Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

COMMENTS OF THE
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION ON
FOURTH FURTHER NOTICE OF PROPOSED RULEMAKING

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EXECUTIVE SUMMARY

The cable industry welcomes the Commission's efforts to promote the goals of Section 629 and its recognition that the principles that the cable industry is proposing to provide video content to consumers where and when they want it are "largely supportive of [the Commission's] objectives in launching this proceeding." Cable companies have worked for years to meet the challenges of Section 629 (including the CableCARD regime) and will continue to refine and improve the consumer experience with the use of CableCARDs.

Improving the Consumer Experience

NCTA suggests the following with respect to short-term fixes to the CableCARD regime:

1. DTA Exemption from the Integration Ban. The Commission should adopt its proposal to exempt from the integration ban all SD and HD Digital Terminal Adapters ("DTAs") without recording functionality. Such an exemption would serve consumers by providing an essential ingredient to cable operators' digital transition and the deployment of faster, higher capacity broadband, more HD, VOD and diverse programming, and interactive services. Integrated SD DTAs previously exempted by the Commission have provided a critical low-cost solution for retrofitting consumers' older televisions for continued use with digital systems. But SD is no longer sufficient in a world where more than 110 networks (including all top-rated cable networks) are HD and three-quarters of consumers own HDTVs. This relief should not be limited to cable systems of less than 552 MHz, because higher capacity systems also need to transition to digital and the most important benefits of the relief are to consumers, not to cable systems. In addition, the manufacturing volume needed to produce low cost DTAs will not be met if the exemption is limited to the 8% of systems that are small capacity systems.

2. CableCARD Billing. Cable operators fully support the goals of transparent pricing of CableCARDs. However, the itemization of CableCARD charges (typically $2 or less

and even for free) is unlikely to sway consumers' decisions on whether to buy a retail device. Customers are typically unaware that they lease newer set-top boxes with CableCARDs plugged into them. The addition of a new charge without any change in service may cause confusion and lead consumers to think it is a mistake or a rate increase. Such a requirement would also defeat the interests in simplified inventory control and billing, and the deployment of new technology across a wide footprint that the aggregation statute was designed to serve. This is hard to justify when the Commission has concluded that CableCARDs have failed in their essential purpose and is seeking to phase them out. If needed, a cable operator could clearly identify the imputed charge for a CableCARD in leased set-top boxes on its website, in a notice, or in a rate card.

3. CableCARD Installation. We support the Commission's proposal for self-installation of CableCARDs in retail devices if a cable operator allows self-installation of leased set-top boxes, provided that the manufacturer of the retail CableCARD-enabled device follows current best practices of providing detailed installation instructions, a troubleshooting guide and its toll-free telephone number within the packaging of the device and on its website, and a ready means for customers to access firmware and software updates. We agree with the Commission's proposal that, for professional installations, a technician should arrive with no fewer than the number of CableCARDs (M-Cards) requested by the customer.

4. Certification Requirements. The Commission's proposed clarification regarding testing of UDCPs is consistent with the standards currently applied. CableLabs has worked closely with CE manufacturers to streamline the certification process of all devices so that products can get to market as quickly as possible and manufacturers have an agreed-upon path to self-certification.

5. Interface Requirements. The Commission is correct that its mandate requiring HD set-top boxes to provide a 1394 digital connector is outdated. Other interfaces such as Ethernet, USB, 802.11 (Wi-Fi) and MoCA rapidly overtook 1394 and did so without any government mandate, leaving the 1394 interface among the "Top 10 disappointing technologies" internationally. However, any new rule listing other interfaces or functionalities based upon a snapshot from today will inevitably and quickly become outdated, and is not needed to assure cable operator support for digital video outputs. Even the proposed list is already outdated, omitting key interfaces such as MoCA. Therefore, the regulatory mandate for specific interfaces should be eliminated in favor of rapidly changing marketplace consumer-driven solutions. In any event, the Commission should defer to the *NOI* any consideration of rules regarding bi-directional functionality such as remote control commands. Its remote control proposal here is far too broadly and ambiguously drafted and could not be implemented in the foreseeable future.

6. CEA-NCTA Reporting Requirement. The tru2way MOU between major consumer electronics companies and the six largest cable companies has mooted the requirement that NCTA and CEA file quarterly reports on the status of two-way negotiations and it should be eliminated. To the extent that other negotiations may be taking place, the trade associations are no longer taking the lead role for either side.

7. Pending Petitions. The Commission should grant three long-outstanding petitions dealing with (1) consensus improvements to the testing process; (2) adjustments for M-Cards; and (3) a correction to a definition in the encoding rules.

Tuning Adapters and Switched Digital Video

Tuning Adapters are working today to provide access to switched channels to thousands of customers with retail TiVo and Moxi DVRs and with personal computers. TiVo's request for

an immediate alternative is particularly confounding given that TiVo previously supported the Tuning Adapter solution that the cable industry funded and deployed at TiVo's request.

When the plug and play rules were adopted six years ago, it was well understood that one-way retail devices did not have the capability to receive two-way services like video-on-demand (VOD) that needed to "talk back" to the cable headend in order to function properly. The Commission required CE companies like TiVo, as well as cable operators, to advise consumers of these limitations. Switched Digital Video (SDV), like VOD, requires "talking back" to the headend.

SDV utilizes upstream signaling over the cable return path in order to deliver channels to customers only when they are tuned by consumers, thereby freeing up cable spectrum for more HD channels, more advanced services, and more robust broadband. SDV is one of the critical tools that have enabled operators to launch speeds in excess of 100 Mbps—one of many "significant consumer benefits of SDV deployment" the Commission noted last year in approving SDV deployments.

Three years ago, TiVo approached the cable industry asking for help to enable its one-way CableCARD-enabled DVRs to go beyond their native capabilities and communicate upstream with cable headends to select a switched digital channel. The cable industry voluntarily worked closely with TiVo and others to develop the Tuning Adapter solution. TiVo endorsed it at the Commission last year, has called it "a reasonable, practical solution," and now reports to its customers that "[a]s of today, there are no known issues with Tuning Adapters and Premiere/XL, TiVo HD/XL, and Series3 HD DVRs."

One key advantage of the Tuning Adapter is that it is scaled precisely to its purpose: it is deployed only to those customers who use UDCPs that have a USB port and the necessary

firmware and who wish to receive SDV channels, which is a very small subset of cable customers. The "alternative proposal" now proposed by TiVo would require cable operators to scrap the Tuning Adapter and deploy a nationwide signaling path for one-way UDCPs to connect to SDV servers over the public Internet. This would pose numerous technical issues, all for a very small handful of legacy one-way devices. These issues include determining how to take a secure SDV signaling path designed for guaranteed speed and priority on the cable network and provide the same secure fast tuning experience over the public Internet, and how to address security and authentication holes in the proposal, which as currently framed has no protection against hacking of the SDV server, denial of service attacks, or tuning commands received without entitlement. The TiVo proposal would also require new equipment and engineering throughout each cable operator's network. And it would raise the basic consumer issue of requiring consumers to subscribe to Internet service in order to watch TV. Signaling and delivery in IP and integration of the Internet with video services are legitimate issues to explore, but they are issues for the companion *NOI*, not for a short-term CableCARD fix.

While relatively minor short-term fixes may be warranted, imposing any additional significant or burdensome CableCARD-related requirements solely on the cable industry would be misdirected, particularly given the small number of UDCPs that currently require a Tuning Adapter and the Commission's recognition that various stakeholders should be working towards a more innovative and collaborative future that embraces all MVPDs.

Ending the Burden of the Integration Ban

Last, but certainly not least, the Commission should end the integration ban. Cable operators agree with the Commission that support for CableCARDs should not be abandoned in

the near-term. But the Commission can stop adding to the already excessive cost on consumers of the integration ban without undermining support for CableCARDs.

The Commission has never held that it is necessary for 100% of leased devices to include CableCARDs. Instead, the Commission's approach has been that so long as operators continued to have CableCARDs in some of their devices, they would have the incentive to make CableCARDs work in their systems. The question therefore is not whether all cable devices need to have CableCARDs, but whether enough CableCARDs have been deployed to assure that support. The answer is plainly yes. The ten largest cable operators have now deployed nearly 20 million CableCARDs in their own leased devices, compared to fewer than 490,000 CableCARDs in retail devices. Twenty million devices – more than 40 times the number of CableCARDs used by retail devices – are more than enough to achieve the Commission's common reliance objectives. Moreover, the integration ban has imposed more than a billion dollars in costs on cable operators and consumers, yet there is no compelling evidence of any correlation between CableCARD use in leased devices and the adoption of retail CableCARD devices or other consumer benefits. But even if there were such evidence, there is certainly no evidence that consumers would receive a *commensurate incremental* benefit from continued imposition of the integration ban on devices over and above the 20 million CableCARD devices cable operators have already deployed.

The Commission should therefore find that the cable industry's deployment of 20 million CableCARD devices is sufficient to meet the purpose of the integration ban, rather than unnecessarily forcing consumers to bear millions more in costs in the name of supporting a regime that in any event the Commission wants to replace.

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COMMENTS OF THE
NATIONAL CABLE & TELECOMMUNICATIONS ASSOCIATION ON
FOURTH FURTHER NOTICE OF PROPOSED RULEMAKING

The National Cable & Telecommunications Association (NCTA)[1] hereby submits its comments in response to the Fourth Further Notice of Proposed Rulemaking ("*FNPRM*")[2] in the above-captioned proceedings. The cable industry welcomes this Notice, the companion *Notice of Inquiry* ("*NOI*") and Commission's efforts to further promote the goals of Section 629. As the Commission recognizes in the *NOI*, the video landscape has grown dramatically more competitive since the navigation device provision was enacted as part of the Telecommunications Act of 1996. Four of the ten largest MVPDs now are either direct broadcast satellite (DBS) or telephone companies who collectively serve almost 40 million customers and whose market share continues to grow. There also is now a flourishing and

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[1] NCTA is the principal trade association for the U.S. cable industry, representing cable operators serving more than 90 percent of the nation's cable television households and more than 200 cable program networks. The cable industry is the nation's largest provider of broadband service after investing over $160 billion since 1996 to build two-way interactive networks with fiber optic technology. Cable companies also provide state-of-the-art competitive voice service to more than 22 million customers.

[2] *See* Fourth Further Notice of Proposed Rulemaking, FCC 10-61, 75 Fed. Reg. 27256 (May 14, 2010) ("*FNPRM*").

rapidly-growing market for Internet-enabled devices, including digital TVs, that offer consumers an ever-widening array of choices for video content, information, entertainment, and communications applications. This development is a testament, in part, to the massive investment by the cable industry to innovate and bring broadband to more than 92 percent of American households.

The cable industry is committed to providing video content to consumers where and when they want it, on all possible consumer devices, and for those devices to be innovative platforms for new applications. We want consumers to be able to buy video devices at retail and to know that cable content can be among their video sources. The cable industry stands ready to explore new cross-industry approaches to develop a fully competitive and innovative retail video device marketplace. Indeed, we have called for a broad proceeding on this set of issues for the last three years in order to accomplish this goal. We applaud the Commission's overarching recognition that all video providers must be part of the solution. In order to aid the Commission's consideration of these issues, we proposed earlier this year a series of consumer principles governing video devices that we think can and should serve as the foundation for new, consumer-driven approaches to addressing the future of retail navigation devices.[3] We are pleased that the Commission, in its *NOI*, references our consumer principles and concludes that they are "largely supportive of [the Commission's] objectives in launching this proceeding."[4]

The *FNPRM* correctly recognizes that the cable-centric CableCARD regime has not fulfilled the goals of Section 629, despite the best efforts of the Commission, the consumer electronics ("CE") industry and the cable industry, and that it may well be outdated. The *FNPRM* identifies several issues with the CableCARD regime for which it proposes short-term

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[3] *See* Exhibit A (Letter from Kyle McSlarrow, NCTA, to Chairman Julius Genachowski, FCC (March 12, 2010)).

[4] *NOI*, ¶ 14.

"fixes" "until the successor solution [applicable to all MVPDs] becomes effective."[5] We remain willing to continue working to resolve any lingering CableCARD implementation issues, even as we turn the page to begin exploring more viable long-term approaches.

I. REFORMING THE CABLECARD SYSTEM

A. The Commission Correctly Concludes that the CableCARD Regime Is Not a Viable Long-Term Solution

The *FNPRM* asks whether technical developments over the last decade have overtaken the CableCARD model, and it tentatively concludes that it is "not a viable long-term solution." The *FNPRM* nonetheless proposes that, rather than abandoning the CableCARD regime in the near term, it should be improved with some "relatively minor adjustments" as a new retail model develops.

NCTA agrees that CableCARDs have not been successful in fulfilling the goals of Section 629, but not for lack of effort. Unlike our DBS and most of our telephone company competitors, cable companies alone have worked to meet the challenges of Section 629 (including the CableCARD regime) throughout a period of tumultuous changes in technology, the economy, and the competitive market. Cable operators and major CE manufacturers negotiated the landmark "plug and play" agreement for "unidirectional" digital cable-ready products ("UDCPs"), which was largely incorporated into the Commission's rules. Then – without regulatory compulsion – the cable and CE industries created informal mechanisms to effectively handle the field issues that inevitably arose with the rollout of new and complex technology. Without regulatory compulsion, the cable industry worked cooperatively with Microsoft and other IT parties to allow consumers to add cable channels for viewing on their personal computers ("PCs") with CableCARD-enabled devices. The cable industry also

[5] *FNPRM*, ¶ 1.

developed multi-stream CableCARDs ("M-Cards") for use in retail products, enabling consumers to watch and record different channels simultaneously using the same CableCARD. And the cable industry moved forward with the tru2way platform to bring interactive services such as video-on-demand ("VOD") to retail and leased devices alike.

