo each provide instructions that would satisfy this requirement. See Arris Comments at 3; NCTA Reply at 14. See also Arris Inc., Moxi HD DVR Quick Start Guide available at <http://moxi.com/us/support/MC4R/QuickStartGuide.pdf>; TiVo Inc., CableCARD Setup Wizard, <http://www.tivo.com/setupandsupport/cablecard-wizard/index.html>.

⁹⁸ See Appendix B at 46 (adopting new Section 76.1205(b)(1)(A)).

⁹⁹ See NCTA Reply at 14-15.

¹⁰⁰ See <http://esupport.fcc.gov/complaints.htm?sid=&id=d1e650>.

impediment to realizing a competitive retail market for navigation devices, and the record is replete with comments from frustrated consumers who have had to schedule multiple appointments with technicians due to CableCARD installation problems.¹⁰¹ We believe that Congress's intent in adopting Section 629 was to ensure that cable operators treat retail navigation devices in the same manner that they treat leased navigation devices.¹⁰² Accordingly, we believe that we have clear statutory authority under Section 629 to adopt this self-installation rule.

4. Multi-stream CableCARDS

30. A Multi-stream CableCARD is a single CableCARD that is capable of decrypting multiple channels, thereby allowing consumers to record one channel while simultaneously watching another channel. Original CableCARDS were only capable of decrypting a single stream, therefore requiring devices with multiple tuners, such as most digital video recorders, to include two CableCARD slots. With the release of the Multi-stream CableCARD Interface Specification in 2005, device manufacturers obtained the ability to receive up to six program streams through a single CableCARD.¹⁰³ Multi-stream CableCARDS, now called M-Cards, can also be used by older devices that had been designed for single-stream CableCARDS. Operators began deploying M-Cards shortly after the adoption of the Multi-stream CableCARD Interface Specification,¹⁰⁴ and today retail devices often require them.¹⁰⁵ In the *FNPRM*, the Commission proposed requiring cable operators to offer M-Cards upon request, to reduce the equipment fees paid by subscribers by enabling them to use only one CableCARD per device rather than two or more.¹⁰⁶

31. Commenters were generally supportive of the proposed rule, though numerous commenters suggested the Commission require the provisioning of M-Cards by default, rather than on request. TiVo, Public Knowledge, and CEA all explicitly suggested this approach.¹⁰⁷ Arris and Tivo note that all leased set-top boxes include M-Cards, and that newer retail devices require M-Cards to function properly.¹⁰⁸ They further claim that the record demonstrates that retail devices are left to use recycled single-stream cards that may not work, while leased set-top boxes are outfitted with new, functioning M-Cards. NCTA also states they do not object to requiring cable operators to provide an M-Card to any subscriber who requests one, though they assert that certain devices work better with single-stream

¹⁰¹ See, e.g., Letter from Tim Petlock to Marlene H. Dortch, Secretary, Federal Communications Commission at 1-2 (Aug. 22, 2010); Farley Padron Comments at 1; Brian Charbonneau Comments at 1; Kristopher King Comments at 1; Wes Mills Comments at 1.

¹⁰² Cf. 47 U.S.C. § 549(a) (encouraging the Commission to adopt regulations to assure the commercial availability of navigation devices without prohibiting cable operators from leasing their own devices); S. REP. 104-230, at 181 (1996) (Conf. Rep.) ("One purpose of this section is to help ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator.").

¹⁰³ See *Multi-Stream CableCARD Interface, OC-SP-MC-IF-C01-050331*, OpenCable Specifications (Mar. 31, 2005). Available at <http://www.cablelabs.com/opencable/downloads/specs/OC-SP-MC-IF-C01-050331.pdf>.

¹⁰⁴ Comcast Comments at 24.

¹⁰⁵ Arris Comments at 3, Tivo Comments at 5.

¹⁰⁶ See *FNPRM*, 25 FCC Rcd at 4309-10, ¶ 17.

¹⁰⁷ TiVo Comments at 6, Public Knowledge, et al, Comments at 15, CEA Reply at 3-4.

¹⁰⁸ Arris Comments at 3; TiVo Comments at 5.

CableCARDS, and therefore cable operators should also have the discretion to deploy them to their subscribers.¹⁰⁹

32. Only Verizon and John Staurulakis, Inc. assert that the Commission should not require cable operators to deploy M-Cards. They assert that such a requirement would be costly and unnecessary because so few subscribers actually use CableCARDS.¹¹⁰ Verizon further states that the marketplace is already working to increase the availability of M-Cards for those few subscribers.¹¹¹ Comcast goes further, stating that M-Cards have been widely used since 2007, and cable operators have sufficient supplies of multi-stream CableCARDS to meet customer demand for them.¹¹² NCTA also suggests that the Commission adopt the multi-stream CableCARD rules, which would test for compatibility between UDCPs and M-Cards, that NCTA and the CE industry proposed in 2006.¹¹³

33. We conclude that the best step we can take in this regard to assure the development of a retail market for navigation devices is to require cable operators to provide multi-stream CableCARDS by default, unless a subscriber expressly requests a single-stream CableCARD.¹¹⁴ All new devices require multi-stream CableCARDS, and multi-stream CableCARDS have been standard equipment since 2007. Therefore, requiring cable operators to provide multi-stream CableCARDS by default will conform more closely to the concept of common reliance, provide improved customer experience, and impose little, if any, costs on the industry, as our examination of the record indicates that CableCARD manufacturers are no longer making single stream CableCARDS to sell to cable operators.¹¹⁵ We also adopt the multi-stream CableCARD rules that NCTA and the CE industry proposed in 2006, as they are necessary to update our rules to conform with the current state of CableCARD testing procedures.¹¹⁶

5. CableCARD Device Certification

34. In the *FNPRM*, the Commission proposed a rule change intended to streamline the process of CableCARD device certification. The proposed rule would prohibit CableLabs or other qualified testing facilities from refusing to certify Unidirectional Digital Cable Products for any reason other than a failure to comply with a device conformance checklist referenced in the Commission's rules.¹¹⁷ The Commission proposed the rule change based on complaints regarding the cost, complexity,

¹⁰⁹ NCTA Comments at 21, NCTA Reply at 15.

¹¹⁰ Verizon Comments at 9; JSI Comments at 4.

¹¹¹ Verizon Comments at 9.

¹¹² Comcast Comments at 24; NCTA Comments at 21.

¹¹³ *Id.* at 22 (citing Letter from Judson Cary, Deputy General Counsel, CableLabs, to Marlene H. Dortch, Secretary, Federal Communications Commission (Nov. 13, 2006) (recommending changes to the Commission's rules to reference updated multi-stream CableCARD test suites)).

¹¹⁴ *See* Appendix B at 46 (adopting new Section 76.1205(b)(2)).

¹¹⁵ Comcast Comments at 24. Given that single stream CableCARDS are no longer manufactured, we disagree with Verizon and John Staurulakis, Inc.'s arguments that this requirement will impose burdensome costs on cable operators.

¹¹⁶ *See* Appendix B at 42-44 (amending Sections 15.38(c); 15.123(c)(5)).

¹¹⁷ *FNPRM*, 25 FCC Rcd at 4310, ¶ 18. The conformance checklists referenced in the Commission's rules ensure that the devices are compatible with CableCARDS and do not circumvent content encoding. *See* 47 C.F.R. § 15.123.

and restrictiveness of device certification.¹¹⁸ The Commission also committed to “consider any other proposed solution to streamline the CableCARD certification process to facilitate the introduction of retail navigation devices.”¹¹⁹

35. Comments regarding CableCARD device certification indicate that the proposed rule would simply codify the CableCARD certification process as it exists today.¹²⁰ No commenter opposes the proposed rule, although certain commenters argue that the proposed rule would not do enough to protect device manufacturers.¹²¹ In addition, certain commenters argue that the proposed device certification rule is not rigorous enough to assure a competitive device market. Specifically, CEA and Public Knowledge each encourage the Commission to extend the device certification rule to apply to CableCARD-compatible computers and computer peripheral devices and to limit the terms that CableLabs may dictate in licensing agreements.¹²² They assert that these steps will allow start-up companies like SageTV to develop their devices, and that the proposed rule will not be effective without this extension. Indeed, NCTA and MPAA acknowledge that the Commission’s proposed rule would have no effect on the SageTV certification problems that the Commission highlighted in the *FNPRM*.¹²³

36. In a similar vein, IPCO and Nagravision encourage the Commission to streamline the certification process for the CableCARD separated security modules, as the Commission does not have a rule that prescribes a certification process for the CableCARD itself.¹²⁴ They assert that CableLabs has delayed certification of competitive separated security modules, which limits the companies’ ability to develop affordable whole-system solutions to sell to cable operators. They reason that, if device manufacturers can manufacture and test their own CableCARDS in conjunction with their retail devices, they will be able to develop products more rapidly.

37. We conclude that the best step we can take in this regard to carry out our statutory mandate under Section 629 is to (i) modify our rules to reflect updated testing procedures,¹²⁵ and (ii) adopt the proposed rule that prohibits CableLabs or other qualified testing facilities from refusing to certify UDCPs for any reason other than a failure to comply with the conformance checklists referenced

¹¹⁸ *Id.* In the *FNPRM*, the Commission cited comments that complained of CableLabs requiring tru2way devices to include a “walled garden” using a separate interface for navigating cable services from the other services that the retail device navigates. *Id.* at n.45. Commenters have also raised other issues related to CableCARD licensing agreements. For example, CEA criticizes the CableCARD Host Interface Licensing Agreement as unnecessarily vague because it “still permits CableLabs to impose new certification requirements whenever it deems them ‘critical’ to preventing ‘harm to the network,’ not limited to electronic or physical harm.” CEA Comments at 13.

¹¹⁹ *Id.*

¹²⁰ Arris Comments at 2-3; MPAA Comments at 6-7; NCTA Comments at 23-26.

¹²¹ National Cable and Telecommunications Association’s Opposition to Petitions for Reconsideration and Notice of Joint Proposal for Improved Testing Rules in CS Docket No. 97-80, Exhibit A, Agreement Concerning Equivalent ATP, March 10, 2004.

¹²² CEA Comments at 12-14.

¹²³ MPAA Comments at 6; NCTA Comments at 23.

¹²⁴ IPCO Comments at 6-8; Nagravision Comments at 2.

¹²⁵ See Appendix B at 42-44 (amending Section 15.123(c)); NCTA Comments at 25-6 (citing National Cable and Telecommunications Association’s Opposition to Petitions for Reconsideration and Notice of Joint Proposal for Improved Testing Rules in CS Docket No. 97-80, Exhibit A, Agreement Concerning Equivalent ATP, March 10, 2004).

in our current rules.¹²⁶ These rule changes should encourage navigation device manufacturers to build competitive devices by eliminating unnecessary delays and costs associated with device testing, while continuing to recognize the importance of protecting cable networks and service. Based on the comments we have received about the certification process, we believe that these rule changes do little more than codify the certification process as it exists today.¹²⁷ Comments reflect that while the certification process is costly, CableLabs's device testing is conducted in a professional manner and is important to ensure that CableCARD devices work properly.¹²⁸ CEA claims generally, however, that certain CableCARD licensing terms may go beyond what is allowed under Sections 76.1201 and 76.1204 of our rules.¹²⁹ They assert that these licensing terms limit innovation.¹³⁰ To the extent that any interested party has concerns that an aspect of the CableCard licensing regime violates Sections 76.1201 through 76.1204 of the Commission's rules,¹³¹ that party may allege a specific violation of the Commission's rules pursuant to Section 76.7 of our rules.¹³²

38. We decline to adopt IPCO and Nagravision's proposal to extend certification rules to the CableCARD security modules by dictating the specific testing procedures that CableLabs must use to certify CableCARD security modules. CableCARDS are an important part of protecting signal theft and protecting cable networks. Section 629(b) prohibits the Commission from adopting regulations that would jeopardize the security of cable systems or interfere with a cable operator's right to prevent theft of service.¹³³ Therefore, we believe that it would be prudent to defer to CableLabs's policies on certifying whether the CableCARDS themselves, which are the lynchpins of the conditional access scheme, are robust enough to protect cable systems and prevent theft of service.

¹²⁶ See Appendix B at 42-44 (amending Section 15.123(c)).

¹²⁷ MPAA Comments at 6; NCTA Comments at 23.

¹²⁸ Letter from Gary Hammer, President and CEO, Ceton Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission at 2 (April 8, 2010) ("CableLabs goes to extremes to be impartial and Ceton has always felt on an equal footing with larger more established hardware manufacturers with regards to access to information, test procedures and equipment, and resolution of specification questions and issues. CableLabs' policies and procedures for changes to specifications are well established and fair; balancing manufacturer and consumer interests with cable provider network operational and security constraints."); Arris Comments at 2-3 ("We have found the certification processes to be fair and reasonable, and CableLabs staff to be professional.").

¹²⁹ CEA Comments at 12-14.

¹³⁰ *Id.*

¹³¹ 47 C.F.R. §§ 76.1201-76.1204.

¹³² 47 C.F.R. § 76.7; see *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 15 FCC Rcd 18199, 18211, ¶ 29, n.71 ("Parties may present such concerns pursuant to Section 76.7 of the Commission's rules, 47 C.F.R. § 76.7. The Commission will review only those terms of DFAST licenses that a complainant alleges violate a specific navigation devices rule."); 47 C.F.R. §§ 76.1201-76.1204; See also *Plug and Play Order*, 18 FCC Rcd at 20918-20, ¶¶ 76-79; cf. *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 15 FCC Rcd 18199, 18212, ¶¶ 27-28, 31 (2000) ("Anecdotal evidence supplied to the Commission suggests that at least some content providers require the same level of copy protection, or will require the same level of copy protection upon the termination of existing licenses, with regard to MSO-provided devices as they do commercially available devices. Should additional evidence indicate that content providers are requiring disparate measures of copy protection from different industry segments, the Commission will take appropriate action.").

¹³³ 47 U.S.C. § 549(b); see also 47 C.F.R. §§ 76.1201, 76.1202.

B. Interface Requirements

39. The Commission's rules require cable operators to include an IEEE 1394 interface on all high-definition set-top boxes that they acquire for distribution to customers.¹³⁴ IEEE 1394, also known as Firewire, is an external serial data connection that allows for audio and video data transfers.¹³⁵ The Commission adopted a requirement from the MOU to provide an IEEE 1394 interface on all high-definition set-top boxes as a means of enabling a market for devices which interact with the operator-supplied set-top box.¹³⁶ In the *FNPRM*, the Commission proposed to give cable operators greater flexibility in deciding which type of interface to include on the set-top boxes that they lease. Set-top box manufacturers and cable operators suggested that alternative interfaces could perform the same functions and have wider consumer adoption than the IEEE 1394 interface.¹³⁷ The Commission also proposed to clarify that operators must enable bi-directional communication over these interfaces. The proposed clarification would require the interfaces to be able to receive remote-control commands from a connected device and deliver video in any industry-standard format to ensure that video made available over these interfaces can be received and displayed by devices manufactured by unaffiliated manufacturers (*i.e.*, manufacturers not owned by or under license of the leased set-top box vendor or cable operator) and sold at retail.¹³⁸ The record generally supported replacing the IEEE-1394 interface requirement with a rule that would instead require cable operators to include an IP-based connection on all high-definition set-top boxes that they acquire for distribution to customers.¹³⁹ The commenters also agreed that the Commission does not need to define the physical interface (e.g., IEEE 1394, Ethernet, Wi-Fi, or MoCA) used to transfer the IP data. With respect to functionality, commenters disagreed on whether the Commission should set a baseline for functionality of that interface.

40. Certain commenters suggested that the Commission should adopt baseline standards to define a "functional" IP connection on a set-top box. Various industry associations have developed suites of standards that include functionality we might rely on. For example, Panasonic suggested that the Commission require that the IP connection pass through "OpenCable Host Thin Chassis Device" remote commands. OpenCable, branded for consumers as tru2way, was developed by CableLabs, is a set of standards defining a common interface for supporting interactive cable services. As the full implementation, branded for consumers as tru2way, has seen limited adoption in retail devices, the Host Thin Chassis Device standard was developed to provide reduced costs while simultaneously enabling two-way communication with CableCARDS. Among the component parts of the Host Thin Chassis

¹³⁴ 47 C.F.R. § 76.640(b)(4)(ii). On June 18, 2010, the Media Bureau granted a waiver of this rule for all set-top boxes that include an IP-based interface pending the outcome of this rulemaking. *Intel Corporation, Motorola, Inc., and TiVo, Inc Requests for Waiver of Section 76.640(b)(4)(ii) of the Commission's Rules*, DA 10-1094 (MB rel. June 18, 2010).

¹³⁵ See 1394 Trade Association, *What Is Firewire?*, <http://www.1394ta.org/consumers/WhatIsFireWire.html> (last visited Sept. 16, 2010).

¹³⁶ *Plug and Play Order*, 18 FCC Rcd at 20896-7, ¶ 12.

¹³⁷ *FNPRM*, 25 FCC Rcd at 4311, ¶ 19-20.

¹³⁸ *Id.* at 4311, ¶ 21

¹³⁹ CEA Comments at 19-22; NCTA Comments at 26-36. Public Knowledge suggested that the connection must be robust enough to handle a high definition stream. Public Knowledge Comments at 17. IEEE-1394 is capable of carrying IP data, so cable operators could deploy devices with IEEE-1394 outputs, but the modified rule would allow them to deploy devices with Ethernet, Wi-Fi, MoCA or any other IP-based physical interface to fulfill the interface requirement.

Device standard are specifications for passing remote control commands entered with the TV remote control through to the set-top box.¹⁴⁰

41. CEA and the Digital Living Network Alliance (“DLNA”) each suggest that the Commission require that devices follow the DLNA guidelines.¹⁴¹ DLNA standards have been or are being developed to enable widespread network-based connectivity for a wide variety of devices, from handheld viewers to media servers. This focus on broad interoperability has resulted in standards which permit the addition or subtraction of various functional components, including remote control commands and content formats.¹⁴² Three consumers suggested that the Commission require that the interfaces pass through closed captioning data.¹⁴³ The 1394 Trade Association and Texas Instruments commented that each leased set-top box should be required to play back any video that is sent to it over an IEEE 1394 interface.¹⁴⁴

42. Comcast, Verizon, and NCTA each argue that defining “functional” would put a large burden on cable operators. They assert that standards organizations are still working to define standards for functionality over IP-based connections, and that cable operators could not comply with a functionality requirement in the near future.¹⁴⁵ They assure the Commission that the market will determine the specific type of functionality that consumers desire, and therefore urge the Commission not to lock operators into a certain defined set of functions, lest the Commission make the same mistakes it made with regard to the IEEE 1394 interface requirement.

43. We conclude that the best step we can take in this regard to fulfill our statutory mandate under Section 629 is to modify our interface rule to require cable operators to include an IP-based interface on all two-way high-definition set-top boxes that they acquire for distribution to customers without specifying a physical interface.¹⁴⁶ IP has overwhelming marketplace support and serves the same purpose that our IEEE 1394 connection requirement was intended to serve.¹⁴⁷ We agree with commenters that the method of physical transport (e.g., Ethernet, Wi-Fi, MoCA, or IP implemented over IEEE 1394) is not relevant in this situation, as we predict based on our examination of the record in this proceeding

¹⁴⁰ See OpenCable Host Thin Chassis Device Core Functional Requirements, OC-SP-HOSTTC-CFR-I01-100122, CableLabs Specification *available at* <http://www.cablelabs.com/specifications/OC-SP-HOSTTC-CFR-I01-100122.pdf>.

¹⁴¹ CEA Comments at 19-22; DLNA Comments at 3-5. CEA also urges the Commission to require MPEG-2 and MPEG-4/h.264 encoding for the video. CEA Comments at 22.

¹⁴² See Digital Living Network Alliance, DLNA Guidelines, Vol. 1-2 (2009).

¹⁴³ Goldberg Comments at 1; Laflin Comments at 1; Vickery Comments at 1.

¹⁴⁴ 1394 TA Comments at 3, Texas Instruments Comments at 5.

¹⁴⁵ Comcast Reply at 2-3.

¹⁴⁶ See Appendix B at 45 (amending Section 76.640(b)(4)(ii)).

¹⁴⁷ See Accenture, Consumer Electronics Products and Services Usage Report, *available at* http://www.accenture.com/NR/rdonlyres/040BE0BE-1FE5-45DD-9791-AC1D40A45A2C/0/Accenture_211008_DL_Survey_09_Media_Deck_V09.pdf; Parks Associates, “Connected Consumer Electronics: Linking Premium Applications and Content Across Devices,” presentation to Connections Summit June 2009, *available at* <http://www.parksassociates.com/events/connections/summit/2009/agenda/slides/Summit09-ConnectedCE.pdf>; DLNA Overview and Vision Whitepaper (2007) at 2, *available at* http://www.dlna.org/news/DLNA_white_paper.pdf.

that consumers will use network adapters to choose the physical transport method that they prefer for networking their devices, in furtherance of the goals of Section 629.

44. Contrary to Comcast, Verizon and NCTA's assertions, we believe that it is important to define a baseline of functionality to ensure that consumers who network their devices and device manufacturers can rely on networked devices' ability to communicate with leased set-top boxes. However, as with the physical interface itself, we find that it is appropriate, at this time, to refrain from specifying the exact manner in which this baseline of functionality is to be implemented. Accordingly, we modify our rules to require that the IP-based connection deliver the video in a recordable format (*e.g.*, MPEG-2, MPEG-4, h.264), and pass through closed captioning data in a standard format.¹⁴⁸ We also believe more advanced functionalities are necessary to provide a foundation for a retail market of navigation devices that are connected to leased set-top boxes with limited capabilities.¹⁴⁹ Those functionalities include service discovery, video transport, and remote control command pass-through standards for home networking. While these functionalities may exist in some form today,¹⁵⁰ there is considerable work ongoing in industry standard bodies to provide those functionalities in a manner designed for IP-based and home network solutions. We, therefore, do not mandate that these additional functionalities be supported by cable operators immediately. We do, however, wish to ensure that consumers benefit from these additional functionalities in a timely manner, and require operators to provide these additional functionalities by December 1, 2012, but do not mandate a particular means by which these functionalities are to be provided.¹⁵¹

C. Promoting Cable's Digital Transition

45. The integration ban, which went into effect in 2007, is designed to support the market for retail navigation devices by creating an incentive for cable operators to fully support CableCARDS, drive costs down through economies of scale, and encourage cable operators to strive to improve and maintain the CableCARD system.¹⁵² In the *FNPRM*, the Commission proposed to allow operators to place into

¹⁴⁸ The President recently signed the Equal Access to 21st Century Communications Act, which reinstates the Commission's Video Description rules and extends the Commission's authority to adopt closed captioning rules. We encourage interested parties to familiarize themselves with that Act and implementing rulemakings, as they may have an effect on functionality requirements of this IP-based connection. Equal Access to 21st Century Communications Act, S. 3304, S.3828, 111th Cong. (2010).

¹⁵⁰ See *e.g.*, Remote Control Command Pass-through Standard for Home Networking, CEA-931-C, Consumer Electronics Association (2007).

¹⁵¹ While we believe this additional time is more than sufficient to complete any necessary standard-setting work, and address implementation, testing and deployment issues, we recognize that standard setting procedures can be complex and resource intensive. Should the Commission's predictions with respect to finalization of appropriate standards prove inaccurate, we would entertain reasonable requests for extensions as long as cable operators demonstrate good faith efforts to work towards these functionalities.

¹⁵² *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6794, ¶ 2 (2005) ("[C]ommon reliance by cable operators on the same security technology ... that consumer electronics manufacturers must employ in developing competitive navigation devices will help attain the goals of Section 629 of the [Telecommunications] Act."). See also *First Report and Order*, 13 FCC Rcd at 14803. (first extended by *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 18 FCC Rcd 7924, 7926, ¶ 4 (2003); later extended by *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6810, ¶ 31 (2005)). See *Evolution Broadband, LLC Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, 24 FCC Rcd 7890, 7891, ¶ 3 (2009).

service new one-way navigation devices (including devices capable of processing a high-definition signal) that perform both conditional access and other functions in a single integrated device provided that the devices do not perform recording functions. The integration ban raises the cost of set-top boxes for cable operators, which discourages operators from transitioning their systems to all-digital.¹⁵³ Transitioning to an all-digital cable system allows operators to make more efficient use of spectrum capacity, allowing the operators to dedicate more of their spectrum to broadband and other services. The impetus for this proposed rule change was to remove economic barriers that discourage cable operators from transitioning their systems to all-digital.

46. The rule proposed in the *FNPRM* would still require operators to offer CableCARDS to any subscribers who request them and to commonly rely on CableCARDS for any digital video recorder and bidirectional devices that they offer for lease or sale. In limiting the proposed rule's applicability to devices with less functionality, the Commission attempted to balance the goal of easing the financial burdens associated with transitioning to digital cable systems with the benefits that stem from common reliance.¹⁵⁴ The Commission also sought comment on whether the potential effect on the retail market supports limiting any relief to smaller cable systems with activated capacity of 552 MHz or less. Some commenters additionally suggested that the integration ban should be eliminated entirely.