There were the usual start-up issues that accompany the introduction of new technology, exacerbated in this instance because the cable and CE industries were both introducing products with new technologies that had to be married in the consumer's home – the operator-provided CableCARD and the retail plug-and-play device. Nonetheless, there are now almost 20 million operator-provided, CableCARD-equipped set-top boxes deployed, which are supplied by a growing number of competitive consumer electronics manufacturers, including Pace, Motorola, Cisco, Thomson, Evolution Broadband, Samsung, Panasonic, TiVo, ARRIS (Moxi), ADB, and Ceton. However, fewer than 490,000 CableCARDs have been deployed for use in retail CableCARD-enabled devices by the nation's ten largest cable operators, despite the expenditure by cable operators of over a billion dollars in additional costs outfitting its own set-top boxes with CableCARDs.[6]

The fact that consumers have shown little interest in buying these one-way retail devices is not surprising. First, the CableCARD requirement was imposed only on cable operators, in an era when an increasing proportion of consumers purchase their multichannel video services from a provider other than a cable operator. A CableCARD-enabled retail device will work without an operator-supplied set-top box on cable systems across the country, but the consumer who purchased such a device will need a set-top box to enable that device to work with DISH, DirecTV, or AT&T.

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[6] *See* Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80 (Mar. 31, 2010) ("*March 2010 CableCARD Status Report*").

Second, the option of leasing, rather than buying, devices is preferable for many consumers. Leased devices are available at government regulated "cost-plus" rates (or rates which are otherwise kept low in markets where effective competition exists). At the customer's choice, they can be upgraded when a consumer transitions from SD to HD or a newer model is released, rather than the consumer assuming the risk of technological obsolescence when he or she purchases a device at retail.[7] In comparison to leasing at cost with the flexibility to upgrade at any time, buying and committing to a retail product looks far less appealing.[8]

Finally, as the Commission also recognizes, "one-way" retail devices were brought to market just as consumers were becoming increasingly interested in on-demand and other interactive cable services, which one-way devices did not provide. Cable worked with major CE manufacturers and digital television makers to develop the Java-based tru2way solution as the national digital cable-ready two-way "plug-and-play" standard. With this approach, consumers could go into a retail store, buy a flat screen tru2way high-definition television, take it home, and access any cable service without having to use a set- top box and with just one remote control. Major cable operators reached agreement – embodied in a binding Memorandum of Understanding (the "tru2way MOU") – on this approach with consumer electronics manufacturers, including Sony, Panasonic, Samsung, LG Electronics, and Funai (known in the

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[7] Consumer Reports has recommended that consumers should lease rather than buy their DVR set-top boxes, *see* "Digital Recorders: Lease a Model in this Time of Transition," CONSUMER REPORTS (Nov. 2006) at 35, and the Commission itself seeks comment in its *NOI* on "whether consumers prefer to lease at government-regulated 'cost-plus' rates, whether consumers wish to avoid the risk [of] obsolescence of navigation devices, and whether the inability to 'port' a retail navigation device when he or she changes MVPDs limits the attractiveness of the retail option."

[8] Online consumer advisories still note that leasing is a better deal than buying. *DVRs - Digital Video Recorders: Reviews Updated May 2010*, http://www.consumersearch.com/dvr-reviews ("Though not as sophisticated as the TiVo Premiere, a DVR from a cable provider still offers good performance and is the least expensive solution for most cable subscribers."); *see also HD TiVo Price Drop Coming This Year*, TG DAILY, http://www.tgdaily.com/content/view/31208/97 (Mar. 12, 2007) ("The Series 3 recorder has seen disappointing sales, mainly because of the prohibitive price of $800. Most owners of HD DVRs lease a unit from their cable or satellite provider for around $10 a month."). After several price decreases, TiVo's CableCARD-equipped Premier has crept back up to $300-500 upfront plus $12.95/month.

United States under the brand names Philips, Magnavox, Sylvania, and Emerson); set-top makers ADB and Digeo, and chip manufacturer Intel.[9] Numerous other CE and IT companies have also signed technology licensing agreements to develop and produce tru2way devices and applications even though they are not parties to the tru2way MOU. In addition, CableLabs has held a number of productive tru2way Developers' Conferences, which provide a forum where cable operators, consumer electronics equipment manufacturers, content providers, application developers, and other stakeholders can learn about and exchange information on the tru2way initiative. While tru2way can address consumer concerns about service limitations of "one-way" CableCARD-enabled devices, it is clear that, as of today, few CE manufacturers have gone to market with tru2way. The only real way to fulfill the goal of Section 629 is to explore how best to ensure that consumers can be provided the option of purchasing devices at retail that access and work with all multichannel video platforms.

NCTA's cable operator members have a strong incentive to assure that their customers who do choose retail devices are satisfied with the provision, installation, and support of CableCARDs in retail devices. Many of these customers purchase broadband and telephone service, and of course all of them purchase video services from the cable operator. Cable operators have a strong interest in seeing that the customer's CableCARD experience is as seamless and hassle-free as possible, or risk losing that customer to an MVPD competitor. We understand that we have an obligation to continue to refine and improve the consumer experience with the use of CableCARDs.

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[9] *See* CS Docket 97-80, Letters from Kathryn Zachem, Comcast, to Monica Desai, Media Bureau Chief (May 28, 2008) (summarizing the tru2way MOU) and June 10, 2008 (attaching its text), and Joint Status Report of the National Cable & Telecommunications Association and the Consumer Electronics Association (July 29, 2008) (advising that the tru2way MOU had also been signed by additional parties).

Therefore, we are not proposing to abandon CableCARDs. But in crafting short-term fixes, it is important not to "double down" on past mistakes. While relatively minor short-term fixes may be warranted, we firmly believe that imposing any additional significant or burdensome CableCARD-related requirements solely on the cable industry would be misdirected, particularly given the Commission's drive towards a more innovative and collaborative future that embraces all MVPDs. Indeed, as we discuss below, it is in the public interest to scale back some of the existing unnecessary and costly CableCARD requirements, particularly by ending the costly integration ban, as the Commission, consumers, and affected industries move on to the world envisioned in the *Notice of Inquiry* in this proceeding.

B. The Commission Correctly Concludes That Integrated HD Digital Terminal Adapters ("DTAs") Will Benefit Consumers by Promoting Cable's Transition to Digital

The *FNPRM* proposes to exempt all DTAs – both SD and HD – from the integration ban. If the Commission does not eliminate the integration ban in its entirety (as NCTA urges in Section IV *infra*), it should adopt this proposed exemption to the ban which would serve the consumer by promoting cable's transition to all-digital services, the deployment of more HD and interactive services, and the accelerated introduction of more robust, higher capacity broadband services.

The Commission has repeatedly recognized the substantial public benefit of cable's transition to all-digital networks. Digital cable offers consumers numerous new and improved capabilities, including more advanced parental controls, an interactive program guide, video-on-demand, greater channel capacity, better picture quality and specialized programming and packages such as international and other diverse programming. Even more importantly, cable's digitization frees up bandwidth for delivering broadband with greater throughput and capability. The marketplace has already embraced digital – from these ever expanding digital and HD cable

services to DBS, telephone and broadcast offerings that are already all-digital.

The ability of cable operators to recover and repurpose spectrum has been the foundation for these services, and is a prerequisite to delivering on the National Broadband Plan's goal of 100 Mbps broadband service.[10] Likewise, the Commission's prior orders have recognized the great value of adjusting the rules to facilitate an early transition to all-digital. These orders found that such relief "would allow [the operator] to reclaim a considerable amount of spectrum … which would enable it to provide consumers with advanced telecommunication capabilities, thereby furthering the goals of Section 706."[11]

The proposed rule would advance these Commission goals by allowing all MVPDs to place into service "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 but do not perform recording functions."[12] In other words, this change would extend the relief that the Commission has previously granted for many SD DTAs[13] to all models of SD and HD DTAs that do not include recording functions. Consumers would benefit enormously if this proposed DTA relief were granted nationwide for all MVPDs. Low-cost DTAs are a vital tool for all cable systems and cable customers. The Commission has correctly observed that the

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[10] *See Connecting America: The National Broadband Plan* at 9 (Mar. 16, 2010).

[11] *Bend Cable Communications, LLC d/b/a BendBroadband Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, CSR-7057-Z, Memorandum Opinion and Order, DA 07-47, ¶¶ 24-25 (rel. Jan. 10, 2007); *GCI Cable, Inc. Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, CSR-7130-Z, Memorandum Opinion and Order, DA 07-2010 (rel. May 4, 2007); *Millennium Telcom, LLC d/b/a OneSource Communications Request for Waiver Section 76.1204(a)(1) of the Commission's Rules*, CSR-7129-Z, Memorandum Opinion and Order, DA 07-2009 (rel. May 4, 2007); *Consolidated Requests for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, Memorandum Opinion and Order, CS Docket No. 97-80, DA 07-2921 (rel. June 29, 2007) (as corrected by Erratum rel. July 6, 2007); *Consolidated Requests for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, Memorandum Opinion and Order, CS Docket No. 97-80, DA 08-437 (rel. Mar. 19, 2008).

[12] *FNPRM*, ¶ 22.

[13] *See, e.g., Evolution Broadband, LLC's 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*, Memorandum Opinion and Order, 24 FCC Rcd 7890 (2009) ("*Evolution Broadband Waiver Order*").

"availability of low-cost boxes" is an essential ingredient to cable operators' digital transition and has granted waivers to make such equipment available to consumers.[14]

Starting with the *Evolution Broadband Waiver Order*,[15] the Commission has waived the integration ban for certain models of one-way SD DTAs to allow all cable operators to upgrade to digital. SD DTAs are simple low-cost devices that can be connected to older televisions, and translate the digital signals as necessary to allow them to be viewed on older equipment. This preserves the usefulness of the consumer's home equipment, while allowing the cable system to repurpose bandwidth for popular new services like "wideband" Internet access, more HD channels, more long-tail, foreign language and other niche programming, and other new services. The Commission explained that it sought to "strike the proper public interest balance by narrowly tailoring the waiver standard to address a specific governmental interest: preserving a low-cost set-top box option for subscribers that allows them to view digital cable programming on analog television sets."[16]

These waivers have facilitated the widespread deployment of DTAs and greater digital capacity. Comcast, for example, is using SD DTAs as part of its efforts to reclaim analog channels for faster Internet and significantly more HD and foreign language programming. Insight Communications recently announced that it would convert its Lexington, Kentucky cable system to all-digital using DTAs, which will enable it to deliver 100 HD channels, a 50 Mbps broadband service, and multi-room DVRs.

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[14] *See Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Second Report and Order, CS Docket 97-80, 20 FCC Rcd 6794, 6814-15, ¶ 37 (2005) ("The availability of low-cost boxes will further the cable industry's migration to all-digital networks, thereby freeing up spectrum and increasing service offerings such as high-definition television.") ("*Second Report and Order*").

[15] *See Evolution Broadband Waiver Order*, 24 FCC Rcd at 7894-95.

[16] *Id*., ¶ 12 (citing *Second Report and Order*, 20 FCC Rcd at 6814-15, ¶ 37).

However, SD DTAs are no longer sufficient to meet the demands of consumers because they cannot support the delivery of HD content. In 2005, when the Commission sought to draw a line between advanced devices and low-cost basic devices, HD was an expensive feature demanded by a minority of consumers. Today, approximately three-quarters of consumers own HDTVs, up from 16% in 2005, and near-universal adoption is expected within two years.[17] HDTVs were once very expensive, but are now far more affordable—some costing less than an HD CableCARD set-top box. Thus, the secondary televisions in a consumer's home, on which the consumer is more likely to be satisfied with fewer cable services, are much more likely to be HDTVs than in 2005. And consumers will increasingly want to view HD content on those televisions. There are more than 110 HD networks today and all of the top-rated cable networks are simulcast in HD and SD formats.

An SD DTA is therefore not an effective solution for these secondary HD television sets. A customer could use a splitter and a switch to access a few over-the-air HD channels, but that is an awkward and incomplete solution at best since cable HD channels are not available off-air and some customers cannot receive the over-the-air broadcast networks in their areas. Alternatively, the consumer could lease a fully-featured interactive set-top box (loaded with the expense of a CableCARD) for each TV, or pay even more for a retail CableCARD-enabled HD device. But that approach fails the Commission's objective of assuring a low-cost option for consumers to enable cable's digital transition. Therefore, any new plans to transition additional

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[17] *See* SNL Financial, Press Release, *SNL Kagan Expects HDTV Sales to Rebound in Late 2009 and Continue Strong into 2010* (Sept. 29, 2009), http://www.snl.com/SNL-Financial/Press_Releases/20090929.aspx (estimating that 71% of total TV households (roughly 82.3 million homes) owned HDTVs in mid-2009, up from 16% in 2005, and projecting that "by 2010-2011, we should see mass adoption begin to take hold, with over 80-90% penetration of TV households … [and] past 2012, we project almost all TV households will have at least one HDTV.").

cable systems to all-digital will increasingly need a low-cost HD device to be successful with consumers.

For this reason, last year the Bureau granted a waiver to Cable One to use integrated HD DTAs in one of its systems that it sought to transition to digital.[18] The Bureau explained that while HD video programming may have been an "advanced" service in 2005, it has become "commonplace" today.[19] The Bureau pointed out that consumers increasingly purchase HD-capable televisions as their second and third television sets, seeking only one-way programming services for these televisions.[20] The waiver order concluded that "it is appropriate to add HD functionality to the list of one-way capabilities that can qualify for a waiver of the general rule."[21] In addition, it stated that there is "no reason to provide a regulatory incentive to deprive consumers of the HD-quality programming they expected and paid for when they purchased their sets."[22]

Unfortunately, Cable One's customers still have not received the benefit of this decision. The waiver proved to be too narrow, as it was limited to a system that is far too small to create the manufacturing volume needed for low pricing.[23] Cable One was unable to complete its digital transition on schedule because it was unable to acquire HD DTAs at the budgeted price. So it returned to the Bureau to ask for an expansion of the waiver to more systems. By

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[18] *See Cable One, Inc.'s 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,* Memorandum Opinion and Order, 24 FCC Rcd 7882 (rel. May 28, 2009) ("*Cable One Waiver Order*").