47. *Exempting Limited Capability High Definition Set-Top Boxes.* NCTA, ACA, Comcast, and Time Warner support the proposed rule and suggest that it will not impact the limited retail market for navigation devices that currently exists.¹⁵⁵ Motorola adds that HD capability is commonplace rather than advanced and, therefore, the proposed rule would have no effect on the retail market for navigation devices, as the competitive devices available at retail have advanced functionality such as Internet connectivity and recording capability.¹⁵⁶ Finally, proponents of the rule change assert that it will allow cable operators to deploy less expensive set-top boxes which will ease consumers' financial burden when cable operators transition to digital systems.¹⁵⁷ BBT suggests that, for the sake of regulatory certainty, the Commission should not take a piecemeal approach in applying the integration ban suggesting that the Commission either abandon the integration ban altogether or not at all.¹⁵⁸

¹⁵³ See, e.g., *Bend Cable Communications, LLC d/b/a BendBroadband Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules; Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 22 FCC Rcd 209, 216-218, ¶¶ 21-25 (2007).

¹⁵⁴ See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd at 6809, ¶ 30 ("We believe that common reliance by MVPDs and consumer electronic manufacturers on an identical security function will align MVPDs' incentives with those of other industry participants so that MVPDs will plan the development of their services and technical standards to incorporate devices that can be independently manufactured, sold, and improved upon. Moreover, if MVPDs must take steps to support their own compliant equipment, it seems far more likely that they will continue to support and take into account the need to support services that will work with independently supplied and purchased equipment. We believe that cable operator reliance on the same security technology and conditional access interface that consumer electronics manufacturers must rely on is necessary to facilitate innovation in competitive navigation device products and should not substantially impair innovation in cable operator-supplied products.")

¹⁵⁵ NCTA Comments at 14, ACA Comments at 6; Comcast Comments at 14-16; Comcast Reply at 7-9; Time Warner Cable Comments at 16-17.

¹⁵⁶ Motorola Comments at 14-15.

¹⁵⁷ ACA Comments at 3; BendBroadband Reply at 3-4; JSI Comments at 5-7; NCTA Comments at 7-9; Sweetwater Comments at 2-3; Zito Comments at 2, 7.

¹⁵⁸ BBT Comments at 18-19; BBT Reply at 2-4.

48. Public Knowledge and CEA argue that the proposed rule would undermine the goals of common reliance. They assert that the proposed rule would limit cable operators' incentives to support CableCARDs, and that the current state of CableCARD support suggests that cable operators need more, not fewer, incentives to support CableCARDs.¹⁵⁹ They assert also that the Commission still does not have reliable data regarding the cost of relying on CableCARDs or the economic effect CableCARD exemptions have on the retail market. CEA and Public Knowledge argue that, without such data, the Commission cannot accurately balance the public interest benefits of the integration ban against the benefit of an exemption.¹⁶⁰

49. Based on our examination of the record, we will adopt the limited exemption to the integration ban proposed in the *FNPRM*. As the Commission explained in 2005, common reliance ensures that cable operators have incentives to make their services as accessible as possible to CableCARD devices.¹⁶¹ We find that even if cable operators are allowed to deploy integrated one-way devices they will still have incentives to ensure that CableCARD devices are able to receive their services because all two-way, digital video recorder ("DVR") and Internet-connected devices deployed by cable operators will still be subject to the integration ban. Furthermore, as NCTA highlights, cable operators have deployed more than 40 times as many CableCARDs in their own separated security devices than in devices purchased at retail, and we believe that the former devices will remain in service for years to come.¹⁶² We conclude that this decision will not undermine the goal of common reliance, as we believe that the majority of operator-leased devices will continue to commonly rely on CableCARDs, and therefore cable operators will continue to have adequate incentives to support CableCARDs in retail devices. Allowing operators to deploy one-way devices with integrated security will help lower the costs of set-top box rentals to subscribers and allow operators to dedicate more of their spectrum to broadband without undermining the effectiveness of the integration ban. In this vein, while we recognize that the inclusion of an IP-based home-networking connection would provide additional functionality, we believe that the costs to consumers of imposing the interface requirement would outweigh the potential benefits. For these reasons, we exempt one-way set-top boxes from the Commission's integration ban and, correspondingly, our interface requirements.¹⁶³

¹⁵⁹ Public Knowledge Comments at 20-22; CEA Reply at 14-17.

¹⁶⁰ *Id.*

¹⁶¹ *See supra* note 154.

¹⁶² *See, e.g.*, Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission at Attachment at 2 (Sept. 7, 2010). In comparison, in the privately negotiated tru2way agreement consumer electronics manufacturers were satisfied with common reliance on tru2way in 20 percent of new set-top boxes, and agreed to terminate the requirement once the cable industry has deployed a total of ten million tru2way compliant set-top boxes. *See* Letter from Joel Wiginton, Vice President and Senior Counsel, Sony Electronics Inc., and Kathryn A. Zachem, Vice President, Regulatory Affairs, Comcast Corporation to Monica Desai, Chief, Media Bureau, Federal Communications Commission at Attachment at 1 (June 10, 2008).

¹⁶³ *See* Appendix B at 45 (amending Sections 76.640(b)(4) and 76.1204(a)(2)). In May, 2009, the Commission adopted a Memorandum Opinion & Order that imposed certain reporting requirements on Cable One, Inc. as a condition of its waiver of the integration ban with respect to one-way, non-DVR devices that are capable of processing a high-definition signal. *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Cable One, Inc.'s Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, 24 FCC Rcd 7882, 7887-8, ¶ 15 (2009). As those devices are no longer subject to the integration ban and interface requirements, Cable One, Inc. no longer needs a waiver of Sections 76.640(b)(4) 76.1204(a)(1), and therefore is no longer subject to the reporting requirements that were a condition of that waiver.

50. *Limiting the Proposed Exemption to Small Systems.* We decline to put any limitation on the size or capacity of the systems to which the modified rule applies. While no commenter supports adopting an exemption limited to small cable operators as its preferred course of action, Public Knowledge, which encourages the Commission not to adopt any exemption to the integration ban, alternatively suggests that the Commission limit the rule's applicability to small cable systems.¹⁶⁴ Public Knowledge reasons that such a limitation would mitigate the detrimental effects that such a rule would have on common reliance and the development of a retail market for navigation devices. Cable operators oppose such a limitation and assert that limiting the relief would be akin to not offering relief at all. They argue that economies of scale are necessary to encourage manufacturers to develop inexpensive devices with integrated security.¹⁶⁵ They argue that small system operators will not be able to achieve the economies of scale that are necessary to make this relief effective.¹⁶⁶ They also assert that limiting the relief to small systems could unfairly harm subscribers who happen to live in areas with large systems because consumers would benefit if large systems were to transition to all-digital as well.¹⁶⁷ For the same reasons that these commenters present, we agree that a small-system limitation would undermine the benefits of the rule change.

51. *Ending the Integration Ban.* We disagree with the arguments of NCTA and cable operators that the Commission should abandon the integration ban altogether.¹⁶⁸ They assert that the integration ban is an expensive, discriminatory requirement with no consumer benefit.¹⁶⁹ Cable operators reason that ending the integration ban would decrease the costs of transitioning to all-digital systems and would lead to increased availability of broadband. Finally, they argue that terminating the integration ban would reduce set-top box costs for all subscribers.¹⁷⁰ In addition to the arguments summarized above, opponents of ending the integration ban assert that it would discourage cable operators from negotiating in good faith in developing a successor technology to CableCARD, as cable operators would have no economic incentive to work to develop such a technology in a timely fashion.¹⁷¹ We agree. The integration ban continues to serve several important purposes - better support for CableCARD devices, economies of scale for CableCARDS, and economic incentives to develop better solutions. Ending the integration ban before a successor standard is developed would undermine the market for retail navigation devices.

D. Two-Way Negotiation Reporting

52. As the Commission discussed in the *FNPRM*,¹⁷² in 2005 the Commission adopted a requirement that NCTA and CEA file reports every 60 days regarding the status of negotiations on a

¹⁶⁴ Public Knowledge Comments at 22.

¹⁶⁵ ACA Comments at 6, 10; BendBroadband Reply at 3, Cable One Comments at 10; Cable One Reply at 3; Motorola Comments at 14, 16-17; NCTA Comments at 7-14; Pace Comments at 4-5.

¹⁶⁶ ACA Comments at 10; Charter Comments at 9; Cisco Comments at 22; Motorola Comments at 17; NCTA Comments at 12-13.

¹⁶⁷ Charter Comments at 8-9; Echostar Comments at 12-13; NCTA Comments at 7-14; Ubee Comments at 5.

¹⁶⁸ See, e.g., NCTA Comments at 14, 49-50.

¹⁶⁹ *Id.*; BendBroadband Reply at 3-4; Sweetwater Comments at 2-3.

¹⁷⁰ ACA Comments at 3-6, Cable One Comments at 4-10; Cable One Reply at 1-2; NCTA Comments at 49-50.

¹⁷¹ CEA Reply at 14-17; Panasonic Comments at 5; Public Knowledge Comments at 20-22.

¹⁷² 25 FCC Rcd at 4307, ¶ 12.

bidirectional CableCARD standard.¹⁷³ As noted above, the six largest cable operators and numerous consumer electronics manufacturers negotiated an agreement for bidirectional compatibility that continues to rely on and builds on the standards for CableCARDS by using a middleware-based solution called “tru2way.” As the cable industry and the consumer electronics industry have concluded their negotiations on a bidirectional CableCARD standard, we do not believe it is necessary for those parties to continue to file status reports regarding those negotiations, and we therefore eliminate that requirement. As we will still require cable operators to commonly rely on CableCARDS in certain set-top boxes, we will retain the requirement that Comcast Corporation, Time Warner Cable, Cox Communications, Charter Communications, and Cablevision file quarterly reports detailing CableCARD deployment and support.¹⁷⁴

E. Petitions for Reconsideration

53. The Commission also has before it eight petitions for reconsideration in this docket. NCTA, DIRECTV, Genesis Microchip, Inc., MPAA, Broadcast Music, Inc. and the American Society of Composers, Authors and Publishers (“BMI and ASCAP”), and the National Music Publishers’ Association et al. (“NMPA”) separately filed petitions for reconsideration of the *Plug and Play Order*, while NCTA and MPAA also petitioned for reconsideration of the Commission’s *Sua Sponte Reconsideration Order*.¹⁷⁵ As noted below, many of these petitioners seek reconsideration of the Commission’s encoding rules.¹⁷⁶ Our encoding rules prescribe whether and how MVPDs may mark different forms of content (e.g., broadcast, non-premium subscription, pay television, video-on-demand, etc.) to limit the number of times the content may be copied. In addition to the petitions for reconsideration of orders adopted in the plug-and-play dockets, the Commission has before it a petition for reconsideration filed by TiVo, Inc., which is mooted by the rule changes adopted in this order.

54. *NCTA*. Our device certification rules allow device manufacturers to self-certify CableCARD devices once they have received CableLabs certification for any certified CableCARD device.¹⁷⁷ NCTA urges the Commission to reconsider the rule that a manufacturer’s certified first “product” eliminates the need for its first television set to be tested if the manufacturer has already received certification for a set-top box.¹⁷⁸ NCTA asserts that digital televisions (“DTVs”) are more complex than DVR devices or other products, and that a manufacturer’s first television should be tested in order to ensure that consumers’ televisions are able to receive digital cable programming.¹⁷⁹ We agree. As NCTA explains in its petition for reconsideration, “unless the first tested UDCP is a DTV, there will be no real test that the UDCP actually and clearly displays encrypted programming, [emergency alert system] messages, [Program and System Information Protocol] information, and closed captions so there

¹⁷³ See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, 20 FCC Rcd 6794, 6795, ¶ 3 (2005).

¹⁷⁴ *Id.* at 6814-5, ¶ 39.

¹⁷⁵ See *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, 18 FCC Rcd 27059 (2003) (“*Sua Sponte Reconsideration Order*”).

¹⁷⁶ See 47 C.F.R. §§ 76.1901-76.1909.

¹⁷⁷ 47 C.F.R. § 15.123.

¹⁷⁸ NCTA Petition for Reconsideration of the Plug and Play Order at 11 (filed December 29, 2003).

¹⁷⁹ *Id.* at 11-12.

is no assured compliance with all of the relevant standards in the agreed-upon Joint Test Suite.”¹⁸⁰ We conclude that making such testing a part of our rules is necessary to ensure that new devices are built to comply with the Commission’s rules. Accordingly, we grant NCTA’s petition for reconsideration with respect to this issue, and modify our rules to clarify that a manufacturer may not self-certify its first DTV.¹⁸¹

55. Next, NCTA asserts that the Commission’s rules permit too much flexibility in defining a qualified testing facility, and would allow unqualified organizations to test plug and play products because our rules do not require test facilities to be impartial or have appropriate testing equipment.¹⁸² NCTA urges us to define “qualified testing facility” more precisely. CEA disagrees, asserting that NCTA bases its assertions on unfounded security concerns.¹⁸³ We agree with NCTA’s assertions that it is important for our rules to require that qualified testing facilities are impartial organizations whose employees have a detailed understanding of the Joint Test Suite for CableCARD products. We do not believe that NCTA’s security concerns are unfounded, nor do we believe that NCTA’s suggested rule change will hinder independent testing facilities from becoming “qualified testing facilities.” Therefore, we adopt NCTA’s recommendation by modifying our rules to specifically require testing facilities to be impartial and have appropriate testing equipment.¹⁸⁴ To the extent that there are disagreements regarding whether specific testing facilities meet the standards set forth in our modified rule, we will consider such disagreements on a case-by-case basis.

56. In its final critique of the *Plug and Play Order*, NCTA takes issue with the language of certain Commission rules. NCTA asserts that the Commission’s rules should unequivocally state that digital cable ready products must “pass” applicable tests, rather than the current requirement which merely requires that the devices be subject to testing.¹⁸⁵ NCTA also requests that we amend our rules to clarify that a cable operator may carry more than 12 hours of programming metadata (Program and System Information Protocol or “PSIP” data)¹⁸⁶ if it so chooses, and shall only be required to carry PSIP data that conforms to the standards adopted by the Advanced Television Systems Committee for transmission of that data.¹⁸⁷ As these requests will clarify the Commission’s intent in the *Plug and Play Order*, we adopt them without exception.¹⁸⁸

57. NCTA’s petition for reconsideration of the *Sua Sponte Reconsideration Order* requests that the Commission clarify that programming that is not retransmitted “substantially simultaneously” to

¹⁸⁰ *Id.* at 12, n.17. The Joint Test Suite refers to the CableCARD device conformance checklists incorporated into Section 15.38 of our rules.

¹⁸¹ See Appendix B at 42-44 (amending Section 15.123).

¹⁸² NCTA Petition for Reconsideration of the Plug and Play Order at 12-17.

¹⁸³ CEA/CERC Opposition to NCTA Petition for Reconsideration at 25-26 (filed March 10, 2004).

¹⁸⁴ See Appendix B at 43 (amending Section 15.123(c)(2)).

¹⁸⁵ NCTA Petition for Reconsideration of the Plug and Play Order at 17.

¹⁸⁶ Programming metadata is information about television programming that can be used to populate programming guides. Examples of PSIP data include the system time table, the terrestrial virtual channel table, and the event information table. This information allows viewers to choose what to watch using program descriptions rather than just channel numbers.

¹⁸⁷ *Id.* at 17-20. The standard that the Commission adopted for PSIP data transmission is ATSC A/65B.

¹⁸⁸ See Appendix B at 42-44 (amending Section 15.123(c)).

the time it is broadcast is not considered “Unencrypted Broadcast Television” under our encoding rules.¹⁸⁹ Currently, our rules define “Unencrypted Broadcast Television” as the retransmission of any service, program, or schedule or group of programs that is made by a terrestrial television broadcast station in the clear (*i.e.*, without any encryption).¹⁹⁰ NCTA asserts that it is likely that this definition is broader than the Commission intended. NCTA states, as an example, that the omission of the term “substantially simultaneously” prevents it from placing copy protections on VOD content that was originally delivered over the air because it is a retransmission of a program that was initially made by a terrestrial television broadcast station. With our encoding rules, we intend to reflect consumer expectations that they may freely copy unencrypted broadcast programming as it airs. We also intend to reflect that consumers do not have the expectation that they may freely copy all content simply because it was available over the air at one point during the history of television broadcasting. Therefore, we agree with NCTA’s assertion that we should add the phrase “substantially simultaneously” back into the definition of “Unencrypted Broadcast Television,” for the reason that NCTA provides.¹⁹¹

58. *DIRECTV*. DIRECTV urges the Commission to close what it calls the “broadband loophole” in the encoding rules.¹⁹² According to DIRECTV, cable operators and telcos will be able to subvert the Commission’s encoding rules by delivering their video offerings over the Internet, which are specifically exempt from our encoding rules.¹⁹³ We understand DIRECTV’s concern, but there is no evidence that any MVPD is using Internet-based delivery to subvert our encoding rules. If DIRECTV has evidence that this concern is more than hypothetical and is harming consumers, we urge the company to file a petition for declaratory ruling or a petition for rulemaking. Therefore, we deny this portion of DIRECTV’s petition for reconsideration.

59. DIRECTV next argues that the Commission should define minimum standards that include an IEEE 1394 interface.¹⁹⁴ DIRECTV is concerned that television manufacturers could build sets with IEEE 1394 connections that support a cable-only version of IEEE 1394, and prevent consumers from connecting satellite boxes to their television sets. Given the rule change that we adopted in Section III.B above to remove the IEEE 1394 output requirement, and the limited consumer adoption of IEEE 1394 outputs on television sets, we dismiss DIRECTV’s petition for reconsideration as moot on this point.

60. DIRECTV also takes issue with the Commission’s decision to provide CableLabs with the authority to approve and reject content protection technologies for set-top box outputs and to license DFAST technology, which is the content protection scheme used between CableCARDS and UDCPs.¹⁹⁵ DIRECTV’s objections are based on a concern that CableLabs could use its licensing power for anti-competitive purposes against DIRECTV’s services and devices by preventing DIRECTV devices from using DFAST or rejecting DIRECTV’s preferred content protection technologies.¹⁹⁶ The intervening

¹⁸⁹ NCTA Petition for Reconsideration of the Sua Sponte Reconsideration Order at 2-3 (filed Feb. 26, 2004). *See* 47 C.F.R. § 76.1902(s). MPAA makes the same argument in one of its petitions for reconsideration. *See* MPAA Petition for Reconsideration of the Sua Sponte Reconsideration Order at 1-3.

¹⁹⁰ 47 C.F.R. § 76.1902(s).

¹⁹¹ *See* Appendix B at 47-48 (amending Section 76.1902(s)).

¹⁹² DIRECTV Petition for Reconsideration at 4-5 (filed December 29, 2003).

¹⁹³ *Id.* *See* 47 C.F.R. § 76.1901

¹⁹⁴ DIRECTV Petition for Reconsideration at 6-7.

¹⁹⁵ *Id.* at 7-8.

¹⁹⁶ *Id.*

years since the adoption of the *Plug and Play Order* have demonstrated that these concerns are without merit. Indeed, as of June 30, 2003, 20.4 million households in the U.S. subscribed to DBS service;¹⁹⁷ as of June 2010, that number increased to over 33 million,¹⁹⁸ and DIRECTV has not established that CableLabs has rejected any content protection technology to DIRECTV's detriment. Furthermore, we have invited DIRECTV and others to cooperate with the Commission as we seek to develop a successor technology to CableCARD that would apply to all MVPDs.¹⁹⁹ Accordingly, we deny DIRECTV's petition for reconsideration.

61. *Genesis Microchip*. Genesis Microchip takes issue with the Commission's requirement that a DVI or HDMI interface be included on a digital cable ready device.²⁰⁰ Genesis Microchip asserts that DVI and HDMI were not developed by standards development organizations such as IEEE and ANSI, and are not available on a non-discriminatory basis.²⁰¹ Genesis Microchip also asserts that the Commission's requirement violates the Administrative Procedure Act.²⁰² Opponents to Genesis Microchip's petition for reconsideration point out correctly that the Commission addressed Genesis Microchip's arguments in the *Plug and Play Order*, stating that "the technology underlying these specifications is widely available in the marketplace today" and that "the adopter agreements for these technologies are freely offered on non-discriminatory terms."²⁰³ Furthermore, HDMI is a ubiquitous output, available on an estimated one billion devices,²⁰⁴ and we are convinced that Genesis Microchip's objections are not supported by marketplace reality. Therefore, we deny Genesis Microchip's petition for reconsideration.

62. *MPAA*. MPAA seeks reconsideration of four points in the *Plug and Play Order*.²⁰⁵ First, MPAA asserts that the Commission should mandate that all digital cable ready devices be built with the capability to recognize and honor video programming that is encoded with a request to remotely disable selected audio/video outputs, also known as "selectable output control." MPAA believes that selectable output control functionality is essential to protect content and facilitate future business models that take advantage of selectable output control functionality. We do not believe that such a mandate is necessary.

¹⁹⁷ *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, 19 FCC Rcd 1606, 1652, ¶ 65 (2004).

¹⁹⁸ http://files.shareholder.com/downloads/DTV/1008238777x0x393781/3FD65B79-BAF3-4CB4-B355-7BAC79FE15AB/DTV_News_2010_8_5_General_Releases.pdf;
<http://online.wsj.com/article/SB10001424052748704388504575419031760134088.html>.

¹⁹⁹ See *NOI 25* FCC Rcd at 4276, ¶ 2.

²⁰⁰ Genesis Microchip Petition for Reconsideration at 1-3 (filed December 29, 2003). HDMI and DVI are digital interfaces that transfer uncompressed video (and audio, in the case of HDMI) data to a display, such as a television set. The Commission's rule regarding labeling of certain television sets as "Digital Cable Ready" requires the television set manufacturer to include an HDMI or a DVI interface. 47 C.F.R. § 15.123(b)(6).

²⁰¹ Genesis Microchip Petition for Reconsideration at 6-13.

²⁰² *Id.* at 13-18.

²⁰³ *Plug and Play Order*, 18 FCC Rcd at 20897, ¶ 25. See also NCTA Opposition to Genesis Microchip Petition for Reconsideration at 5-9 (filed March 10, 2004); Silicon Image, Inc. Opposition to Genesis Microchip Petition for Reconsideration at 3-7 (filed March 10, 2004).

²⁰⁴ See High Definition Multimedia Interface, Frequently Asked Questions, at <http://www.hdmi.org/learningcenter/faq.aspx>.

²⁰⁵ MPAA Petition for Reconsideration at 1 (filed December 29, 2003).

In May 2010, the Commission's Media Bureau released an order granting in part MPAA's request for waiver of the prohibition on the use of selectable output control for certain high-value films in order to support a new business model of delivering early-release films over MVPD systems to consumers.²⁰⁶ As MPAA argued in support of that waiver, "the use of SOC would have no impact whatsoever on the ability of existing [consumer electronics equipment] to work in exactly the same fashion that such devices work today."²⁰⁷ While it is possible that consumer electronics manufacturers may want to build devices with SOC in order to be compatible with future business models like the early-release film model, as they are free to do under our rules, we do not believe that it is necessary to require such functionality to protect high-value content or ensure the success of such future business models.²⁰⁸ Therefore, we do not believe that it is necessary to mandate that such functionality be built into consumer electronics devices, and we deny MPAA's petition for reconsideration with respect to this issue.

63. Second, MPAA would like Subscription VOD designated as a defined business model. Subscription VOD is a video-on-demand service that requires customers to subscribe to a service to gain access to the on-demand programming. In the *Plug and Play Order*, the Commission classified Subscription VOD as an Undefined Business Model, in order to "allow[...] SVOD to more fully develop as a program offering in the marketplace."²⁰⁹ MPAA asserts that because the Commission did not explicitly adopt a rule that allows cable operators to prohibit their subscribers from copying Subscription VOD, the Commission will stifle the development of the service. Starz Encore Group originally opposed this petition, arguing that the Commission's flexible rules would encourage SVOD to flourish,²¹⁰ but later withdrew its opposition based on its new position that the "Undefined Business Model" public notification process is "difficult and cumbersome . . . for cable operators to navigate."²¹¹ We conclude that MPAA's concerns were unfounded, and that the procedures agreed upon in the MOU are sufficient to meet the needs of content owners, MVPDs, and their subscribers. As contemplated in the *Plug and Play Order*, Subscription VOD services have thrived in the marketplace, as Starz On-Demand, HBO On-Demand, Cinemax On-Demand, and Showtime On-Demand are all popular services available to

²⁰⁶ *Motion Picture Association of America's Petition for Expedited Special Relief; Petition for Waiver of the Commission's Prohibition on the Use of Selectable Output Control* (47 C.F.R. § 76.1903), 25 FCC Rcd 4799 (2010). Section 76.1903 prohibits MVPDs from encoding content in such a manner that disables certain audiovisual outputs on set-top boxes.

²⁰⁷ See Letter from Antoinette Cook Bush and Jared S. Sher, Counsel, Motion Picture Association of America, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 08-82, at 2 (Nov. 23, 2009).