[19] *Id.*, ¶ 12.

[20] *Id.*

[21] *Id.*

[22] *Id.*

[23] *See* Letter from Arthur H. Harding, Counsel to Cable One, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket 97-80, CSR 8080-Z (Feb. 25, 2010) (explaining that Cable One was seeking extension of the waiver to many more systems because "the initial 20,000 [HD DTA]-box order required for Dryersburg [the system that received the waiver] is too small to meet the $50 price point necessary to offer such devices to consumers for $0-1 per box as promised in Cable One's original waiver request").

expanding the exemption to all cable systems, the Commission can open the market to the necessary volume, and extend the benefits of digital to many more consumers. At the volume enabled by the *FNPRM*'s proposal, HD DTAs would likely cost cable operators $50 or less per device compared to approximately $300 or more for a typical HD CableCARD set-top box.[24] This low price point would enable cable operators to provide HD DTAs to customers at little or no additional charge.

The *FNPRM* asks whether in the alternative this proposed rule should be applied only in cable systems with a capacity of less than 552 MHz, which is approximately 8% of cable systems.[25] The answer is no, because the most important benefits of the relief are to consumers, not to cable systems.

Most cable systems of all capacities in the United States are not yet all-digital. The customers of all of these systems will desire the 100 Mbps broadband envisioned by the National Broadband Plan, as well as more HD content and other new bandwidth-intensive services in the future. Thus, in terms of Commission broadband policy, going all-digital is not just a small system issue. If the Commission wishes to achieve the goal of providing 100 Mbps Internet access to 100 million homes, then it should not constrain the recovery of the cable spectrum needed to bring "wideband" Internet to these households. There is no sensible reason to limit these benefits to the single-digit percentage of consumers who are served by small-capacity cable

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[24] *See* Evolution Broadband, LLC Request for Waiver of 47 C.F.R. § 76.1204(a)(1), CSR-____, Petition for Waiver (July 31, 2009) at 8 ("currently available CableCARD-compliant HD set-top boxes cost[] approximately $300 to $325 each").

[25] *See* Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, NBP Public Notice #27; GN Docket Nos. 09-47, 09-51, 09-137 (April 8, 2010) (explaining that these small-capacity cable systems constitute only 8% of all cable systems and cover an even smaller percentage of all cable subscribers); *see also* Letter from Megan M. Delany, Vice President and Senior Counsel, Charter Communications, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, GN Docket Nos. 09-47, 09-51, 09-137 (Apr. 14, 2010) (reporting that only 7% of Charter's customers are served by small-capacity systems).

systems. In fact, such a limitation would limit the effectiveness of the relief even for that small minority of consumers served by such systems, because HD DTAs would be more expensive or unavailable if they could only be used in a small fraction of cable systems. And worse, a rule that restricted HD DTAs to small-capacity systems could inadvertently discourage operators who use the exemption from upgrading their plant capacity beyond 550 MHz in the future.[26]

Public Knowledge has asserted that exemptions from the integration ban for DTAs deprive CE manufacturers of "economies of scale needed" to build "compliant" non-integrated DTAs to sell to cable operators.[27] But retail manufacturers have had an open field since 2004 to build low-cost set-top boxes and not one has risen to the occasion. NCTA expects that HD DTAs would be available for approximately $50 or less. There is no evidence that any manufacturer can and will build a CableCARD-equipped device at or below this price point. Thus, it is inevitable that continued unnecessary application of the integration ban to one-way HD DTAs will cost consumers money. For that reason, it would unnecessarily hurt some consumers for no compelling benefit in return to restrict this relief to low-capacity cable systems.

The *FNPRM* also asks "whether this limited modification would affect the retail market for retail CableCARD devices substantially."[28] It would not. Cable operators have already

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[26] Similar unintended freezes on technology upgrades have resulted under the integration ban before. For example, Baja Broadband reported to the Commission that it had deferred upgrading five analog-only systems to offer digital services because such an upgrade would expose the systems to the integration ban for the first time. *See* CSR-7111-Z, *Orange Broadband Operating Company, LLC and Carolina Broadband, LLC Request for Waiver of 47 C.F.R. § 76.1204(a)(1)*, First Amended Request for Waiver at 4 (2009) ("Baja has also had to reduce its marketing of digital services and defer upgrading its five analog-only systems to digital in order to reduce demand for CableCARD set-top boxes that it cannot afford to buy. Although the integration ban does not apply to its analog-only systems … Baja is deterred from upgrading these systems to digital because those systems would then become subject to the costs of the ban.").

[27] *See* Letter from John Bergmayer, Staff Attorney, Public Knowledge, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, CSR-7902-Z (April 5, 2010) (asserting that integration ban exemptions "prevent creators of compliant devices from achieving the economies of scale needed to bring costs down").

[28] *FNPRM*, ¶ 22.

deployed approximately 20 million CableCARD-equipped set-top boxes – forty times the number of CableCARDs in retail devices. These 20 million devices will represent a significant percentage of the cable industry's set-top box inventory until well after the Commission's target 2013 date for a replacement regime. Additional reliance on CableCARDs above and beyond these 20 million devices is entirely unnecessary to assure that CableCARDs will continue to work in cable systems. And if the Commission does not eliminate the integration ban in its entirety, operators would still be required to use CableCARDs in their new advanced set-top boxes, as the *Cable One Waiver Order* recognized.[29]

An exemption for HD DTAs also would have no effect on navigation device competition since there is no retail marketplace for DTAs that have no recording capability. The only one-way navigation devices being sold at retail today (*i.e.*, those manufactured by TiVo and Moxi) are desired by consumers primarily for their recording capability. A consumer who is willing to pay hundreds of dollars for a TiVo or Moxi DVR will not settle for a non-recording DTA instead.

In sum, HD DTAs will deliver consumers better broadband and more content for less money without undermining the integration ban or the retail market. The Commission should therefore adopt its proposed rule and permit all operators to deploy integrated SD and HD DTAs.

C. CableCARD Pricing and Billing

The *FNPRM* proposes to require cable operators to state CableCARD charges as a separate line item on subscribers' monthly bills in addition to the charge for leased host devices and it seeks comment on measures for promoting transparency and consumer understanding

[29] *Cable One Waiver Order*, ¶¶ 13-14.

about charges for CableCARDs and leased set-top boxes.[30] Cable operators fully support the goals of transparent pricing and consumer understanding. Although there may be room for improvement, cable operators meet these objectives today.

Cable operators provide CableCARDs to consumers based on their cost or less. Whether their cable systems are subject to effective competition or not, the major cable operators have established the lease prices for CableCARDs at or below the maximum rate derived from the equipment rate formula set forth in Section 76.923 of the Commission's rules and set forth in the Commission's Form 1205. This model provides for recovery of cost plus a prescribed rate for return on capital. CableCARD prices are typically listed in rate cards and/or are posted to the operator's web site. In addition, the five largest cable operators report these prices on a quarterly basis to the Commission. Where cable operators charge for CableCARDs, the typical price is approximately $2 or less. Some operators charge less than the amount calculated using the Commission's cost recovery standards. For example, Comcast, the nation's largest MVPD and supplier of the most CableCARDs, does not charge customers at all for the first CableCARD used in each outlet.

Cable operators also provide set-top boxes to consumers at cost using the same Commission cost recovery standards detailed in the Commission's Form 1205, and typically post their lease prices in rate cards and/or on their web sites. As expressly authorized by Congress in Section 623(a)(7), cable operators typically aggregate their equipment "into broad categories, such as converter boxes, regardless of the varying levels of functionality of the equipment within each such broad category."[31] Thus, many operators aggregate older integrated devices and newer non-integrated devices in the same rate calculation. This assists greatly in inventory

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[30] *FNPRM*, ¶ 15.

[31] 47 U.S.C. § 543(a)(7)(A).

control, billing, and the deployment of new technology across a wide footprint. The use of the standard aggregation accounting permitted new CableCARD-enabled devices to be inventoried, deployed, and swapped for older set-top boxes at standard average set-top prices. This facilitated the deployment of CableCARDs in leased set-top boxes.

Under current rules, customers who lease a set-top box are subject to the rental fee charged by the operator for the set-top box, whether or not it has a CableCARD. The rule proposed in the *FNPRM* appears to call for one line item on a customer's bill for the CableCARD installed in the leased host set-top, and a second line item for the host set-top. We do not believe that this approach will advance the Commission's navigation device goals or deliver a compelling benefit to consumers.

As an initial matter, CableCARD lease charges, which are typically $2 or less, are unlikely to be a substantial factor in most consumers' decisions whether or not to purchase a retail device. TiVo users pay $12.95/month for TiVo service in addition to the $300-500 upfront purchase price, so the CableCARD is only a small fraction at most of the total cost of ownership.[32] We are aware of no evidence that customers who do not purchase retail devices today would be materially more likely to do so if their leased equipment charge were broken into two pieces on the bill. In fact, if anything, the opposite would be true. If the CableCARD charge were separately stated and, for example, the charge for a $10 device would be restated as $8 for the box plus a $2 CableCARD charge, then the nominal lease price for the set-top box

[32] *See Baja Broadband Operating Company, LLC's Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, CSR-7111-Z, Memorandum Opinion and Order, DA 10-373, ¶ 13 (rel. Mar. 4, 2010) ("Baja soundly refuted CEA's assertion that TiVo devices are available at a price point that is competitive with refurbished devices") (citing CSR-7111-Z, Reply Comments of Baja Broadband at 4-6 (Aug. 31, 2009) (detailing retail pricing and service charges for CableCARD TiVos)). Subsequently, TiVo released its CableCARD-ready Tivo Premiere and Premiere XL, which retail for $299.99 and $499.99 plus monthly service. *See* https://www3.tivo.com/store/home.do.

would appear to be even less than previously stated, making the decision to purchase a more expensive device at retail even less attractive.

What a change in billing format would do, however, is confuse and upset many customers, no matter the extent to which the operator attempted to educate customers that the change did not increase the overall amount of their bill. This new charge would appear without any change in service, so some customers would think it is a mistake or a rate increase. The proposed new rule also would require cable operators for the first time to sort customers by whether they had older integrated set-top boxes or CableCARD devices, even though that distinction makes no difference to the user. Many customers would not understand that there are CableCARDs inside their devices, while others will be confused as to why their neighbor or a poster on an Internet message board (who happen to have older integrated devices) do not have the same charge on their monthly bill.[33] This change would therefore generate many customer service calls and considerable concern from consumers.

The Commission's statement to the Office of Management and Budget acknowledges that the proposed rule change would affect more than 500,000,000 customer bills per year, but remarkably asserts that each of these instances would cost the cable operator only two-tenths of one cent.[34] Responding to questions and complaints from confused customers will alone cost far more than the Commission's projection. Furthermore, some operators are already limited by their billing vendor in the number of line items that can appear on a bill. It also is unclear how such an itemization requirement for CableCARD charges would advance the Commission's

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[33] These consumers are unlikely to be assuaged by the explanation that they are paying $2 extra per month for no additional functionality in order to provide "common reliance" by cable operators on CableCARD technology on the theory that it would benefit retail UDCP purchases that they themselves have not made.

[34] The Commission projected an annual cost of $1,136,912 for 511,200,000 affected invoices. *Federal Communications Commission Supporting Statement: Commercial Availability of Navigation Devices*, OMB Control Number 3060-0849, May 14, 2010, available at http://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=201005-3060-011.

navigation device goals at the very moment that the Commission has concluded that CableCARDs have failed in their purpose and is seeking to phase them out.

Cable operators are not opposed to informing customers with leased devices of the portion of the lease that is attributable to the CableCARD and the portion that is for the host device. If the Commission believes that this will serve the interests of transparency, a cable operator that charges for CableCARDs could clearly identify the imputed charge for a CableCARD in leased set-top boxes on its website, in a notice, or in an annual rate card.[35] For customers who typically read information in notices that operators provide to them, this alternative would be equally effective to a monthly billed charge. The customers who do not read such information are the same ones that would be confused by a new line-itemed CableCARD charge because they would not understand why it suddenly appeared or what it is for. This alternative would have better practical utility and would reduce the burden of the information collection both on small and large cable operators as well as for consumers by reducing confusion.

The Commission also seeks comment on its legal authority to impose a line-itemization requirement. While Section 629 provides the Commission with some authority with respect to navigation devices, that authority is not unbounded particularly with respect to charges for operator equipment. Since at least the 1984 Cable Act, Congress has been explicit in limiting the Commission's rate regulation authority to the terms of Section 623. In its current formulation, the Act provides that "No Federal agency or State may regulate the rates for the provision of cable service except to the extent provided under this section and section 612 [the leased access

[35] For example, a notice could state that a CableCARD rents for $2 per month and that the price for leased set-top boxes which include CableCARDs includes the same charge for the CableCARD. Of course, if the retail price for a CableCARD is zero, the imputed cost would also be zero.

provision]." The Act precludes regulation in areas of effective competition and mandates that the Commission *permit* equipment aggregation.