²⁰⁸ See Public Knowledge Opposition to MPAA Petition for Reconsideration at 3-6 (filed March 10, 2004); Home Recording Rights Coalition Opposition to MPAA Petition for Reconsideration at 2-4 (filed March 10, 2004). See also CEA/CERC Opposition to MPAA Petition for Reconsideration at 2-11 (filed March 10, 2004).

²⁰⁹ *Plug and Play Order* 18 FCC Rcd at 20918, ¶ 74. Under the Commission's rules, Undefined Business Models are subject to public review of how they are encoded for recording purposes, whereas certain Defined Business Models, such as pay-per-view, are allowed to be encoded as "copy never." 47 C.F.R. §§ 76.1904-76.1906. Entities that are subject to the encoding rules are allowed to encode Undefined Business Model content as they see fit, with the caveat that the Commission may review the encoding of that Undefined Business Model if we receive a complaint about it during the public review period. 47 C.F.R. § 76.1906.

²¹⁰ Starz Encore Group LLC's Opposition to MPAA's Petition for Reconsideration at 3-7 (filed March 10, 2004).

²¹¹ Letter from Richard H. Waysdorf, Vice President, Business Affairs, Starz Entertainment Group LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission at 1 (April 15, 2005).

consumers.²¹² Subject to the review process for Undefined Business Models set forth in Section 76.1906 of our rules,²¹³ content providers and MVPDs are free to negotiate the terms for how such business models are encoded. To the extent that any interested party has specific problems with the current state of the encoding of any SVOD service, our rules set forth procedures for filing complaints regarding how such content is encoded.²¹⁴ Accordingly, we deny MPAA's petition for reconsideration with respect to this issue.

64. Third, MPAA seeks simplified procedures for announcing and challenging the launch of an Undefined Business Model for content encoding purposes. When an entity launches a new video programming service that is not defined in our encoding rules, that entity must announce its launch publicly, describe the service, and explain how it will be encoded for recording purposes.²¹⁵ Interested parties may then challenge the encoding terms for up to two years after the announcement of the service. MPAA's challenge stems from a concern that Undefined Business Model announcements will lead to regulatory uncertainty because numerous MVPDs will be required to make announcements regarding these new business models, and that the window for accepting such challenges is too long. We disagree. This rule has been in effect for over six years, and the Commission has not received a single challenge regarding the encoding rules for an undefined business model. Accordingly, we conclude that MPAA's speculative challenge is unfounded.

65. Fourth, MPAA seeks clarification that Section 76.1908(a),²¹⁶ which allows MVPDs to maintain undistributed copies of audio-visual content that is encoded in any way the MVPD chooses, does not nullify contractual obligations between MVPDs and content providers. MPAA is correct in its assertion that the Commission did not intend that MVPDs be allowed to use Section 76.1908(a) of the Commission's rules to make copies of "Copy Never" content on a PVR in a consumer's home. Therefore, we clarify that Section 76.1908(a) does not permit MVPDs to make copies of content that would violate agreements between content owners and MVPDs.²¹⁷

66. Finally, MPAA seeks review of the Commission's *Sua Sponte Reconsideration Order* on the same grounds that NCTA does.²¹⁸ For the same reasons provided in our consideration of NCTA's petition above in paragraph 57, MPAA's petition is granted with respect to this issue.

67. *BMI and ASCAP.* BMI and ASCAP have filed a petition for reconsideration seeking a declaration that performance rights organizations are allowed to decrypt content that has been encrypted, when used solely for the purpose of monitoring and tracking transmissions of audiovisual works for royalty purposes.²¹⁹ We do not believe that a rule change is necessary for such a narrow exception of our

²¹² *Plug and Play Order*, 18 FCC Rcd at 20917-8, ¶ 73-74. See, e.g., www.starz.com/channels/ondemand/; <http://www.hboondemand.com/>; <http://www.cinemax.com/ondemand/>; <http://www.sho.com/site/schedules/ondemand.do>.

²¹³ 47 C.F.R. § 76.1906.

²¹⁴ *Id.*

²¹⁵ *Id.*

²¹⁶ 47 C.F.R. § 76.1908(a).

²¹⁷ See Appendix B at 48 (amending Section 76.1908(b)).

²¹⁸ MPAA Petition for Reconsideration of the *Sua Sponte Reconsideration Order* at 2-3 (filed Feb. 27, 2004).

²¹⁹ BMI and ASCAP Petition for Reconsideration at 2-3 (filed December 24, 2003).

rules, and we agree with the Home Recording Rights Coalition that the Commission does not have the authority to grant a waiver of the Digital Millennium Copyright Act's prohibition on circumventing content encryption.²²⁰ Accordingly, we deny BMI and ASCAP's petition for reconsideration.

68. *NMPA*. The National Music Publishers Association seeks reconsideration of the Commission's decision not to require output controls on digital audio outputs.²²¹ NMPA asserts that unprotected digital audio outputs will contribute to illegal copying, and that the Commission's decision not to require content protections on digital audio outputs violates copyright concerns. We continue to believe that our existing treatment of audio outputs is necessary to protect legacy devices that do not have protected digital connections.²²² Moreover, NMPA provides no evidence that illegal copying of the audio channel of cable television programming is anything more than a speculative problem.²²³ Accordingly, we deny NMPA's petition for reconsideration.

69. *TiVo*. On July 27, 2009, TiVo filed a petition for reconsideration of the Commission's decision that our then existing rules did not require cable operators to provide UDCPs with access to switched digital channels.²²⁴ Due to the rule change that we adopt in Section III.A.1 above, which requires cable operators to provide UDCPs with access to switched digital channels, we dismiss TiVo's petition as moot.

IV. CONCLUSION

70. The steps we take in this order represent inexpensive reforms that will remove the disparity in the subscriber experience for those customers who choose to purchase a retail navigation device as opposed to leasing the cable provider's set-top box. These steps will help to develop a retail market for navigation devices during the interim period before a successor solution is developed and implemented for all MVPDs. While we are optimistic about the prospects of a successor technology, we must also be pragmatic about harnessing realized solutions. Therefore, until a successor technology is actually available, the Commission must strive to make the existing CableCARD standard work effectively.

V. PROCEDURAL MATTERS

71. *Paperwork Reduction Act Analysis*. This document contains information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the information collection requirements contained in this proceeding. The Commission will publish a separate document in the Federal Register at a later date seeking these comments. In addition, we note that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), we will seek specific comment on how the Commission might "further reduce the information collection burden

²²⁰ Home Recording Rights Coalition Opposition to BMI and ASCAP Petition for Reconsideration at 6-7 (filed March 10, 2004).

²²¹ NMPA Petition for Reconsideration at 1-4 (filed December 29, 2003).

²²² See Public Knowledge Opposition to NMPA Petition for Reconsideration at 7-9 (filed March 10, 2004).

²²³ *Id.* at 4, n.5.

²²⁴ See Petition for Reconsideration or Clarification of TiVo Inc., File Nos. EB-07-SE-351, EB-07-SE-352 (filed July 27, 2009); *Oceanic Time Warner Cable, Cox Communications, et al.*, 24 FCC Rcd 8716 (2009).

for small business concerns with fewer than 25 employees.”

72. *Final Regulatory Flexibility Analysis.* As required by the Regulatory Flexibility Act,²²⁵ the Commission has prepared a Final Regulatory Flexibility Analysis (“FRFA”) relating to this *Report and Order*. The FRFA is set forth in Appendix A.

73. *Congressional Review Act.* The Commission will send a copy of this *Third Report and Order* in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A).

74. *Additional Information.* For additional information on this proceeding, contact Steven Broeckaert, Steven.Broeckaert@fcc.gov, or Brendan Murray, Brendan.Murray@fcc.gov, of the Media Bureau, Policy Division, (202) 418-2120.

75. For additional information concerning the information collection(s) contained in this document, contact Cathy Williams at (202) 418-2918, or via the Internet at PRA@fcc.gov.

VI. ORDERING CLAUSES

76. **IT IS ORDERED** that, pursuant to Sections 1, 4(i) and (j), 303, 403, 601, 624A and 629 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i) and (j), 303, 403, 521, 544a, and 549, this *Report and Order* **IS ADOPTED**.

77. **IT IS FURTHER ORDERED** that, pursuant to the authority contained in Sections 1, 4(i) and (j), 303, 403, 601, 624A, and 629 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i) and (j), 303, 403, 521, 544a, and 549, the Commission’s rules **ARE AMENDED** as set forth in Appendix B.

78. **IT IS FURTHER ORDERED** that the rules contained herein **SHALL BE EFFECTIVE** 30 days after publication of the *Third Report and Order* in the Federal Register, except for the rules that contain information collection requirements subject to the Paperwork Reduction Act,²²⁶ which shall become effective immediately upon announcement in the Federal Register of OMB approval.

79. **IT IS FURTHER ORDERED** that the National Cable and Telecommunications Association and Consumer Electronics Association **SHALL NO LONGER FILE REPORTS** regarding the status of negotiations for a bidirectional CableCARD standard. This reporting requirement was subject to the PRA and shall cease to be effective once approved by OMB. The Commission will publish a notice in the Federal Register announcing the effective date.

80. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 29, 2003 by the National Cable and Telecommunications Association **IS GRANTED**.

81. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed February 26, 2004 by the National Cable and Telecommunications Association **IS GRANTED**.

82. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 29,

²²⁵ *See* 5 U.S.C. § 604.

²²⁶ Those rule changes are Sections 76.1205(b)(1)(a), 76.1205(b)(5), 76.1602(b)(7), and 76.1602(b)(8) of the Commission’s Rules.

2003 by DIRECTV **IS DENIED.**

83. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 29, 2003 by Genesis Microchip, Inc **IS DENIED.**

84. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 29, 2003 by the Motion Picture Association of America **IS GRANTED IN PART AND DENIED IN PART.**

85. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed February 27, 2004 by the Motion Picture Association of America **IS GRANTED.**

86. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 24, 2003 by Broadcast Music, Inc. and the American Society of Composers, Authors and Publishers **IS DENIED.**

87. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed December 29, 2003 by the National Music Publishers' Association et al **IS DENIED.**

88. **IT IS FURTHER ORDERED** that the Petition for Reconsideration filed July 27, 2009 by TiVo, Inc. **IS DISMISSED AS MOOT.**

89. **IT IS FURTHER ORDERED** that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, **SHALL SEND** a copy of this *Third Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

90. **IT IS FURTHER ORDERED** that the Commission **SHALL SEND** a copy of this *Third Report and Order* in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, see 5 U.S.C. § 801(a)(1)(A).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Final Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *Fourth Further Notice of Proposed Rule Making (FNPRM)*.² The Commission sought written public comment on the proposals in the *FNPRM*, including comment on the IRFA.³ No commenting parties specifically addressed the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.⁴

A. Need for, and Objectives of, the Rules.

1. The need for FCC regulation in this area derives from deficiencies in our rules that prevent consumer electronics manufacturers from developing video navigation devices (such as televisions and set-top boxes) that can be connected directly to cable systems and access cable services without the need for a cable-operator provided navigation device. The objectives of the rules we adopt are to support a competitive market for navigation devices by increasing customer service and by improving audio-visual output functionality on cable-operator-leased devices.

2. Specifically, we adopt rules that (i) require cable operators to provide customer and technical support for retail devices to access switched digital channels; (ii) require that equivalent prices be charged for CableCARDS⁵ for use in cable-operator-provided set-top boxes and in retail devices, and that require the pricing information and billing of the CableCARD to be more transparent; (iii) simplify the CableCARD installation process; (iv) require cable operators to provide their subscribers with CableCARDS that can tune multiple streams of programming; and (v) streamline the CableCARD device certification process by modifying our rules to reflect updated testing procedures,⁶ and prohibiting a qualified testing facility from refusing to certify UDCPs for any reason other than a failure to comply with the conformance checklists referenced in our current rules.

B. Legal Basis.

3. The authority for the action proposed in this rulemaking is contained in Sections 1, 4(i) and (j), 303, 403, 601, 624A and 629 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i) and (j), 303, 403, 521, 544a and 549.

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See Implementation of Section 304 of the Telecommunications Act of 1996, CS Docket No. 97-80, *Fourth Further Notice of Proposed Rulemaking*, 25 FCC Rcd 4303 Appendix B (2010).

³ See *Id.* at ¶ 1.

⁴ See 5 U.S.C. § 604.

⁵ A CableCARD is a security device provided by a cable operator, which can be inserted into a retail navigation device bought by a consumer in the retail market to allow the consumer's television to display encrypted video programming.

⁶ See Appendix B (amending Section 15.123(c)); NCTA Comments at 25-6 (*citing* National Cable and Telecommunications Association's Opposition to Petitions for Reconsideration and Notice of Joint Proposal for Improved Testing Rules in CS Docket No. 97-80, Exhibit A, Agreement Concerning Equivalent ATP, March 10, 2004).

B. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply.

4. The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the proposed rules.⁷ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental entity” under Section 3 of the Small Business Act.⁸ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁹ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (“SBA”).¹⁰

5. *Cable Television Distribution Services.* Since 2007, these services have been defined within the broad economic census category of Wired Telecommunications Carriers; that category is defined as follows: “This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies.”¹¹ The SBA has developed a small business size standard for this category, which is: all such firms having 1,500 or fewer employees. To gauge small business prevalence for these cable services we must, however, use current census data that are based on the previous category of Cable and Other Program Distribution and its associated size standard; that size standard was: all such firms having \$13.5 million or less in annual receipts.¹² According to Census Bureau data for 2002, there were a total of 1,191 firms in this previous category that operated for the entire year.¹³ Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25 million.¹⁴ Thus, the majority of these firms can be considered small.

⁷ 5 U.S.C. § 603(b)(3).

⁸ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632). Pursuant to the RFA, the statutory definition of a small business applies, “unless an agency, after consultation with the Office of Advocacy of the SBA and after opportunity for public comment, establishes one or more definitions of such the term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.

⁹ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.”

¹⁰ 15 U.S.C. § 632. Application of the statutory criteria of dominance in its field of operation, and independence are sometime difficult to apply in the context of broadcast television. Accordingly, the Commission’s statistical account of television stations may be over-inclusive.

¹¹ U.S. Census Bureau, 2007 NAICS Definitions, “517110 Wired Telecommunications Carriers” (partial definition); <http://www.census.gov/naics/2007/def/ND517110.HTM#N517110>.

¹² 13 C.F.R. § 121.201, NAICS code 517110.

¹³ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

¹⁴ *Id.* An additional 61 firms had annual receipts of \$25 million or more.

6. *Cable Companies and Systems.* The Commission has also developed its own small business size standards, for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers, nationwide.¹⁵ Industry data indicate that, of 1,076 cable operators nationwide, all but eleven are small under this size standard.¹⁶ In addition, under the Commission's rules, a "small system" is a cable system serving 15,000 or fewer subscribers.¹⁷ Industry data indicate that, of 6,635 systems nationwide, 5,802 systems have under 10,000 subscribers, and an additional 302 systems have 10,000-19,999 subscribers.¹⁸ Thus, under this second size standard, most cable systems are small.

7. *Cable System Operators.* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."¹⁹ The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.²⁰ Industry data indicate that, of 1,076 cable operators nationwide, all but ten are small under this size standard.²¹ We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,²² and therefore we are unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* The Census Bureau defines this category as follows: "This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment."²³ The SBA has developed a small business size

¹⁵ 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

¹⁶ These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

¹⁷ 47 C.F.R. § 76.901(c).

¹⁸ Warren Communications News, *Television & Cable Factbook 2008*, "U.S. Cable Systems by Subscriber Size," page F-2 (data current as of Oct. 2007). The data do not include 851 systems for which classifying data were not available.

¹⁹ 47 U.S.C. § 543(m)(2); see 47 C.F.R. § 76.901(f) & nn. 1-3.

²⁰ 47 C.F.R. § 76.901(f); see Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

²¹ These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 & C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

²² The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. See 47 C.F.R. § 76.909(b).

²³ U.S. Census Bureau, 2002 NAICS Definitions, "334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing"; <http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342>.

standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.²⁴ According to Census Bureau data for 2002, there were a total of 1,041 establishments in this category that operated for the entire year.²⁵ Of this total, 1,010 had employment of under 500, and an additional 13 had employment of 500 to 999.²⁶ Thus, under this size standard, the majority of firms can be considered small.

8. *Other Communications Equipment Manufacturing.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing communications equipment (except telephone apparatus, and radio and television broadcast, and wireless communications equipment).”²⁷ The SBA has developed a small business size standard for Other Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.²⁸ According to Census Bureau data for 2002, there were a total of 503 establishments in this category that operated for the entire year.²⁹ Of this total, 493 had employment of under 500, and an additional 7 had employment of 500 to 999.³⁰ Thus, under this size standard, the majority of firms can be considered small.

9. *Electronics Equipment Manufacturers.* The SBA has developed a small business size standard for manufacturers of audio and video equipment,³¹ which is: all such firms having 750 or fewer employees.³² Census Bureau data indicates that there are 571 U.S. establishments that manufacture audio and visual equipment, and that 560 of these establishments have fewer than 500 employees and would be classified as small entities.³³ The remaining 11 establishments have 500 or more employees; however, we

²⁴ 13 C.F.R. § 121.201, NAICS code 334220.

²⁵ U.S. Census Bureau, American FactFinder, 2002 Economic Census, Industry Series, Industry Statistics by Employment Size, NAICS code 334220 (released May 26, 2005); <http://factfinder.census.gov>. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 2002, which was 929.

²⁶ *Id.* An additional 18 establishments had employment of 1,000 or more.

²⁷ U.S. Census Bureau, 2002 NAICS Definitions, “334290 Other Communications Equipment Manufacturing”; <http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342>.

²⁸ 13 C.F.R. § 121.201, NAICS code 334290.

²⁹ U.S. Census Bureau, American FactFinder, 2002 Economic Census, Industry Series, Industry Statistics by Employment Size, NAICS code 334290 (released May 26, 2005); <http://factfinder.census.gov>. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 2002, which was 471.

³⁰ *Id.* An additional 3 establishments had employment of 1,000 or more.

³¹ 13 CFR § 121.201, NAICS code 334310.

³² 13 C.F.R. § 121.201, NAICS code 334290.

³³ Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 2002 Economic Census, Industry Series – Manufacturing, Audio and Video Equipment Manufacturing, Table 4 at 9 (2004). The (continued....)

are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. We therefore conclude that there are no more than 560 small manufacturers of audio and visual electronics equipment for consumer/household use.

10. *Computer Manufacturers.* The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will utilize the SBA definition of electronic computers manufacturing. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity.³⁴ Census Bureau data indicates that there are 485 firms that manufacture electronic computers and of those, 476 have fewer than 1,000 employees and qualify as small entities.³⁵ The remaining 9 firms have 1,000 or more employees. We conclude that there are approximately 476 small computer manufacturers.

C. Description of Projected Reporting, Recordkeeping and other Compliance Requirements.

11. The rules adopted in the Order will impose additional reporting, recordkeeping, and compliance requirements on cable operators. The Order adopts a rule that requires cable operators to charge equivalent and transparent prices for CableCARDS. This rule change will require certain cable operators to change their billing practices by reporting CableCARD prices on their websites, annual rate cards, or monthly bills. The Order also adopts a rule that will require device manufacturers to include CableCARD installation instructions with their devices.

D. Steps Taken to Minimize Significant Impact on Small Entities, and Significant Alternatives Considered.

12. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.³⁶

13. Four of the final rules did not require the Commission to consider alternatives. Based on our review of the record and analysis, a consideration of alternatives is unnecessary because adoption of these rules leads to far greater consumer and industry benefits that outweigh any de minimis burden that may be placed on small entities. The switched digital support rule places a minor burden on cable operators. This burden is offset because the rule will greatly benefit consumers by ensuring that subscribers are able to access all of the programming for which they pay. This rule ensures consumers will benefit regardless of whether they use retail or leased devices.

(Continued from previous page) _____
amount of 500 employees was used to estimate the number of small business firms because the relevant Census categories stopped at 499 employees and began at 500 employees. No category for 750 employees existed. Thus, the number is as accurate as it is possible to calculate with the available information.

³⁴ 13 C.F.R. § 121.201, NAICS code 334111.

³⁵ Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1997 Economic Census, Industry Series – Manufacturing, Electronic Computer Manufacturing, Table 4 at 9 (1999).

³⁶ 5 U.S.C. § 603(b).

14. The installation rule decreases the burden on cable operators with respect to customer service calls. It requires cable technicians to arrive with the number of CableCARDS that a consumer requests, and allow for self-installation of CableCARDS. The effect will be to reduce the difficulties that consumers face when seeking to install a CableCARD in a retail device and to reduce the number of service calls that cable operators and subscribers need to schedule.

15. The rule regarding Multi-stream CableCARDS places a minimal burden on cable operators by requiring cable operators to provide subscribers with Multi-stream CableCARDS. However, the record indicates that Multi-stream CableCARDS have been the standard since 2007 and CableCARD manufacturers are no longer making single stream CableCARDS to sell to cable operators. Therefore, we believe the burden will be minimal and will be greatly outweighed by the benefits to consumers. This rule will reduce the cost that consumers face to use the picture-in-picture and “watch one, record one” functions of their video navigation devices, since fewer CableCARDS will be necessary.

16. The rule that streamlines the CableCARD device certification process will place no burden on qualified testing facilities. To the contrary, it will benefit consumer electronics manufacturers by reducing the cost of the certification process and limiting the influence that testing facilities have in the development of new consumer electronics equipment.

17. The Commission did consider alternatives to the pricing and billing rule. As proposed, the rule change would have required cable operators to separate and report the cost of a CableCARD on every monthly bill. As suggested in comments received in the proceeding, the Commission instead adopted a rule that will instead require cable operators to separate and report the cost on the annual rate card or on the operator’s web site. This new rule places a smaller burden on cable operators than the proposed rule. It will also greatly benefit consumers, resulting in fewer customer service calls, an increase in transparency of pricing, and provide consumers with pricing information prior to purchase, rather than after.

E. Federal Rules Which Duplicate, Overlap, or Conflict with the Commission's Proposals.

18. None.

APPENDIX B

Final Rules

Part 15 of Title 47 of the Code of Federal Regulations will be amended as follows:

I. SUBPART B: Unintentional Radiators

1. Amend §15.38 to read as follows:

(c) The following materials are freely available from at least one of the following addresses: Cable Television Laboratories, Inc., 858 Coal Creek Circle, Louisville, Colorado, 80027, www.cablelabs.com/udcp; or at Consumer Electronics Association, 1919 S. Eads St. Arlington; VA 22202, http://www.ce.org/public_policy.

(1) Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma,” 2003, IBR approved for §15.123.

(2) Uni-Dir-ATP-I02-040225: “Uni-Directional Receiving Device Acceptance Test Plan,” 2004, IBR approved for §15.123.

() M-Host UNI-DIR-PICS-IOI-061101, IBR approved for §15.123.**

() TP-ATP-M-UDCP-IOI-061101, IBR approved for §15.123.**

2. Amend §15.123 to read as follows:

§15.123 Labeling of Digital Cable Ready Products.

(c) Before a manufacturer's or importer's first unidirectional digital cable product may be labeled or marketed as digital cable ready or with other terminology as described in paragraph (b) of this section, the manufacturer or importer shall verify the device as follows:

(1) The manufacturer or importer shall have a sample of its first model of a unidirectional digital cable product tested to show compliance with the procedures set forth in Uni-Dir-PICS-I01-030903: Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma (incorporated by reference, see 15.38) at a qualified test facility. **If the model fails to comply, the manufacturer or importer shall have any modifications to the product to correct failures of the procedures in Uni-Dir-PICS-I01-030903: Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma (incorporated by reference, see 15.38) retested at a qualified test facility and the product must comply with the applicable procedures in § 15.38 before the product or any related model may be labeled or marketed. If the manufacturer or importer's first unidirectional digital cable product is not a television, then that manufacturer or importer's first model of a unidirectional digital cable product which is a television shall be tested pursuant to this subsection as though it were the first unidirectional digital cable product. A qualified test facility may only require compliance with the procedures set forth in Uni-Dir-PICS-I01-030903: Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma (incorporated by reference, see 15.38). Compliance**

testing beyond those procedures shall be at the discretion of the manufacturer or importer.

(2) A qualified test facility is a testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States or an **appropriately qualified independent laboratory with adequate equipment and competent personnel** knowledgeable with respect to the standards referenced in paragraph (b) of this section concerning the procedures set forth in Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma” (incorporated by reference, see § 15.38) **and with Uni-Dir-ATP-I02-040225: “Uni-Directional Receiving Device Acceptance Test Plan,” 2004, (incorporated by reference, see § 15.38).** **For any independent testing laboratory to be qualified hereunder such laboratory must ensure that all its decisions are impartial and have a documented structure which safeguards impartiality of the operations of the testing laboratory. In addition, any independent testing laboratory qualified hereunder must not supply or design products of the type it tests, nor provide any other products or services that could compromise confidentiality, objectivity or impartiality of the testing laboratory’s testing process and decisions.**

(3) Subsequent to the testing of its initial unidirectional digital cable product model, a manufacturer or importer is not required to have other models of unidirectional digital cable products tested at a qualified test facility for compliance with the procedures of Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma” (incorporated by reference, see § 15.38) **unless the first model tested was not a television, in which event the first television shall be tested as provided in § 15.123(c)(1).** The manufacturer or importer shall ensure that all subsequent models of unidirectional digital cable products comply with the procedures in the Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma” (incorporated by reference, see § 15.38) and all other applicable rules and standards. The manufacturer or importer shall maintain records indicating such compliance in accordance with the verification procedure requirements in part 2, subpart J of this chapter. The manufacturer or importer shall further submit documentation verifying compliance with the procedures in the Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma” (incorporated by reference, see § 15.38) to **the testing laboratory** representing cable television system operators serving a majority of the cable television subscribers in the United States.