The rule for equipment aggregation (Section 623(a)(7)) was adopted in the same Act as Section 629 and the two sections must be read together when implementing Section 629. Indeed, Section 629 contains within it the caveat that: "Nothing in this section shall be construed as expanding" the Commission's prior authority. Also since 1984, Congress made clear that even measures adopted in the name of consumer protection may not supersede these terms.[36] For these reasons, there is a significant question whether the Commission has authority under Section 629 – or any other statutory provision – to adopt its proposed billing rule which appears inconsistent with statutory mandates limiting rate regulation and permitting equipment aggregation.

D. CableCARD Installation

The *FNPRM* proposes to require cable operators to allow self-installation of CableCARDs in retail devices if they allow self-installation of leased set-top boxes.[37] Cable operators want the retail experience to be as convenient and customer-friendly as possible and welcome the Commission's consideration of the installation experience.

In general, professional installations of CableCARDs were necessary for the first generation of UDCPs. The first UDCPs that went into the market did not include instructions for CableCARD installation (such as step-by-step on-screen guides or even adequate written owners' manuals) and their manufacturers generally did not provide significant customer support. In addition, some of these UDCPs were unreliable and generated frequent troubles

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[36] The definitive House Report accompanying the 1984 Act explains, for example, that "A State or franchising authority may not, for instance, regulate the rates for cable service in violation of section 623 of Title VI, and attempt to justify such regulation as a 'consumer protection' measure." H.R. Rep. No. 98-934, 98th Cong., 2nd Sess. 79.

[37] *FNPRM*, ¶ 16.

during installation.[38] A self-installation option in such circumstances would have led customers to spend significant time on the phone with the cable company's telephone support (which is still costly to the operator even though it does not charge for it) followed by a truck roll in any case. During this period, had cable operators wanted to discourage the adoption of retail devices, they might have *required* self-installation of CableCARDs.

The situation today is somewhat different. TiVo provides detailed installation instructions to its customers that TiVo developed in coordination with major cable operators. Comcast, for example, has now had favorable experiences with customers self-installing CableCARDs in TiVos. Moxi also provides customer support for its CableCARD-enabled devices. However, there is no assurance that other CE manufacturers will be as supportive of their customers in the future. Accordingly, NCTA could support the proposed rule if, in addition to being applicable only when a cable operator itself offers self-installation for leased set-top boxes, it is limited to requiring a self-installation option for devices for which the manufacturer provides (1) detailed installation instructions, a troubleshooting guide and its toll-free telephone number within the packaging of the device and on its website, and (2) a ready means for customers to access the CE firmware and software updates (such as an automatic process over an Internet connection).

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[38] *See* Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 2 (Oct. 3, 2005) (NCTA CableCARD Status Report detailing problems with host devices that had firmware deficiencies and had not received updated firmware from their manufacturer, devices not responding to any of multiple CableCARDs, vulnerability in some devices to bending of pins in the CableCARD slot if card was not inserted carefully); *see also* Reply Comments of the National Cable & Telecommunications Association, CS Docket No. 97-80, at 26-27 (Feb. 6, 2006) (noting that "CE manufacturing problems have led to many of the customer frustrations with CableCARD-equipped DTV sets," and explaining that "customers are being faced with DTVs that cannot tune to specific channels, or suffer other problems, because the manufacturer failed to load the proper firmware.").

The *FNPRM* also proposes a new rule to require cable operators to bring to an installation the number of CableCARDs requested by a customer.[39] Cable operators go to great lengths to make the initial installation experience successful, but inevitably there are occasions when repeat visits are required – for many customer needs, not merely CableCARD installations.[40] Nonetheless, NCTA does not object to the proposed rule for professional installations requiring that a technician should arrive with no fewer than the number of CableCARDs requested by the customer.

E. Multi-stream CableCARDs

The Commission proposes a new rule that would require MVPDs to provide a multi-stream CableCARD to any subscriber who requests one.[41] NCTA has no objection to such a rule. Indeed, working closely with TiVo and other industry players, the cable industry voluntarily invented and developed the "M-Card," and major cable operators have offered them since 2007. M-Cards can decode at least four streams of video simultaneously, whereas single-stream CableCARDs can decode only one channel at a time. M-Cards thus enable consumers to watch one program while recording others with only one CableCARD.

As the Commission considers its rule with respect to M-Cards, it should also consider proposed changes to that rule previously jointly submitted by the cable and consumer electronics industries. In 2006, the cable industry negotiated and jointly proposed changes to the plug-and-play rules with TiVo and five other consumer electronics companies to include appropriate

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[39] *FNPRM*, ¶ 16.

[40] The Commission correctly observed in the *FNPRM* that, with so few retail CableCARD devices in use by consumers, it is inevitable that the occasional CableCARD customer may run into an installer or customer service representative who makes a mistake in dealing with an unfamiliar retail device, despite their training. *FNPRM*, ¶ 9.

[41] M-Cards are designed to be backwards compatible with all UDCPs, but some older UDCPs appear to function better with S-Cards. Cable operators may therefore also maintain an inventory of S-Cards to use where appropriate.

references to M-Cards and device interaction with M-Cards.[42] The Commission has not yet taken action on those consensus amendments. In updating its rules to call for the provision of M-Cards on request, the Commission should also adopt those consensus changes.[43]

F. CEA-NCTA Reporting Requirement on Two-Way Discussions

The Commission asked whether it should continue to require NCTA and the Consumer Electronics Association ("CEA") to file quarterly status reports on the status of their two-way negotiations.[44] The adoption of the tru2way MOU has mooted this requirement. NCTA and CEA reported on the initial signing of the MOU in their Joint Report for May 30, 2008 and reported on additional signatories in their Joint Report of July 29, 2008.

As a result of the bilateral company-to-company discussions that gave rise to the tru2way MOU and subsequent actions, NCTA and CEA are no longer engaged in negotiations between the two industries for a separate two-way agreement. To the extent that other negotiations may be taking place, the trade associations are no longer taking the lead role for either side. The recent quarterly reports have simply stated that there is nothing new to report. Continuation of the current reports serves no purpose and the reporting requirement should be eliminated.

G. CableCARD Device Certification

The *FNPRM* reports that the Commission has heard complaints from SageTV that the CableCARD certification process limits the capabilities of the Silicon Dust HD HomeRun CableCARD tuner. The Commission proposes to "clarify" that CableLabs or other qualified

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[42] *See* CS Docket 97-80, Letter from Judson Cary, CableLabs, to Marlene H. Dortch (Nov. 13, 2006). As we discuss on page 26 below, the Commission should also consider other changes previously submitted reflecting an agreement by NCTA and the CE industry on an improved testing procedure for UDCPs. *See* National Cable & 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. This consensus language should also be included in any amendment to the M-Card rules.

[43] We have attached as Exhibit B proposed amendments that we suggest be incorporated in the Commission's rules consistent with our comments. Those proposed amendments include these consensus amendments.

[44] *FNPRM*, ¶ 12.

testing facilities shall not deny certification for a UDCP that meets the criteria in the Commission's rules for UDCPs.[45]

The proposed clarification is consistent with the standard which CableLabs believes currently applies to UDCP testing.[46] As we explain below, there are proposed amendments to the Commission's rules that have long been pending before the Commission reflecting an agreement by NCTA and the CE industry on an improved testing procedure for UDCPs. Fundamentally, though, the current CableLabs certification process for UDCPs covers no more, and no less, than the specific conformance criteria that are set forth in the rules.

SageTV's comments proceed from a misunderstanding. Silicon Dust is not making a UDCP. It is making a specialized device that feeds a personal computer with premium cable content. These devices are known as "OpenCable Unidirectional Receivers" (OCUR), and work in combination with required security elements of a personal computer. The OCUR specifications were voluntarily and cooperatively developed in 2005 by the cable industry, Microsoft and other IT parties to allow consumers to add cable channels to their PCs with CableCARD-enabled devices, but they do not meet minimum Commission criteria for UDCPs. Just as the certification process for retail DOCSIS modems does not use the same tests as the process for UDCPs, the certification process for OCURs does not use the same tests as those used for UDCPs.

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45 *See FNPRM*, ¶ 18.

46 UDCPs are required to pass the "PICS" (proforma interoperability conformance statements), a performance checklist that was negotiated with the CE industry and incorporated into the Commission's rules for UDCPs. Conformity is demonstrated through an "ATP" (acceptance test plan) that tells the tester how to test, such as what test equipment to use and what dial settings for the equipment. On February 20, 2004, the cable industry negotiated an agreement with the CE industry allowing the use of an "Equivalent ATP," for example, with equipment in CE manufacturers' own labs.

It is our understanding that Silicon Dust is developing an OCUR[47] but has not even submitted a device for CableLabs certification testing.[48] Ceton Corp., another OCUR developer, which has taken part in the CableLabs certification process, has described it in detail to the Commission and has been very supportive of the process.[49]

It bears noting that the CableLabs testing and certification process is similar to testing and certification procedures that are widely used to provide distributors, developers, consumers, and retailers the assurance that the platform, devices, and applications designed for them will actually work. A good example is HDMI. Until recently, differing CE implementations of HDMI led to a cacophony of non-interoperable "standard" interfaces that finally was sorted out in December 2006, when Best Buy demanded a new "Simplay HD" testing and certification regime for CE devices.[50] There are other marketplace examples: retail DOCSIS modems are subjected to a full certification process;[51] the Wi-Fi Alliance tests and certifies 802.11 equipment;[52] and Underwriters Laboratories, Inc.,[53] Dolby Laboratories,[54] THX digital cinema,[55]

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47 *See* http://www.silicondust.com/press.

48 At NCTA's request, CableLabs reached out to Sage TV to talk with them and explain the situation, but Sage TV declined to have any conversation, saying that they preferred to speak only to the Commission. NCTA then filed written comments with the Commission on February 26, 2010, discussing Sage TV's misunderstandings. *See* Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket Nos. 09-47, 09-51, 09-137; CS Docket No. 97-80 (Feb. 26, 2010).

49 *See* Comments of Ceton Corp., GN Docket No. 09-51, CS Docket No. 97-80 (filed Apr. 8, 2010) at 2 ("On every occasion Ceton has found CableLabs to be exceptionally professional, helpful, supportive, and accommodating. 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. CableCARD products are complex and the certification process is comprehensive to ensure that new products work well on cable provider networks with the goal of producing satisfied consumers.").

50 *See* Paul Gluckman, *Best Buy Confirms It's the Mystery Retailer Pushing HDMI Testing*, CONSUMER ELECTRONICS DAILY, http://www.simplaylabs.com/news/articles/121906.aspx.

51 *See* CableLabs, DOCSIS, http://www.cablelabs.com/cablemodem.

52 *See* WiMAX Forum, Certification Overview, http://www.wimaxforum.org/certification/certification-overview.

Windows Server,[56] AT&T Wireless,[57] Verizon Wireless[58] and others use comparable regimes. In the case of UDCPs, a manufacturer has the flexibility to self-verify later UDCPs after its first prototype UDCP product is verified by CableLabs or another qualified testing facility.

CableLabs has worked closely with CE manufacturers to streamline the certification process – for UDCPs, DOCSIS modems, OCURs and tru2way devices – so that products can get to market as quickly as possible. CableLabs provides open submission for certification testing every week, development lab time and interoperability events are made available to any interested manufacturer, and a free open source tru2way reference implementation is available to facilitate development and manufacture of tru2way devices.[59] Tests are administered on a cost-recovery, not-for-profit basis.[60] The tru2way certification process also provides for short-form certification and a path to self-certification.

NCTA supports the proposed clarification to the rule governing certification for a UDCP that meets the criteria in the Commission's rules for UDCPs. We also suggest that the rule be

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53 *See* Underwriters Laboratories Inc., About UL, http://www.ul.com/global/eng/pages/corporate/aboutul/.

54 *See* Dolby Laboratories, Inc., Introduction to Licensing Decoder Implementations Version 2.0, available at http://www.dolby.com (setting forth steps required of licensees before obtaining certification).

55 *See, e.g.*, THX Ltd., Cinema Certification, http://www.thx.com/professional/cinema-certification; About Projectors, A Closer Look at the THX Certification, http://www.aboutprojectors.com/news/2010/05/05/a-closer-look-at-the-thx-certification.

56 *See* Microsoft Windows Hardware Developer Central, Windows Logo Program, Requirements and Policies, http://www.microsoft.com/whdc/winlogo/hwrequirements.mspx.

57 *See* Equipment Manufacturers, http://www.wireless.att.com/about/alliances/equipment-manufacturers.jsp ("Certification helps to ensure that end-users will have an optimal experience when using a device with AT&T service.").

58 *See* Verizon Wireless OpenDevelopment Certification at https://www22.verizon.com/opendev/index.aspx.

59 Certification testing for more complicated tru2way devices includes more extensive tests than apply to UDCPs.

60 The current rate for UDCP certification testing is $30,000.

updated to include the consensus submission from NCTA and the CE industry reflecting an inter-industry agreement on an improved testing procedure for UDCPs.[61]

H. Pending Petitions

The Commission asks if any outstanding proposals filed in this docket remain valid or have been mooted over time.[62] There are three outstanding matters that we believe should be granted and do not require updating. First, as noted above, the Commission should take action on a consensus 2004 submission reflecting an agreement by NCTA and the CE industry on an improved testing procedure for UDCPs. Second, the Commission should take action on a consensus 2006 filing by the cable industry, TiVo and five other consumer electronics companies for adjustments to the Commission's plug and play rules to accommodate M-Cards.

Finally, the Commission has not yet taken action on a Petition for Reconsideration or Clarification of the Commission's sua sponte Order on Reconsideration adopted on December 19, 2003 in this proceeding which changed an encoding rule definition in a way which frustrates the intended application of the encoding rules.[63] This reconsideration petition, which is unopposed, should be granted to reinstate the definition of "Unencrypted Broadcast Television" in Section 76.1902(s) of the Commission's rules.