(4) **Unidirectional digital cable product models must be tested for compliance with Uni-Dir-PICS-I01-030903: “Uni-Directional Receiving Device: Conformance Checklist: PICS Proforma” (incorporated by reference, see § 15.38) in accordance with Uni-Dir-ATP-I02-040225: “Uni-Directional Receiving Device Acceptance Test Plan,” 2004, (incorporated by reference, see § 15.38) or an equivalent test procedure that produces identical pass/fail test results. In the event of any dispute over the applicable results under an equivalent test procedure, the results under Uni-Dir-ATP-I02-040225: “Uni-Directional Receiving Device Acceptance Test Plan,” 2004 shall govern.**

(5) **This subsection applies to unidirectional digital cable product models which utilize Point-of-Deployment modules (PODs) in multi-stream mode (M-UDCPs).**

(i) The manufacturer or importer shall have a sample of its first model of a M-UDCP tested at a qualified test facility to show compliance with the M-Host UNI-DIR-PICS-IOI-061101 as specified in the procedures set forth in TP-ATP-M-UDCP-IOI-061101 (both references incorporated by reference, see § 15.38). If the model fails to comply, the manufacturer or importer shall have retested, at a qualified test facility, a product that complies with the applicable tests and procedures in § 15.38 before any product or related model may be labeled or marketed. If the manufacturer or importer's first M-UDCP is not a television, then that manufacturer or importer's first model of a M-UDCP which is a television shall be tested pursuant to this subsection as though it were the first M-UDCP.

(ii) A qualified test facility is a testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States or an appropriately qualified independent laboratory with adequate equipment and competent personnel knowledgeable with respect to the references noted in § 15.38. For any independent testing laboratory to be qualified hereunder such laboratory must ensure that all its decisions are impartial and have a documented structure which safeguards impartiality of the operations of the testing laboratory. In addition, any independent testing laboratory qualified hereunder must not supply or design products of the type it tests, nor provide any other products or services that could compromise confidentiality, objectivity or impartiality of the testing laboratory's testing process and decisions.

(iii) Subsequent to the successful testing of its initial M-UDCP, a manufacturer or importer is not required to have other M-UDCP models tested at a qualified test facility for compliance with M-Host UNI-DIR-PICS-IOI-061101 (incorporated by reference, see § 15.38) unless the first model tested was not a television, in which event the first television shall be tested as provided in § 15.123(c)(5)(i). The manufacturer or importer shall ensure that all subsequent models of M-UDCPs comply with M-Host UNI-DIR-PICS-IOI-061101 (incorporated by reference, see § 15.38) and all other applicable rules and standards. The manufacturer or importer shall maintain records indicating such compliance in accordance with the verification procedure requirements in part 2, subpart J of this chapter. For each M-UDCP model, the manufacturer or importer shall further submit documentation verifying compliance with M-Host UNI-DIR-PICS-IOI-061101 to the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

(iv) M-UDCPs must be in compliance with M-Host UNI-DIR-PICS-101-061101 (incorporated by reference, see § 15.38) in accordance with the procedures set forth in TP-ATP-M-UDCP-IOI-061101, (incorporated by reference, see § 15.38) or an equivalent test procedure that produces identical pass/fail test results. In the event of any dispute over the applicable results under an equivalent test procedure, the results under TP-ATP-M-UDCP-IOI-061101 shall govern.

Part 76 of Title 47 of the Code of Federal Regulations will be amended as follows:

I. SUBPART K – TECHNICAL STANDARDS

1. Amend § 76.640 to read as follows:

§ 76.640 Support for unidirectional digital cable products on digital cable systems.

(b)(4) Cable operators shall:

(ii) Effective July 1, 2011, include both: (A) a DVI or HDMI interface and (B) a **connection capable of delivering recordable high definition video and closed captioning data in an industry standard format** on all high definition set-top boxes, **except unidirectional set-top boxes without recording functionality**, acquired by a cable operator for distribution to customers.

(iii) **Effective December 1, 2012**, ensure that **the** cable-operator-provided high definition set-top boxes, **except unidirectional set-top boxes without recording functionality**, shall comply with **an open industry standard that provides for audiovisual communications including service discovery, video transport, and remote control command pass-through standards for home networking.**

II. SUBPART P – COMPETITIVE AVAILABILITY OF NAVIGATION DEVICES

1. Amend § 76.1204 to read as follows:

§ 76.1204 Availability of equipment performing conditional access or security functions.

(a)(2) The foregoing requirement shall not apply (i) **with respect to unidirectional navigation devices without recording functionality; or (ii)** to a multichannel video programming distributor that supports the active use by subscribers of navigation devices that: (A) operate throughout the continental United States, and (B) are available from retail outlets and other vendors throughout the United States that are not affiliated with the owner or operator of the multichannel video programming system.

2. Amend § 76.1205 to read as follows:

§ 76.1205 CableCARD Support.

(a) Technical information concerning interface parameters that are needed to permit navigation devices to operate with multichannel video programming systems shall be provided by the system operator upon request in a timely manner.

(b) **A multichannel video programming provider that is subject to the requirements of Section 76.1204(a)(1) must:**

(1) provide the means to allow subscribers to self-install the CableCARD in a CableCARD-reliant device purchased at retail and inform a subscriber of this option when the subscriber requests a CableCARD. This requirement shall be effective August 1, 2011, if the MVPD allows its subscribers to self-install any cable modems or operator-leased set-top boxes and November 1, 2011 if the MVPD does not allow its subscribers to self-install any cable modems or operator-leased set-top boxes;

(A) This requirement shall not apply to cases in which neither the manufacturer nor the vendor of the CableCARD-reliant device furnishes to purchasers appropriate instructions for self-installation of a CableCARD, and a manned toll-free telephone number to answer consumer questions regarding CableCARD installation but only for so long as such instructions are not furnished and the call center is not offered;

(2) Effective August 1, 2011, provide multi-stream CableCARDS to subscribers, unless the subscriber requests a single-stream CableCARD;

(3) with respect to professional installations, ensure that the technician arrives with no fewer than the number of CableCARDS requested by the customer and ensure that all CableCARDS delivered to customers are in good working condition and compatible with the customer's device;

(4) Effective August 1, 2011, provide, through the use of a commonly used interface and published specifications for communication, firmware-upgradable navigation devices with the ability to tune simultaneously as many switched-digital channels as the greatest number of streams supported by any set-top box provided by the cable operator, or four simultaneous channels, whichever is greater;

(5) separately disclose to consumers in a conspicuous manner with written information provided to customers in accordance with Section 76.1602, with written or oral information at consumer request, and on web sites or billing inserts

(A) any assessed fees for the rental of single and additional CableCARDS and the rental of operator-supplied navigation devices; and,

(B) if such provider includes equipment in the price of a bundled offer of one or more services, the fees reasonably allocable to

(i) the rental of single and additional CableCARDS and

(ii) the rental of operator-supplied navigation devices.

(C) CableCARD rental fees shall be priced uniformly throughout a cable system by such provider without regard to the intended use in operator-supplied or consumer-owned equipment. No service fee shall be imposed on a subscriber for support of a subscriber-provided device that is not assessed on subscriber use of an operator-provided device.

(D) For any bundled offer combining service and equipment into a single fee, including any bundled offer providing a discount for the purchase of multiple services, such provider shall make such offer available without discrimination to any customer that owns a navigation device, and shall further offer such customer a discount from such

offer equal to an amount not less than the monthly rental fee reasonably allocable to the lease of the operator-supplied navigation device included with that offer. For purposes of this section, in determining what is “reasonably allocable,” the Commission will consider in its evaluation whether the allocation is consistent with one or more of the following factors: (i) an allocation determination approved by a local, state, or federal government entity; (ii) the monthly lease fee as stated on the cable system rate card for the navigation device when offered by the cable operator separately from a bundled offer; and (iii) the actual cost of the navigation device amortized over a period of no more than 60 months.

(c) A cable operator shall not provide misleading information regarding the ability of navigation devices to access switched digital channels.

3. Amend 76.1602 to read as follows:

§ 76.1602 Availability of equipment performing conditional access or security functions.

(b) Effective July 1, 1993, the cable operator shall provide written information on each of the following areas at the time of installation of service, at least annually to all subscribers, and at any time upon request:

(7) Effective May 1, 2011, any assessed fees for rental of navigation devices and single and additional CableCARDS; and,

(8) Effective May 1, 2011, if such provider includes equipment in the price of a bundled offer of one or more services, the fees reasonably allocable to

(i) the rental of single and additional CableCARDS and

(ii) the rental of operator-supplied navigation devices.

4. Amend 76.1902 to read as follows:

(s) Unencrypted broadcast television means any service, program, or schedule or group of programs, **that is a substantially simultaneous retransmission of a broadcast transmission (i.e., an over-the-air transmission for reception by the general public using radio frequencies allocated for that purpose) that is made by a terrestrial television broadcast station located within the country or territory in which the entity retransmitting such broadcast transmission also is located, where such broadcast transmission is not subject to a commercially-adopted access control method (e.g., is broadcast in the clear to members of the public receiving such broadcasts), regardless of whether such entity subjects such retransmission to an access control method.**

5. Amend 76.1908 to read as follows:

“Nothing in this subpart shall be construed as prohibiting a covered entity from:

(a) Encoding, storing or managing commercial audiovisual content within its distribution system or within a covered product under the control of a covered entity's commercially adopted access control method, provided that the outcome for the consumer from the application of the encoding rules set out in Sec. 76.1904(a) and (b) is unchanged thereby when such commercial audiovisual content is released to consumer control **and provided that all other laws, regulations, or licenses applicable to such encoding, storage, or management shall be unaffected by this section, or**

APPENDIX C

List of Commenters and Reply Commenters

Commenters:

1394 Trade Association
American Cable Association
ARRIS Group, Inc.
Beyond Broadband Technology LLC
Cable One, Inc.
Jose Cerna
Brian Charbonneau
Charter Communications, Inc.
Cisco Systems, Inc.
Comcast Corporation
Common Sense Media
Consumer Electronics Association & Consumer Electronics Retailers Coalition
Cox Communications, Inc.
Dan Laflin
Dana Mulvany
Digital Living Network Alliance
Digital Transmission Licensing Administrator
EchoStar Technologies, L.L.C.
Chris Edson
Evolution Digital, LLC
Free Press
Greg Friedman
John Gilham
Larry Goldberg
Intel Corporation
IPCO, LLC
John Staurulakis, Inc.
Kaplan
Aaron Ledger
Allen G. Little
Motion Picture Association of America, Inc.
Motorola, Inc.
Multimedia over Coax Alliance
Nagravision
National Cable & Telecommunications Association
NATOA
OPASTCO, NTCA, ITTA, WTA, RICA
Pace Americas, Inc.
Farley Padron
Panasonic Corporation of North America
Allen Parke
Public Knowledge
Bruce Pujanauski
Josh Quigley
Jerald Rasmussen
RVU Alliance

Sweetwater Cable TV Co., Inc.
Telecommunications Industry Association
Texas Instruments Incorporated
Time Warner Cable Inc.
TiVo Inc.
Ben Tusa
Ubee Interactive
U.S. Chamber of Commerce
Verizon
Ronald Vickery
Shane M. Walton
Richard Whited
John Whittle
Scott Ylinen
Zito Media, LP

Reply Commenters:

1394 Trade Association
John Amaral
Bend Cable Communications, LLC d/b/a BendBroadband
Beyond Broadband Technology LLC
Craig Block
Cable One, Inc.
Rob Chauncey
Michael C. Ciavarella
Cisco Systems, Inc
Comcast Corporation
Consumer Electronics Association & Consumer Electronics Retailers Coalition
Digital Transmission Licensing Administrator LLC
Entropic Communications
David L. Flannery
Intel Corporation
Kristopher King
Bryan McMullan
Wes Mills
Montgomery County, Maryland
Nagravision
Sayantan Nandi
National Cable & Telecommunications Association
Scott Ratliff
Sony Electronics Inc.
Texas Instruments
Time Warner Cable Inc.
TiVo Inc.
Jonathan Trudel
Verizon
John Whittle
Chris Woodard

**STATEMENT OF
CHAIRMAN JULIUS GENACHOWSKI**

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

In this order, we take concrete steps to boost competition in the retail market for cable set-top boxes and benefit consumers of pay TV services.