II. INTERFACE REQUIREMENTS: THE FAILURE OF THE 1394 TECHNOLOGY MANDATE SHOWS THAT THE COMMISSION SHOULD BE WARY OF FURTHER INTERFACE TECHNOLOGY MANDATES

The *FNPRM* recognizes that there is a need to reform the Commission's rule that requires cable operators to include an IEEE 1394 interface in all new high-definition set-top boxes that

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[61] *See* National Cable & 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.

[62] *FNPRM*, ¶ 12.

[63] *See* National Cable & Telecommunications Association's Petition for Reconsideration or Clarification in CS Docket No. 97-80, February 26, 2004.

they lease to subscribers and adopt a far more flexible approach to set-top box requirements.[64] The 1394 requirement adds to the cost of cable set-top boxes but is not required for other MVPDs and is not used by most consumers. The Commission proposes to give device manufacturers the option of choosing one of three or more other digital alternatives to 1394. That change by itself would expand the choices available to device manufacturers and cable operators to deliver better value to consumers. As we explain below, while NCTA supports the intent behind the Commission proposal, we believe no interface mandate is necessary to spur innovation in this area. To the extent the Commission is inclined to adopt its proposed rule change, NCTA suggests certain modifications that would better promote consumer choice and innovation.

A. The 1394 Mandate Should Be Eliminated

1. Other Interfaces Have Eclipsed 1394

The Commission is certainly correct that the 1394 requirement has cost consumers more than it is worth. As numerous petitions for waiver have demonstrated, few consumers have used the 1394 connector and even fewer are likely to in the future. In 2003, 1394 appeared to be a promising connector, but the rapidly evolving market changed course. Other interfaces such as Ethernet, USB, 802.11 (Wi-Fi), and Multimedia over Coax Alliance (MoCA) overtook 1394, and did so without any government mandate. Most retail devices such as TiVos, Moxis, and Rokus do not include 1394 interfaces. We agree with the Commission's tentative conclusion that it should give operators the choice of using such interfaces as Ethernet, Wi-Fi or USB 3.0 rather than the little-used 1394 interface.

[64] 47 C.F.R. § 76.640(b)(4)(ii).

The Commission has already granted one waiver of this requirement for the low-cost HD DTAs to be used by Cable One when it concluded that the "costs to consumers of imposing the IEEE 1394 output requirement would outweigh the potential benefits."[65] NCTA supports approval of other such waiver requests and also notes that CEA has said that it does not oppose their approval either.[66]

Texas Instruments is a leading supplier of IEEE-1394 chipsets and 1394 physical layer and link layer Integrated Circuits, so it obviously has an interest in perpetuating the use of 1394 by operation of law, if not by operation of market demand. It has argued recently that cable is at fault for 1394's failure to achieve consumer support and that the Commission should retain and enlarge the 1394 requirement. But the failure of 1394 has nothing to do with any lack of support from the Commission or U.S. cable operators.

Cable operators adopted 1394 in exactly the form negotiated by the cable and CE industries and subsequently embodied in Commission regulations. Cable operators put millions of 1394 connectors into the field – without effect. CE retail manufacturers could have all adopted 1394 as a standard television or video device connector, as they did with HDMI, but chose not to do so. 1394 has failed not just in the United States but worldwide as preferred alternatives took off. U.S. cable operators could not have caused this result. International

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65 *Cable One Waiver Order*, ¶ 16 and n. 42.

66 *See Intel Corporation Petition for Waiver of 47 C.F.R. § 76.640(b)(4)*, CSR-8229-Z, Comments of the Consumer Electronics Association (Dec. 10, 2009); *TiVo Inc.'s Petition for Clarification or Waiver of 47 C.F.R. § 76.640(b)(4)*, CSR-8252-Z, Comments of the Consumer Electronics Association (Feb. 22, 2010); *Request of Motorola Inc. for Waiver of 47 C.F.R. § 76.640(b)(4)*, CSR-8251-Z, Comments of the Consumer Electronics Association (Feb. 22, 2010).

industry press has included 1394 as among the "Top 10 disappointing technologies,"[67] and Intel has called 1394 "a technological 'bridge to nowhere.'"[68] It is time for the 1394 mandate to end.

2. The Commission Should Eliminate the Interface Requirement

Digital interfaces emerge and succeed (or fail) based upon their ability to meet consumer preferences and industry demand. Based upon this experience, the Commission is right to recognize that its rules need far greater flexibility to catch up with technology and the market. But we suggest that the flexibility should go beyond the proposal to codify a new list of preferred connectors – even if they provide for options. Any list of required interfaces based upon a snapshot from today will inevitably and quickly become outdated. Even the proposed list is already outdated since it does not include MoCA.[69]

As the 1394 experience has demonstrated, rigid technology mandates are not well suited for an industry as dynamic as the video distribution business, and can undermine the very innovation we all seek to achieve. Unless the rule permits operators to switch to newer alternatives that will surely emerge, the Commission would once again face a barrage of waiver requests. And until those waivers were acted upon, any such detailed rule would add unnecessary expense and constrain innovation, just as TiVo, ADB, Intel, Motorola, and Nagravision have described in their pending requests for waiver of the current rule. Rather than repeat the same mistake, the best course would be to repeal § 76.640(b)(4)(ii) and (iii).

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[67] Top 10 Disappointing Technologies, PC AUTHORITY.COM (May 18, 2009), available at http://www.pcauthority.com.au/News/145271,top-10-disappointing-technologies.aspx.

[68] *Intel Corporation Petition for Waiver of 47 C.F.R. § 76.640(b)(4)*, CSR-8229-Z, Petition for Waiver at ii, 9 (Oct. 7, 2009); *see also Intel Corporation Petition for Waiver of 47 C.F.R. § 76.640(b)(4)*, CSR-8229-Z, Reply Comments of Motorola, Inc. at 1-2 (Dec. 22, 2009) (concurring).

[69] MoCA develops specifications for the transport of digital entertainment and information content over in-home coaxial cable. The MoCA Alliance includes consumer electronics manufacturers, cable, telephone, and satellite distributors, and retailers.

3. MVPDs are Delivering Content Via Commercially-Adopted Interfaces Without Government Mandates

No rule is needed to assure cable operator support for market-driven video interfaces. Even in the absence of any rule, cable operators would continue to support and offer interfaces in their leased devices that their customers want. The consumer principles advanced by NCTA provide that "Consumers should have the option to easily and securely move video content between and among devices in their homes."[70] In a major effort to keep pace with the marketplace for video distribution and video interfaces, the cable industry has worked with the satellite, telephone, IT, and CE industries in DLNA[71] to reach an agreement that allows recorded commercial video programming content to be shared within home networks using approved outputs and content protection technologies.[72] The DLNA Guidelines include requirements for Ethernet and Wi-Fi interfaces (with MoCA as an optional interface), and also address issues such as closed captioning, content advisory, and Quality of Service.

Work continues to meet the more difficult challenges of handling live content in the home network, which requires consideration of such features as Emergency Alert System (EAS), tuner sharing, and interactive features. In addition, cable is working across industries in MoCA to make in-home coaxial cable into a non-proprietary home networking architecture. Verizon delivers FiOS over MoCA; Time Warner Cable, Cox Communications, and Bright House

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[70] *See* Appendix A, ¶ 5.

[71] The Digital Living Network Alliance (DLNA) promotes home networking specifications through agreements among consumer electronics, computer and mobile device manufacturers, component and software developers, content providers, cable, telephone and satellite distributors, and retailers.

[72] *DLNA Enables Premium Commercial Content Across Home Networks; Alliance Joins with Service Providers to Develop Standards to Enjoy Commercial Video and Music on DLNA Devices*, DLNA Press Release (Jan. 7, 2010), http://www.dlna.org/news/pr/view?item_key=e2c163bfab8076edc2b33eba8293e82cd2f11e3e; *see also* Mike Robuck, *Gateways a Keystone for Future Cable Operator Architectures*, CED MAGAZINE (Jan. 1, 2010), http://www.cedmagazine.com/Article-Gateways-Cable-Operator-Architectures-010110.aspx; Jeff Baumgartner, *Will Intel Go Inside Cable Multimedia Gateways?*, LIGHT READING'S CABLE DIGITAL NEWS (Sept. 25, 2009), available at http://www.lightreading.com/document.asp?doc_id=182289&site=cdn.

Networks have publicly committed to MoCA in their networks; and Intel has a tru2way server that runs on MoCA. MoCA transforms existing cable home wiring into spectrum suitable for the delivery and sharing of many more services to connected home devices. Manufacturers of set-top boxes produced for cable operators and DBS providers already include Ethernet in many models.[73] Cable operators, Verizon, AT&T, and other MVPDs offer home networking products today because home networking increases the value of a subscription service for customers. If cable devices do not support home networking functionality desired by our customers, they will switch to other competitive MVPDs that do.[74] Importantly, these industry-led consortia such as DLNA and MoCA track closely and quickly with consumer demand, marketplace competition, and technology advances – certainly more quickly than would be the case when attempting to constantly modify Commission regulations to reflect technology or marketplace changes.

Nor is the movement of video necessarily limited to "connectors." DECE is developing a new approach to expand the "buy once, play anywhere" model used for DVDs.[75] Comcast, Cox and other cable operators are active participants in this multi-industry consortium. Under this approach, consumers may buy content from many sources (including the Internet, retail,

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[73] *See* Motorola, Inc., All-Digital QAM Set-tops, http://www.motorola.com/Business/US-EN/Business+Product+and+Services/TV+Video+Distribution/Customer+Premises+Equipment+(Set-tops)/All-Digital+QAM+Set-tops, and Analog/Digital QAM Set-tops, http://www.motorola.com/Business/US-EN/Business+Product+and+Services/TV+Video+Distribution/Customer+Premises+Equipment+(Set-tops)/Analog-Digital+QAM+Set-tops (showing Ethernet interfaces in many of Motorola's leading HD cable set-top boxes, including the DCH-3200, DCH-6200, DCX-3200, DCH-3416, DCH-6416, and DCX-3400); Cisco Systems, Inc., Next-Generation Set-Top Solutions At-A-Glance, https://www.cisco.com/en/US/prod/collateral/video/ps8611/ps10318/ps10348/09_JAN_G1716B_Next_Gen_Set-top-AAG.pdf (showing Ethernet interfaces in Cisco Explorer 8600 Series, 4600 Series, 1640 Series, and 1540 Series devices).

[74] Many DirecTV and DISH leased devices include Ethernet and USB interfaces. *See* http://www.directv.com/DTVAPP/content/equipment/hd_dvr_receiver and http://www.dishnetwork.com/receivers/hd/default.aspx. Many Verizon devices include Ethernet, USB and 1394 interfaces, the latter presumably only because of the Commission's requirement. *See* http://www22.verizon.com/ResidentialHelp/FiOSTV/Receivers/Equipment+Issues/QuestionsOne/124924.htm.

[75] The Digital Entertainment Content Ecosystem (DECE) includes consumer electronics, computer and mobile device manufacturers, component and software developers, content providers, cable distributors, and retailers.

wireless, or cable) and have it forwarded over multiple distribution platforms to DECE devices using different DRM technologies. This will enable consumers to buy movies and other programming from multiple sources and then have it delivered to many different devices for viewing, even if the devices use different resolutions and security technologies.

The cable industry is committed to providing video content to consumers where and when they want it, on all possible consumer devices, and for those devices to be innovative platforms for new applications. For these reasons, no interface mandate is necessary, and any rule is likely once again to impose unnecessary expense on consumers, be quickly outdated, and frustrate innovation.

B. Recommended Modifications to the Commission's Proposal

If the Commission nonetheless elects to keep an interface mandate, NCTA believes that several changes to the Commission's proposed rule would better serve the Commission's purposes.

1. Cable Operators Should Be Permitted to Use Alternative Interfaces that Accomplish the Commission's Objective

While today Ethernet, USB, Wi-Fi, and MoCA are the most likely options, that was true of 1394 just a few years ago. To avoid freezing out new options that may overtake these technologies, the Commission should allow cable operators and CE manufacturers the flexibility to satisfy any interface rule through the use of alternative interfaces that also support distribution of video programming to customer devices and therefore accomplish the Commission's objective.

The Commission also proposes to require that the interface used to meet this requirement can "deliver video in any industry standard format." Clearly, it would not serve a cable operator's purposes of meeting consumer demand to output video in ways that cannot be

received by consumers, and we have no objection to the intention of the rule. We would, however, qualify the suggestion in the text of the *FNPRM* that such video "can be received and displayed by devices manufactured by unaffiliated manufacturers," by noting that not all retail devices can receive digital, or MPEG-4, or 3-D, or whatever new features may define video programming in the future. Rather than specify MPEG-2 or MPEG-4, and risk again constraining future innovation, the Commission could use the same language and approach as its other rules, and simply describe the outputs as outputs for video programming, as shown in Exhibit B.

2. The Commission Should Not Impose a Broad, Undefined Technology Mandate for Two-Way Remote Control Requirements

In discussing the 1394, Ethernet, USB and Wi-Fi interfaces, the *FNPRM* tentatively concludes that "we should require cable operators to enable bi-directional communication over these interfaces" and proposes that "these interfaces should be able to receive remote-control commands from a connected device."[76] Such bi-directional home networking issues are best left to the *NOI* where they can be considered on an all-MVPD basis. This is especially so given that the Commission's proposed rule is vague and does not define the term "remote-control commands." Translating remote control commands into upstream controls requires considerably more definition and development work than the proposed rule recognizes. Each command at issue needs to be specified, engineered, and implemented.

This has been done in the past only after extensive industry collaboration. With 1394, for example, the Consumer Electronics Association (CEA) Home Networking Committee adopted CEA-931-A, which specifies support in a 1394-based home network for pass through of certain

[76] *FNPRM*, ¶ 21.

specific remote control commands.[77] From that specification, the cable and CE engineers negotiated the precise commands that would be supported with 1394 in operator-supplied HD boxes: tune function, mute function, restore volume function, power on, power off, and status inquiry. These were included in the 2002 One-Way MOU and then codified in Commission regulation.

By contrast, currently there are no comprehensive bi-directional standard protocols that could effectively turn every downstream device on an Ethernet, USB or Wi-Fi network into a controller of a fully interactive set-top box. Nor is there any agreed-upon list of which of those functions downstream devices should be able to control. Standards for each of the interfaces would need to be developed across multiple industry sectors.[78] Thus, at this time, there is no standard that a cable operator could use to satisfy the proposed rule with any of these interfaces.

The cable industry is currently working closely with other MVPDs and the CE and IT communities in the DLNA Forum to define certain features and functions on Ethernet and Wi-Fi connectors to support DLNA retail devices that receive MVPD content. However, NCTA cannot predict when such DLNA Guidelines will be finalized and implemented, and even once they are, the ongoing efforts would not sweep nearly as broadly as the Commission's proposed rule that on its face would arguably cover all remote control commands.

Until such standards are defined, NCTA is unable to estimate the date on which these requirements could be implemented. In previous negotiations, we found that intellectual

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[77] Remote Control Command Pass-through Standard for Home Networking, CEA-931-A.

[78] Development work would be even more extensive to enable other bi-directional functionality. A set-top box can output an image. But if it is expected to ingest video, discover assets on a home network, intake consumer selection key clicks, serve as the hub of a home network, output enough streams to support multiple devices and resolve contention for resources on the home network, it requires considerably more engineering, development, resources, and cost. Such devices may in fact be engineered and offered to interested consumers. But to mandate any such bi-directional capabilities on all HD set-top boxes would impose needless costs on customers who may have no interest or need for them.

property concerns made CE manufacturers reluctant to reveal even the remote control codes used in their retail remotes. We think it is very unlikely that the prerequisite industry agreements would be reached for any of these interfaces in time for a January 2011 implementation and, in any event, there would not be any ANSI-accredited standards by that time.

For the reasons stated above, any new rule should not include a mandate that devices pass through all remote control functions. Consideration of this bi-directional remote control issue should instead be deferred to the *NOI* proceeding.

3. One-Way Devices Should Be Exempt from Any Interface Requirements to Assure a Low-Cost Option for Consumers

The Commission should exempt HD DTAs from any interface requirements. In the *Cable One Waiver Order* which granted Cable One a waiver from the integration ban for certain HD DTAs, the Commission found that the added expense of an interface mandate "would be inconsistent with [the Commission's goal] to provide a low-cost HD box for consumers."[79] For consumers who prefer a low price over more advanced functionality, the Commission should not undermine that preference by making them pay more for more functionality than they are likely to value. Thus, any interface requirement should be changed to apply only to two-way HD devices, and not, for example, to one-way HD DTAs.

4. Implementation Schedule

The Commission requested comment on whether cable operators could implement the proposed interface rules "inexpensively with firmware upgrades, and if so, whether January 1, 2011 would be a reasonable effective date for such a rule change."[80] If the Commission removes the requirement to support remote control functions as we have urged above, the new rule could

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[79] *Cable One Waiver Order*, ¶ 16 and n. 42.

[80] *FNPRM*, ¶ 21.

become effective for new devices promptly after adoption. If remote control requirements are imposed, 2011 is not a realistically achievable effective date. As explained above, that process would involve agreement among many parties, not merely the cable industry.

III. THE MARKET-BASED TUNING ADAPTER – CREATED AND ENDORSED BY THE CABLE INDUSTRY AND TIVO – IS WORKING AS A SHORT-TERM SOLUTION FOR ISSUES RAISED BY TIVO

The *FNPRM* seeks comment regarding the success of the tuning adapter in enabling one-way UDCPs to access channels delivered using interactive switched-digital video ("SDV") technology. Specifically, the Commission asks for "comment on whether this market-based solution is working and whether UDCP manufacturers and cable operators are meeting their obligations under that agreement."[81] Tuning Adapters are working, and manufacturers and cable operators are meeting their commitments to each other. Therefore, it would be counterproductive for the Commission to order the cable industry back to the drawing board to invent a completely different solution. As the Commission has acknowledged, UDCPs have not succeeded in the marketplace (less than 1% of cable customers use UDCPs, and even far fewer require Tuning Adapters) and adding costly new UDCP-specific mandates would be especially ill-advised in light of the Commission's tentative conclusion that the CableCARD regime is outdated and should be replaced.

[81] *Id.*, ¶ 14.

A. Background on SDV and UDCPs

Because the "plug and play" rules were adopted for retail UDCP devices that do not receive interactive services,[82] the Commission required that manufacturers advise consumers that UDCPs need set-top boxes to receive two-way services that needed to "talk back" to the cable headend in order to function properly.[83] Accordingly, for example, TiVo warns consumers that a TiVo DVR does not have the capability to access interactive digital cable services,[84] and cable operator notices include similar cautions about the availability of two-way services to one-way UDCPs.[85]

Furthermore, in adopting its plug-and-play rules, the Commission noted the "rapid pace of technological development" and underscored that, "once a baseline compatibility standard has been set, marketplace forces are best suited to decide which products and services will meet

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[82] "Due to the unidirectional nature of this receiver specification, an external navigation device would still be needed to receive advanced features such as cable operator-enhanced electronic programming guides ('EPGs'), impulse pay per view ('IPPV') or video on demand ('VOD')." *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-225, 18 FCC Rcd 20885, 20890, ¶ 7 (2003) ("*Navigation Devices Second Report and Order*"); *see also Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Further Notice of Proposed Rulemaking, FCC 03-3, 18 FCC Rcd 518, 531 (Appendix B) (2003) (One-Way MOU § 3.4.7: "These products do not utilize the return path of the cable system" and One-Way MOU § 4.3: "Cable operators' EPG will be provided for advanced interactive digital cable products via OCAP or its successor technology."); 47 C.F.R. § 15.123(a) ("Unidirectional digital cable products do not include interactive two-way digital television products.").

[83] *Navigation Devices Second Report and Order*, 18 FCC Rcd at 20904, ¶ 41 ("We strongly believe that it is incumbent upon the consumer electronics industry to collaborate with both their retail partners and the cable industry to develop consumer awareness campaigns about unidirectional digital cable televisions and their functionalities, particularly with regard to the need for set-top boxes in order to receive interactive services.").

[84] The TiVo HD product manual advises customers: "Certain advanced and interactive digital cable services such as video-on-demand, a cable operator's enhanced program guide, and data-enhanced television services may require the use of a separate cable company provided set-top box. If you wish to receive interactive digital cable services, please contact your local cable company to request connection of a cable company-provided digital set top box to a separate input on your television. Our TiVo Series3 HD DVR will continue to record and play analog basic, digital basic and digital premium cable television programming as usual, and with most televisions, you will be able to switch inputs to receive the interactive digital cable services. For more information about interactive digital cable services, please call your local cable operator."

[85] These and other two-way services are available to tru2way retail products. *See Oceanic Time Warner Cable, a Subsidiary of Time Warner Cable, Inc.*, 24 FCC Rcd 8716, ¶ 14, n. 44 (June 26, 2009) ("*Oceanic Order*") (noting that "bi-directional devices that will work with SDV content are beginning to be introduced in the marketplace").

consumers' needs and interests."[86] Consistent with these pro-innovation policies, the Commission stated in 2005 that: "It is not our intent to force cable operators to develop and deploy new products and services in tandem with consumer electronics manufacturers. *Cable operators are free to innovate and introduce new products and services without regard to whether consumer electronics manufacturers are positioned to deploy substantially similar products and services*."[87]

SDV is a transmission technology that enables cable operators to deploy these new products and services. And, like VOD and other interactive services, SDV utilizes upstream signaling over the cable return path in order to deliver channels to customers only when they are tuned by consumers, thereby freeing up cable spectrum for more channels, more advanced services, and more robust broadband. Last year, the Commission concluded that SDV deployments do not violate the plug-and-play and navigation device rules, and highlighted the "significant consumer benefits of SDV deployment,"[88] stating that:

> the increased capacity enabled by SDV will facilitate cable operator compliance with the Commission's 'viewability' rules – which require cable operators to transmit both analog and digital versions of broadcast channels – without displacing substantial amounts of existing programming. SDV has also permitted the launch of new HD channels and the introduction of diverse and niche programming options, including foreign-language content and other diverse programming. In addition, the additional capacity will facilitate the deployment of advanced broadband technologies such as DOCSIS 3.0, as well as expand broadband capabilities. Indeed, many of cable's competitors currently rely on SDV to provide expanded offerings to consumers.[89]

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[86] *Navigation Devices Second Report and Order*, 18 FCC Rcd at 20899, ¶ 29; *see also id.* at 20902, ¶ 37.

[87] *Second Report and Order*, 20 FCC Rcd at 6809, ¶ 30 (emphasis added).

[88] *Oceanic Order*, ¶ 13 (vacating Notices of Apparent Liability for Forfeiture and Forfeiture Orders relating to Time Warner Cable and Cox's implementation of switched digital video).

[89] *Id.*, ¶ 13. In addition, the Commission imposed that dual carriage obligation based in part on its expectation that cable operators would be able to use SDV technology to create the requisite capacity. *See Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules*, Third Report and Order and Third Further Notice of Proposed Rulemaking, 22 FCC Rcd 21064, ¶ 60 (2007).

SDV is critical to many cable operators to deliver new services. Like going all-digital, launching SDV is one of the critical tools that have enabled operators to launch speeds in excess of 100 Mbps. For example, Cablevision has deployed SDV and utilized recovered spectrum to commercially launch a 101 Mbps DOCSIS 3.0 service. Likewise, SDV has helped Time Warner Cable to reclaim spectrum that is now being used for DOCSIS 3.0 broadband, demonstrated to reach a speed of up to 280 Mbps downstream and 80 Mbps upstream. As these examples show, cable operators can use SDV as a tool to meet the National Broadband Plan's goal of 100 Mbps broadband service (and beyond).

Cable operators also need more spectrum to continue to launch additional HD programming and other digital content, including foreign language and other programming of interest to minority communities. HD content is particularly important in today's competitive market, where MVPDs try to differentiate themselves based on the number of HD services they offer. In addition, in its marketing materials to customers, AT&T promotes the all-switched nature of its U-verse service as an important advantage over cable operators.[90] In this robustly-competitive marketplace, cable operators need to have the ability to deploy SDV.

B. Tuning Adapters Are Working Today

Three years ago, TiVo approached the cable industry asking for help in crafting a solution that would enable its one-way CableCARD DVRs to go beyond their native capabilities and communicate upstream with cable headends to select a switched digital channel. The cable

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[90] *See* http://www.att.com/Common/about_us/files/pdf/IPVideoDistribution_2-22.pdf ("In the traditional cable TV or satellite network – using broadcast radio frequency (RF) video technology – all content constantly flows downstream to each customer, and the customer switches the content at the set-top box. The customer can select from among as many choices as the cable or satellite company can fit into the "pipe" flowing into the home. … Switched video delivery means content choice is not limited by the size of the "pipe" into the home – so the network allows for delivery of more content and functionality. The network creates the potential to provide customers more choices, including niche programming of interest to diverse audiences and more high-definition (HD) programming.").

industry thereupon initiated voluntary, proactive efforts to develop a UDCP solution for SDV that could be in place before most SDV deployments were launched. We worked closely with TiVo and others to develop the Tuning Adapter solution, which was presented to the Commission jointly with TiVo's unequivocal support.[91]

As TiVo's website explains to its customers, SDV "is a new technology that allows cable providers to expand the programming you receive by sending certain channels to customer homes only when the channels are requested. … The good news is that TiVo has worked with your cable provider to develop a solution at little or no cost to you."[92] While some customers experienced problems in the early rollout of Tuning Adapters, that is true of almost any new technology or service. Cable operators and TiVo have worked diligently to address such issues when they arise.[93]

Tuning Adapters are working today to provide access to switched channels to thousands of customers. They connect via a common USB connection to UDCPs containing the necessary firmware and can be operated with a TiVo or Moxi remote control. TiVo's website now reports to its customers that it "has tested extensively with these adapters," and that "As of today, there are no known issues with Tuning Adapters and Premiere/XL, TiVo HD/XL, and Series3 HD

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91 *See* Letter from Neal Goldberg, Vice President and General Counsel, National Cable and Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission (Nov. 30, 2007) (attaching Letter from Henry Goldberg, Attorney for TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission (Nov. 27, 2007)); Press Release, National Cable and Telecommunications Association and TiVo Inc., *NCTA and TiVo Announce Switched Digital Solution for HD DVRs* (Nov. 26, 2007). In the Press Release, TiVo President and CEO Tom Rogers stated that "We are gratified that the cable industry has agreed to work quickly to develop a solution that will enable existing TiVo CableCARD DVRs to directly access switched digital cable channels and ensure the adapter is part of an easy installation process for cable subscribers."

92 http://support.tivo.com/app/answers/detail/a_id/307/kw/tuning%20adapter/r_id/100041.

93 TiVo HD DVRs were manufactured without the software that was compatible with the Tuning Adapter, and users need to update their software before the Tuning Adapter would work properly. *See* http://support.tivo.com/app/answers/detail/a_id/133/kw/tuning%20adapter/r_id/100041 ("A new TiVo HD DVR may require a software update before it is compatible with the Tuning Adapter. Tuning Adapters require TiVo software version 9.4 or later and some TiVo HD DVRs were manufactured with an earlier version. To ensure that your TiVo HD DVR is running the latest software, install the DVR and run Guided Setup at least 2 days before connecting a Tuning Adapter.").