We're under a congressional directive to spur competition in this market, and the Commission previously selected the CableCARD as its main vehicle to do so. But under our existing rules, it's been more difficult for consumers to use set-top boxes *bought* at retail than to use boxes *leased* from the cable operator. And indeed only a tiny fraction of cable subscribers have chosen to buy a set-top box. Consumers who buy a set-top box often find it difficult and time-consuming to get a cableCARD installed in the device, while leased boxes come with the cableCARD preinstalled.

There is also poor pricing transparency of cableCARDS because the cost of the card is often bundled with other equipment and service fees. As a result, consumers often don't know what cableCARDS cost -- making it difficult to make an informed decision whether to buy or lease a box. Consumers have no assurance that their monthly cable bill will be reduced if they buy rather than lease a box. And consumers who surmount all of these hurdles and buy a box anyway may find, to their dismay, that they can't access all channels if their cable operator converts to an all-digital system.

So, as the National Broadband Plan recognized, the current CableCARD approach isn't working. Today we take steps to improve it. The rules we adopt today require comparable treatment of retail and leased devices. They will also ensure that consumers who buy set-top boxes get the equipment credit and services to which they are entitled, creating a level playing field. We're also streamlining the process for getting set-top boxes to market by eliminating unnecessary delays and costs associated with set-top box testing and certification.

We hope and expect that these steps will lead to greater innovation and consumer choice and lower prices in consumer equipment.

Our ultimate goal in this area is to unleash maximum innovation through the TV. We've seen significantly less innovation -- fewer new devices, applications and services -- on the digital TV platform than on the computer or mobile platforms. Greater innovation can not only drive job creation and economic growth, it can help boost broadband adoption, since TVs are in over 90% of people's homes, while computers are in about 76%.

A key element of unleashing innovation through the TV is increased interoperability between a consumer's pay-TV programming stream and the consumer's broadband stream of data -- so that innovators can design applications that integrate pay-TV programming and other Internet content. As the National Broadband Plan described, this could be made possible by a gateway device to the consumer's home that would preserve the integrity of the pay stream, while spurring greater innovation around it in new devices and services.

Our work on the National Broadband Plan suggests that gateway devices and interoperability are keys to unleashing competition and innovation in the retail market with all of the attendant benefits of enhanced consumer choice, increased broadband investment, and greater economic growth.

We're of course cognizant of new developments linking the TV and Internet, and will study those as part of our process to determine how we can most effectively spur innovation in this important market.

Today's adoption of improvements to the CableCARD regime is an important step toward the goal of increased competition and customer choice for TV set-top boxes.

I thank the staff for their excellent work on this item.

**STATEMENT OF
COMMISSIONER MICHAEL J. COPPS**

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

When Congress acted in 1996 to encourage the commercial availability of new video programming navigation devices, most people still had VCRs in their homes, the first High-Definition TV was premiered by Zenith, and Mark Zuckerberg, the founder of Facebook, was 12-years-old. Much has changed since then and technology has gone through multiple revolutions. But other things have stayed relatively the same and, remarkably, we have not yet seen the kind of competition and innovation in the world of set-top boxes and other navigation devices that both Congress and the Commission have tried to encourage. So I'm hoping that the actions we take today will bear more fruit, because we are stuck here in a rut. As my old boss, Senator Fritz Hollings, used to say: "The ox is in the ditch," and I hope this Report and Order will help pull the poor ox out and get him moving again.

In short order, I believe, we will take up the issue of the gateway device more directly, the so-called All-Vid, which will bridge the technologies and allow the broadband world and the TV world to interact as they can and should. This would give broadband adoption a big boost, too, because many more people have a TV in their home than have a computer. So with a gateway device, access to the broadband world can be more readily available.

I would just caution my colleagues on how much work and pushing from this Commission will be required to reach the happy world of gateway device availability. As someone who has lived through this issue for many years, and who watched the tortoise-like and tortured pace of discussions about unidirectionality and bidirectionality---I felt the pain, believe me. We can't do that again, but the sad saga of the CableCARD illustrates the pitfalls that await us at every corner.

To some, the order that we approve today may be seen as the CableCARD fix. It isn't, but it does move the ball forward. I am pleased see and support the common-sense, consumer-minded changes that it takes. One example is allowing consumer self-installation of these devices. That would make sense any time, but in hard times when dollars are scarce, consumers don't need yet another expensive house-call when, very often, they can do the job themselves.

Another issue dealt with in the Order is switched digital. Access to switched digital channels should not be a privilege, but rather a certainty, for those paying for a cable package, regardless of whether they are using a leased box or a retail device. There are makeshift solutions out there by way of tuning adapters. More promising, some companies are experimenting with innovative approaches like using the IP backchannel. While we do not mandate the IP backchannel here as some of us had hoped, we do leave this option available and will revisit a potential mandate if we find non-compliance in the marketplace.

I commend the action that we take today that will establish a venue for consumers to articulate just that type of non-compliance, should it arise. The launch of a consumer complaint webpage by this Order will deal specifically with these issues and will allow for a means to file complaints and to receive necessary information.

I had hoped we could do even more to provide a line-item on consumer bills for the cost of CableCARDS. We couldn't get that far, but we do at least provide for MVPDs to put this information on their website and make it available on the rate card. Some say a line-item on the bill would only confuse consumers in an already-confusing billing environment, and I understand that. But I always believe that you do not confuse consumers by informing them of what they are being charged. It is, after all, their

money. Plus, I think having this kind of information clear to everyone might just speed up the process of getting us to a new world of gateway devices.

In sum, I am happy that we take the steps that we are taking today, I thank the Media Bureau for their hard work on this item and thank you to Marilyn Sonn, who is on detail in the Chairman's office, for taking the bull by the horns in moving this Order to the finish line with all the myriad of technical complexity. I appreciate the leadership of the Chairman on this important issue and also the toil of my colleagues and their hard-working staffs.

**STATEMENT OF
COMMISSIONER ROBERT M. MCDOWELL**

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

Almost fifteen years ago, Congress directed the Commission to adopt regulations to “assure” the development of a competitive retail marketplace for set-top boxes and similar devices used to access multichannel video programming. Specifically, Section 629 of the Communications Act calls for regulations designed to foster the development and sale of “navigation devices” by all sorts of suppliers – including cable operators on the condition that they not cross-subsidize the cost of their boxes with revenue derived from their multichannel video offerings or other services. The statute also bars the Commission from adopting any rules that would jeopardize the security of multichannel video services or thwart the rights of the provider to prevent theft of those service offerings.

Since 1996, the Commission has written many chapters in the long saga to implement Congress’ intent as expressed in Section 629. Our CableCARD rules represent many years of hard work, punctuated by a few years of sheer confusion, in an effort to create a competitive marketplace for cable-ready devices.

Time and experience have made clear, however, that Congress’ goal of creating a robust consumer market for set-top devices has often seemed elusive. In short, consumers who want to take advantage of retail options available today still face practical obstacles that can make third-party devices less appealing.

Nonetheless, precisely because Congress told us to, we are taking another stab at a remedy today. Perhaps this time Sisyphus will get his boulder to actually stay on top of the hill. But should it roll back into the Valley of Unattained Goals, some may want to ask Congress to consider new options.

Throughout this latest chapter, we have worked closely with interested parties such as consumer groups, the cable industry, its competitors, consumer electronics companies and many others. My hope is that today we have forged a workable compromise to the benefit of pay TV consumers. Accordingly,

- I support the new rule requiring cable operators that deploy switched digital video within their networks to ensure that subscribers can access the linear channels for which they have paid, and I am pleased that the regulation allows operators technical options for meeting that mandate.
- I also endorse the new self-installation rule, although I would have preferred a longer ramp-up period for cable operators who currently lack the back-office infrastructure to support consumers who run into problems with self-installs.
- In addition, I am pleased that the new rules provide greater pricing transparency for consumers who want to compare the costs involved with purchasing a box at retail as opposed to leasing a box from their cable operator.
- And I support establishing as a rule the approach the Commission has developed through waivers to allow cable operators to deploy low-end, one-way HD boxes that integrate security and other functionality. Although such devices do not comply with the CableCARD requirements, their relatively low cost should help drive demand for the deployment of digital networks more quickly

while placing more cost-effective navigation power into the hands of consumers. Yet because the new exemption does not extend to high-end devices that can record video or provide interactive features – in other words, the devices that are pouring over the horizon – it should not hinder the development of a more competitive retail market for navigation devices.

- Finally, I support the compromise effort to update our IP-based interface requirements for two-way leased boxes. By designing a rule that focuses on functionalities rather than specified standards, we provide some breathing room for technologists to innovate. I remain somewhat concerned about establishing a hard deadline for certain functionalities that are not yet fully developed, but I appreciate my colleagues' willingness to entertain reasonable requests for extension of that deadline if our prediction about the likely completion date for those features does not prove accurate.

I thank the staff of the Media Bureau and the Office of Strategic Planning and Policy Analysis for their tireless work on this Order.

**STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN**

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

Today's Order promotes choice for cable subscribers and competition among manufacturers and sellers of navigation devices. It also implements a recommendation in the National Broadband Plan to improve the CableCARD rules in the short term, while we consider more far-reaching options for the long-term. I commend the Chairman's leadership and the diligence of the Media Bureau in moving quickly to initiate and complete this rulemaking just seven months after the release of the National Broadband Plan.

We all appreciate the importance to consumers and the competitive market of supporting retail alternatives to equipment leased from cable operators. But: "CableCARD?" Most people outside this building probably don't know what a CableCARD is. More importantly, many cable subscribers aren't aware of their alternative options to leasing a set top box from their cable company. And, even when they are aware, their cable company may not provide the support necessary to permit them to exercise their choice.

The Order addresses these failings in a regime that has been around since 2003. The rules we adopt today will require cable companies to fully support subscribers who opt to buy a cable box at retail. Specifically:

- We require cable companies to provide pricing information, so that consumers can evaluate whether leasing or buying is their best option.
- We require cable companies to allow consumers to install the CableCARD, rather than having to wait for the cable company to come out and insert the card in their cable box for them.
- We require cable companies to eliminate the charges for a leased box when consumers purchase their own box.
- We require cable companies to provide and support additional equipment to work with consumers' equipment when necessary, to access programming on a cable company's switched digital service.
- And we expressly prohibit mis-statements about the capabilities of retail devices to access switched digital channels.

This Order also changes existing rules to reflect advances in technology and to provide industry with the appropriate flexibility for developing future technologies. In adopting these requirements, we have resisted actions that would seem to benefit consumers in the short term, but might have unnecessarily burdened cable operators. I approve the effort to balance the legitimate business needs of cable companies, large and small, as well as the interests of the manufacturers and sellers of navigation devices.

I am also pleased that the FCC is stepping up with additional consumer information, and an improved process for consumers to file complaints if they believe that the cable companies are not doing all that we require.

This Order advances the current regulatory regime, and I am looking forward to the longer term solutions which should provide even more consumer protection and customer choice than we were able to establish for the cable card regime.

I applaud the Media Bureau, and in particular Brendan Murray, who has worked so hard to bring this Order to conclusion, and Alison Neplokh, the new Chief Engineer of the Media Bureau, for her knowledge and leadership on behalf of the Bureau. I also appreciate the collegial and constructive attitude of my fellow Commissioners and our legal advisors in working through the technical and legal issues to reach this balanced result.

And I'd like to add a huge and heartfelt thank you to Eloise Gore, who has been in my office for many months and has given me more wisdom and advice than I can possibly describe. A New Yorker through and through, Eloise is a GIANT on the issues, so don't let her height fool you. She is an absolute force of nature who added so much to me and my team, and I will dearly miss her. Thank you, Eloise, for everything.

**STATEMENT OF
COMMISSIONER MEREDITH A. BAKER**

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

I support today's balanced decision to update our CableCARD rules. We take important steps to bring more transparency and certainty to the provisioning and installation of CableCARD devices consistent with our obligation under Section 629 to promote a retail market for navigation devices. We do so in a manner that balances appropriately the need to promote the retail set-top box market, protect the consumers that rely on that market, and account for the cost and complexity of those changes on cable operators and cable customers. In doing so, I appreciate that the Commission has learned from past failures by adopting a more flexible approach to technological mandates and interface requirements.

I also strongly support the concrete steps we take to provide greater certainty to cable operators to invest in next-generation broadband networks. For too long, our set-top box policy has had the unintended consequence of interjecting legal uncertainty and costs into the efforts of operators to invest in their broadband networks. Specifically, today's action ensures that costly network upgrades are not necessary to support retail navigation devices for switched digital solutions and that high definition digital adapters can be economically and efficiently distributed across cable platforms nationwide.