DVRs."[94] 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 Center.[95] 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."[96]

The cable industry has invested millions of dollars to develop Tuning Adapters and provide them to customers with TiVos and other compatible UDCPs. Each of the five largest cable operators provides Tuning Adapters to consumers free of charge, even though they cost more than $100 each. This stands in marked contrast to other MVPDs, such as AT&T, whose U-Verse switches every channel, but which makes no accommodation for TiVo to operate at all as a navigation device.

One key advantage of the Tuning Adapter is that it is scaled precisely to its purpose: it is deployed primarily to those customers who use TiVo and Moxi DVRs and who wish to receive SDV channels. This is important given that only 31,600 out of 62 million cable customers are using Tuning Adapters in cable systems across the country.[97] And while SDV deployments will continue to increase, the number of TiVo users is declining, so assessing the situation and scaling

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[94] http://support.tivo.com/app/answers/detail/a_id/148/related/1/kw/tuning%20adapter/r_id/100041 (viewed June 14, 2010).

[95] *See* http://www.amd.com/us/products/pctv/tv-wonder-tuners/Pages/digital-cable-tuner.aspx.

[96] http://usingwindowshomeserver.com/2009/11/21/installing-a-tuning-adapter-in-windows-media-center-on-a-friday-night.

[97] The ten largest traditional cable operators have together deployed approximately 31,600 Tuning Adapters as of May 2010. The number of tuning adapters may increase as more systems use SDV, but in any event the percentage of cable customers using Tuning Adapters will remain very small.

the solution is particularly appropriate in these circumstances.[98] It is also important to note that channels delivered over SDV can and will be accessed with a CableCARD-enabled tru2way device, including tru2way DVRs, since those devices can access interactive services. The Java-based tru2way middleware reference implementation is made available by CableLabs under open source terms or a free commercial license.

Cable operators are committed to continuing to provide and support Tuning Adapters. Because Tuning Adapters are working, Commission action is not necessary to ensure that consumers with UDCPs have access to channels delivered through switched-digital technology.

C. The Commission Should Reject TiVo's Proposal to Reengineer an Internet-Based Return Path for SDV as a Solution in Search of a Problem

The *FNPRM* asks whether any Commission action is necessary to ensure consumers with UDCPs have access to channels delivered through switched-digital technology.[99] As discussed above, the Tuning Adapter already ensures that consumers with UDCPs have access to channels delivered via SDV and, therefore, no Commission action is necessary at this time. Nevertheless, the *FNPRM* seeks comment on an "alternative proposal" by TiVo that would require cable operators to scrap the Tuning Adapter and require a nationwide Internet-based signaling path for one-way UDCPs to connect to SDV servers over the Internet.

Less than a year ago, TiVo told the Commission that the Tuning Adapter "is a reasonable, practical solution to ensure that existing unaffiliated retail navigation devices that are

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[98] The number of TiVo customers has continued to decline from nearly 4.5 million to approximately 2.5 million (of which 2.2 million are paying subscribers). *See TiVo Reports Results for the First Quarter Ended April 30, 2010*, http://investor.tivo.com/phoenix.zhtml?c=106292&p=irol- newsArticle&ID=1431001&highlight= (May 26, 2010); *see also TiVo By the Numbers: 800,000 Subscribers Lost in 18 Months*, http://newteevee.com/2010/05/26/tivo-by-the-numbers-800000-subscribers-lost-in-18-months (May 26, 2010) ("The loss of subscribers has become a trend for TiVo, which has seen the number of customers who pay to use its service fall for the last several years. That decline has been especially steep over the last 18 months, over which time TiVo has dropped from about 3.3 million to 2.5 million."); John Kell, *TiVo Loss Widens on Higher Costs*, WALL ST. J. (Mar. 8, 2010), http://online.wsj.com/article/SB10001424052748703954904575110012451450700.html.

[99] *FNPRM*, ¶ 15.

capable of receiving streamed programming can continue to receive such programming delivered via SDV in compliance with FCC rules."[100] Despite this endorsement of the Tuning Adapter – which TiVo helped create – TiVo recently told the Commission that using the Tuning Adapter "to receive cable programming is the very antithesis of what a competitive set-top box policy is designed to achieve."[101] This new position is particularly confounding given that TiVo previously supported the Tuning Adapter solution, which the cable industry funded and deployed at TiVo's request.

TiVo's new-found objections to the Tuning Adapter appear to be based on concerns about its size.[102] As TiVo well knows, the Tuning Adapters were developed based on existing set-top box form factors to speed the development process and hold down costs. The Motorola Tuning Adapter is roughly the size of the DCT-700, measuring only 5.5" x 6.7" x 1.8", and can be held in the palm of your hand. By comparison, this is smaller than the Western Digital Hard Drive that TiVo markets to customers to attach to their TiVos to add additional recording space.[103] The Cisco Tuning Adapter is moderately larger. Had TiVo's market expanded to sustain volume production, the size of the Tuning Adapter might have shrunk as many other

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[100] *Oceanic Time Warner Cable, a Subsidiary of Time Warner Cable, Inc.*, File No. EB-07-SE-351 et al., Petition for Reconsideration or Clarification of TiVo Inc. at 17-18 (July 27, 2009).

[101] *See* Letter from Matt Zinn, Senior Vice President, General Counsel, Secretary, and Chief Privacy Officer, TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission at 2 (February 17, 2010).

[102] *The National Broadband Plan: Competitive Availability of Navigation Devices: Hearing Before the Subcomm. on Communications, Technology, and the Internet of the H. Comm. on Energy and Commerce*, 111th Cong. (April 29, 2010) (comments of Matthew Zinn, Senior Vice President, General Counsel and Chief Privacy Officer, TiVo Inc.) available at http://www.c-spanvideo.org/program/id/223346 ("It was supposed to be a little dongle.").

[103] *See* https://www3.tivo.com/store/accessories-networking.do#A00096. Specifications available at http://www.bestbuy.com/site/Western+Digital+-+My+DVR+Expander+1TB+External+eSATA+Hard+Drive/9341143.p?id=1218087882147&skuId=9341143.

electronics tend to shrink with large volume. But instead, the number of TiVo users has shrunk,[104] and the number of customers with Tuning Adapters is very small.

TiVo now proposes that the Commission mandate that signaling path used to access SDV channels from the cable headend be moved from the Tuning Adapter and cable return path to the Internet. As envisioned, each TiVo would connect to the Internet and each SDV server would respond to a tuning request sent over the Internet by the TiVo device. The SDV server would then tune the SDV channel and transmit it over the downstream cable plant to the TiVo device.

At the outset, unlike the current Tuning Adapter solution, TiVo's proposed approach would require that a subscriber buy Internet services in order to receive SDV video services. Moreover, there are numerous technical issues with this approach. For example, SDV servers are not designed to work with IP signals received over the public Internet. Rather, they are designed for managed delivery of upstream signaling in the return path in order to assure that the tuning experience has no noticeable lag time between the button press on the remote control and the channel appearing on the TV screen. There is no assurance that signaling on the public Internet would be provided with any managed delivery, particularly as it traverses home networks and third party transit points not managed by the cable operator.[105] And providing managed delivery on the public Internet could raise policy questions that are at issue in the Commission's net neutrality proceeding.

In addition, any workable solution would need to redesign SDV signaling to accept commands from the public Internet; and then address the security and authentication holes in the proposal, which as currently framed has no protection against hacking of the SDV server, denial

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[104] *See supra* note 98.

[105] *See, e.g.,* Comments of AT&T Inc., GN Docket No. 09-191 (filed Jan. 14, 2010) at 58 (explaining how prioritization bits are stripped off of packets at network boundaries).

of service attacks, or tuning commands received without entitlement. The TiVo proposal would also require new equipment and engineering throughout each cable operator's network, all for a very small handful of legacy one-way devices.

It may be possible for TiVo and individual MVPDs to craft IP solutions, but TiVo's proposed blanket mandate would not work for every combination of headends, SDV servers, and other components, which vary greatly among cable operators.[106] The cable industry uses a wide variety of technologies, headends, network equipment, peripherals, software, and applications supplied by a variety of vendors. Unlike the telephone network which was originally built to a common standard, the cable industry is a roll up of systems built at various times with various vendors, each of which deploys innovative services to consumers without waiting for a market winner among competing equipment vendors or the resolution of a standards body. The combinations of SDV servers and other elements used in delivering switched channels vary greatly among cable operators. For this reason, one-off arrangements any particular MVPD may employ for TiVo could not be expected to work on all cable systems. Nor would it accommodate changes in SDV technologies as they continue to evolve rapidly.

The Commission prudently asks for comment on "the cost and feasibility of this solution for cable operators, and whether such a network solution would discourage investment by cable operators in switched digital technology."[107] As demonstrated above, a regulatory mandate to use a particular IP backchannel method would in fact be very costly and therefore could have the effect of discouraging additional rollouts of SDV technology. Requiring new interactive services

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[106] For example, TiVo has said elsewhere that it can also build tru2way into its DVRs, which would address SDV without an external tuning adaptor. *See* Steve Donohue, *TiVo Building tru2way Version of New Interface*, LIGHT READING CABLE (Mar. 3, 2010), http://www.lightreading.com/document.asp?doc_id=188664&site=lr_cable (quoting TiVo CEO Tom Rogers, who stated "Realistically, we think the tru2way path is the way [large cable companies are] going, and we have to be geared toward translating what we're doing here to a tru2Way opportunity. And they're funding us to do that.").

[107] *FNPRM*, ¶ 14.

to be compatible with legacy UDCPs also would therefore contravene Congress' instruction that the "Commission avoid actions [under Section 629] which could have the effect of freezing or chilling the development of new technologies and services,"[108] and contradict the Commission's specific prior rulings inviting cable operators to keep innovating without being held back by legacy UDCPs. TiVo itself has cautioned that, as a general matter, "if Congress or the Commission chooses a particular technological implementation over other technically feasible alternatives, innovation will be choked off."[109]

The Commission has already rejected the notion that the emergence of SDV warrants a new requirement to enable one-way devices to engage in two-way communication to request switched channels. The Commission held in its recent SDV order that the "UDCP rules were not intended to provide access to bi-directional services or to freeze all one-way cable programming services in perpetuity."[110]

In sum, the reengineering of cable networks to accommodate TiVo's latest proposal would require the expenditure of enormous time, effort and resources at a time when the Commission views CableCARD as a technological dead end and when such resources would be more productively invested in delivering next-generation solutions. Since the Commission has held that UDCP rules were never intended to enable Tuning Adapter functionality, no short-term "fix" is needed to assure cable operators' compliance with the rules, which is the object of the *FNPRM*. The issue TiVo has raised, however characterized, is not a CableCARD issue that needs a short-term regulatory "fix." As such, this short-term proceeding is not the time to

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

[109] Comments of TiVo Inc., MB Docket No. 09-194 (filed Feb. 24, 2010) at 7.

[110] *Oceanic Order*, ¶ 11. Moreover, the One-Way MOU explicitly provides that UDCPs "do not utilize the return path of the cable system." One-Way MOU, § 3.4.7, 18 FCC Rcd at 531 (Appendix B).

undertake such significant and costly redesign of cable networks for a small set of legacy devices that have been reasonably handled with a solution mutually crafted with TiVo. Signaling and delivery in IP, video service from the cloud, and integration of the Internet with video services are all legitimate issues to explore. Cable operators and others are already experimenting with a variety of IP models, and will continue to do so regardless of any regulatory mandate, but there remain a number of technical, security, and other issues that would need to be resolved for these ideas to be developed into commercial offerings. Therefore, if the Commission wishes to explore this issue further, it should do so in the companion *NOI*, not this CableCARD *FNPRM*.

IV. THE COMMISSION SHOULD RELIEVE CONSUMERS OF THE EXCESSIVE BURDEN OF THE INTEGRATION BAN

The *FNPRM* seeks comment on the Commission's tentative conclusion that CableCARDs are not a viable long-term solution and on reform of the CableCARD system during the interim period until a successor solution becomes effective. Cable operators agree with the Commission that support for CableCARDs should not be abandoned in the near-term. Cable operators have many customers using retail CableCARD devices today to receive cable services and intend to continue to support the use of those retail devices for the foreseeable future whether the Commission's rules continue to require it or not.

But we do believe emphatically that the Commission can now stop the additional, ongoing burden of the *integration ban* without retreating from its support for CableCARDs.[111] Congress did not demand or even suggest an integration ban,[112] and, as we demonstrate below,

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[111] *See* 47 C.F.R. § 76.1204(a)(1) ("Commencing on July 1, 2007, no multichannel video programming distributor subject to this section shall place in service new navigation devices for sale, lease, or use that perform both conditional access and other functions in a single integrated device.").

[112] In fact, Congress said that any Commission regulations "*shall not prohibit any [MVPD] from also offering converter boxes* … and other equipment used by consumers to assess multichannel video programming … if the system operator's charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any such service." 47 U.S.C. § 549(a) (emphasis added).

the continued imposition of the ban would not provide any additional support for CableCARDs or the retail market. The integration ban has cost consumers more than a billion dollars in higher set-top box lease charges.[113] These additional costs will continue to mount every day that the ban remains in effect. The Commission has emphasized that "we wish to place as little of the cost burden resulting from the ban on the public … ."[114] Especially now that the Commission has signaled its intent to replace the CableCARD regime, it is in the public interest to consider whether the ban remains necessary.

The Commission has never held that it is necessary for all leased devices to have separable security to accomplish what the Commission hoped to achieve by mandating "common reliance." It exempted analog devices and devices that were in inventory prior to the integration ban. The Commission later exempted one-way SD DTAs and granted waivers to some operators to continue to deploy two-way integrated SD devices. Underlying each of these decisions was a theory that, so long as the operator continued to have CableCARDs in some of its devices, it would have sufficient incentive to make CableCARDs work in its systems. The *FNPRM* reaffirms that path in recognizing that an exemption for HD DTAs will not undermine the retail market. The question therefore is not whether all cable devices need to have CableCARDs, but how many is enough.

The answer is that cable operators have already deployed enough CableCARD devices to assure any purpose that could realistically be achieved by the integration ban. As shown in the chart below, the ten largest cable operators have now deployed more than 19.5 million

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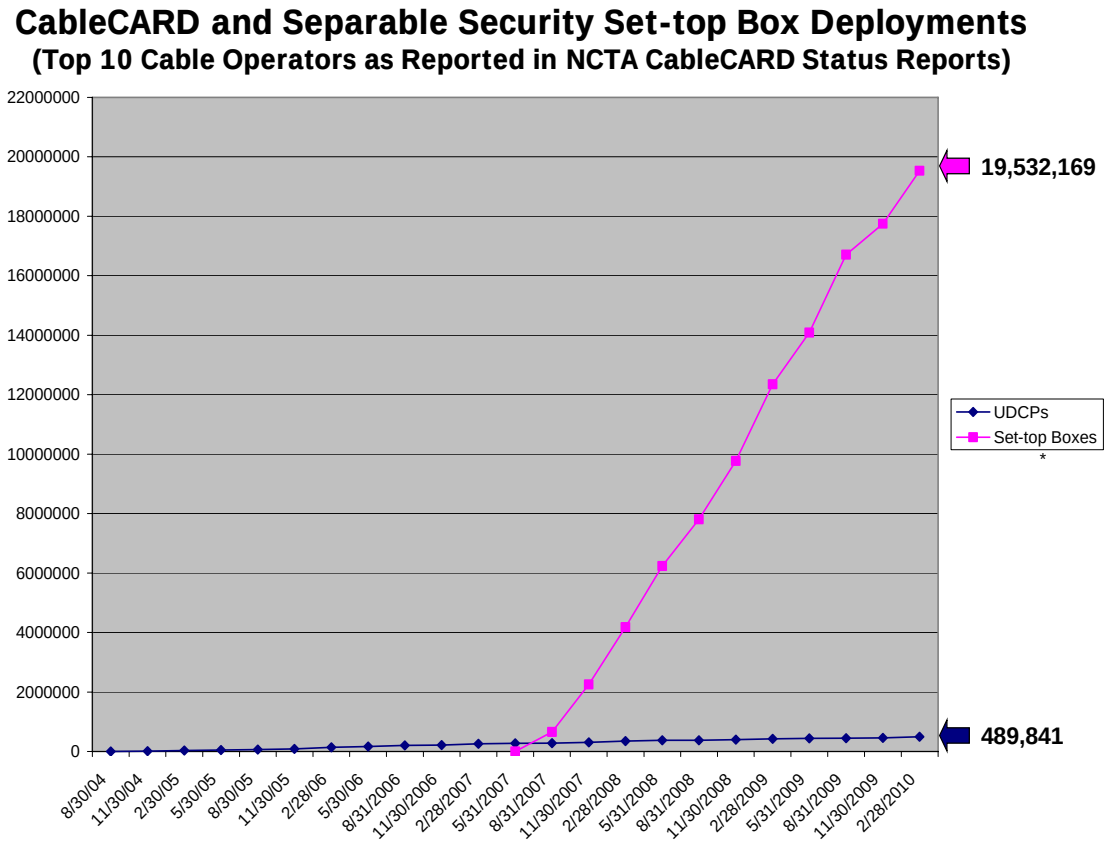
[113] If, as the Media Bureau has suggested, a CableCARD adds an average of about $56 in cost to a set-top box (*see James Cable, LLC et al., Requests for Waiver of Section 76.1204(a)(1) of the Commission's Rules*, Memorandum Opinion and Order, 23 FCC Rcd 10592, ¶ 9 n.30 (2008)), then the cable industry has incurred approximately $1.1 billion to date to comply with the integration ban (*i.e.*, $56 x 19.5 million devices = $1.092 billion).

[114] *Second Report and Order*, 20 FCC Rcd at 6807-08, ¶ 27.

CableCARDs in their own leased devices, compared to fewer than 490,000 CableCARDs in retail devices.[115]



With nearly 20 million devices already in the field, it is paramount for cable operators to continue to assure that CableCARDs work at the highest level of reliability for years to come. By comparison, when the major consumer electronics manufacturers wanted to assure that cable operators used tru2way in enough of their own devices to assure their support for tru2way in retail, they agreed to terms that required cable operators to deploy tru2way in 20% of operators'

[115] *See March 2010 CableCARD Status Report*. The *FNPRM* cites this report but mistakenly states that only 18.5 million CableCARD devices have been deployed by cable operators. *FNPRM*, ¶ 8.

devices up to a maximum of 10 million nationally.[116] The CE manufacturers agreed that any mandate for common reliance over and above 10 million devices would serve no purpose. If *10 million* devices have already been deemed adequate to assure common reliance in the tru2way set-top box context, then *20 million* devices are more than sufficient to assure common reliance for purposes of the integration ban. Imposing the integration ban on even more devices at this point is only imposing unnecessary costs on consumers with no offsetting incremental benefit.

The integration ban has, therefore, already achieved what it can. NCTA understands that the retail market has not developed to the extent that the Commission desired when it adopted the integration ban, but continued imposition of the integration ban over and above 20 million devices is not going to change that fact. There is simply no compelling evidence of any correlation between CableCARD use in leased devices and the adoption of retail CableCARD devices or other consumer benefits. Based upon the CableCARD reports submitted quarterly to the Commission, Time Warner Cable supports one retail CableCARD device for every 196 basic cable subscribers, Charter one for every 158, and Cox one for every 123.[117] But BendBroadband, which by waiver is permitted to continue to use integrated SD devices and therefore has less common reliance, has reported to NCTA that it supports one retail device for every 75 subscribers. And Cablevision, which has a waiver for both SD and HD devices, supports one retail device for every 148 subscribers.[118] There is no apparent correlation between the degree of CableCARD use in leased devices and the adoption of retail CableCARD devices.

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[116] *See* CS Docket 97-80, Letters from Kathryn Zachem, Comcast, to Monica Desai, Media Bureau Chief (May 28, 2008) (summarizing the tru2way MOU) and June 10, 2008 (attaching its text).

[117] *See March 2010 CableCARD Status Report*.

[118] *See id.*

But even if there were such evidence, there is certainly no evidence that consumers would receive a *commensurate incremental* benefit from continued imposition of the integration ban on devices over and above the 20 million CableCARD devices.

Integration ban relief is also warranted in light of the unfair competitive disadvantage that the ban has imposed on cable operators compared to DirecTV, DISH, and AT&T, which are the second, third and tenth largest MVPDs in the nation. Even if the integration ban is ended immediately, NCTA's cable operator members will still continue to provide substantial support for interoperable retail navigation devices and use the same CableCARD security in millions of their set-top boxes. DBS and AT&T, meanwhile, offer no similar support.[119] They instead now rely nearly exclusively on proprietary, leased devices, and do not support the use of third-party retail devices such as HD TiVos or cable-ready DTVs for new customers without one of their own set-top boxes. DirecTV started moving almost all new customers to leased devices in 2006,[120] and now DirecTV waives its lease fee for the first receiver.[121] DISH devices have virtually disappeared at retail and leased devices are now generally included in the base price of

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[119] *See* CS Docket 97-80, BendBroadband Request for Waiver (Oct. 4, 2006) at 13-18 and Reply Comments (Dec. 15, 2006) at 5-8.

[120] *See* National Cable & Telecommunications Association's Request for Waiver of 47 C.F.R. § 76.1204(a)(1), CSR-7056 (filed Aug. 16, 2006) at 26; CS Docket 97-80, BendBroadband Request for Waiver (Oct. 4, 2006) at 13-18 and Reply Comments (Dec. 15, 2006) at 5-8. BendBroadband presented detailed evidence that DirecTV has moved exclusively to proprietary, leased boxes for new customers as of March 1, 2006, and provided a copy of DirecTV's new leasing agreement for the record.

[121] *See generally* http://www.directv.com/DTVAPP/new_customer/base_packages.jsp?footernavtype=-1 (showing that DirecTV will provide HD/DVRs, HD devices, and standard set-tops for a $5/mo lease fee (with the fee for the first device waived; and that while DirecTV nominally charges an additional up-front charge for an HD/DVR, that it currently will provide that device for "free"); *see also DirecTV Opts for a Leasing Model*, MULTICHANNEL NEWS, Jan. 23, 2006 (describing DirecTV's decision to lease rather than sell its set-top boxes).

DISH programming packages.[122] And despite earlier promises of retail options, AT&T U-verse service can be used only with devices that must be leased from AT&T.[123]

It is the Commission's well-established policy to avoid market-distorting results. In the *Wireline Broadband Order*, the Commission proclaimed that "we should regulate like services in a similar manner" to promote market-based investment decisions, not ones driven by regulatory disparities, and it emphasized the importance of creating a "regulatory regime that is technology and competitively neutral."[124] In 2005, the Commission acknowledged the danger to the public interest from disparate imposition of the integration ban, noting that "[a]voiding rule based market distortions with respect to DBS as a competitor to cable … is an important consideration" for some future proceeding.[125] The Commission's direction in the *NOI* to apply the successor regime to all MVPDs is an important step toward long-term competitive neutrality. But it would be arbitrary and capricious to continue to impose the unnecessary burden of the integration ban on cable operators in the interim while not imposing it on all DBS and telephone company MVPDs.

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[122] DISH's retail partners such as Radio Shack have generally stopped selling DISH receivers and DISH now generally includes the cost of standard definition devices in programming packages.

[123] AT&T told the Commission in 2007 that "AT&T's middleware, DRM and software provider – Microsoft – is working on an OEM Adaptation Kit ("OAK"), that would allow third parties to build STBs or television receivers that will work with any Microsoft-enabled IPTV network." CS Docket 97-80, Comments of AT&T (Aug. 24, 2007) at 12. However, no such retail options are available. Customers must obtain set-top boxes from AT&T, which are generally included in the base price of programming packages. *See* AT&T U-verse Terms of Service, § 6, http://www.att.com/u-verse/att-terms-of-service.jsp ("The Services include a Residential Gateway … that is required for the Services to function … You agree to rent the Equipment as part of your purchase of the Services for the duration of your receipt of the Services. Rental fees will be included in your monthly charge for the Services.").

[124] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order, 20 FCC Rcd 14853, 14878, ¶ 45 (2005).

[125] *Second Report and Order*, 20 FCC Rcd at 6814, ¶ 38.

Therefore, NCTA proposes that the Commission end the integration ban. This proposed relief will save consumers millions of dollars, without in any way undermining the market for retail devices or cable operators' support for CableCARDs.

CONCLUSION

Adoption of the proposals as set forth herein would strike the best balance among improving consumers' experience with CableCARDs, reducing unnecessary costs of the integration ban borne by consumers, and prioritizing engineering and other resources for the framework of the future that will be developed through the *NOI*.

Respectfully submitted,

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June 14, 2010

<u>Exhibit A</u>

NCTA's Consumer Principles for Video Devices

cable

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March 12, 2010

The Honorable Julius Genachowski
Chairman
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: NBP Public Notice #27; GN Docket Nos. 09-47, 09-51, 09-137; CS Docket No. 97-80

Dear Mr. Chairman:

You have consistently expressed the view that one of the hallmarks of the Broadband Plan should be to support innovation across the board, and specifically in the video and Internet marketplace. I would like to take this opportunity to again express our support for a broad Commission proceeding that explores new cross-industry approaches to develop a fully-competitive and innovative retail video device marketplace. This is especially important now that four of the ten largest multichannel video providers are direct broadcast satellite and telephone companies which collectively serve nearly 40 million video households.

Our industry is committed to providing content to consumers where and when they want it, on all possible consumer devices, and for those devices to be innovative platforms for new applications. We want consumers to be able to buy video devices at retail and to know that cable content can be among their video sources. To that end, we offer the following consumer principles to which cable operators are committed and which we believe could serve as the foundation for Commission and inter-industry efforts.

1. *Consumers should have the option to purchase video devices at retail that can access their multichannel provider's video services without a set-top box supplied by that provider.*

2. *Consumers should also have the option to purchase video devices at retail that can access any multichannel provider's video services through an interface solution offered by that provider.*

3. *Consumers should have the option to access video content from the Internet through their multichannel provider's video devices and retail video devices.*

4. *Consumers should have the option to purchase video devices at retail that can search for video content across multiple content sources, including content from their multichannel provider, the Internet, or other sources.*

5. *Consumers should have the option to easily and securely move video content between and among devices in their homes.*

6. *Consumers should be assured the benefits of continuous innovation and variety in video products, devices and services provided by multichannel providers and at retail.*

7. *To maximize consumer benefits and to ensure competitive neutrality in a highly dynamic marketplace, these principles should be embraced by all video providers, implemented flexibly to accommodate different network architectures and diverse equipment options, and, to the maximum extent possible, serve as the basis for private sector solutions, not government technology mandates.*

We believe these principles should be implemented in ways that facilitate the deployment of different video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include the same features for all consumers. It is also critical to accommodate the flexible use of different architectures – now existing or developed in the future – for accessing multichannel video provider services. These could include, for instance, set-back boxes, gateways, network interface units, or delivery from the "cloud" without the need for any dedicated receiving device. Therefore, we should allow for the possibility of ever more innovative devices while preserving alternative possibilities such as innovation in the network or the cloud which may lead to fewer or simpler devices in the home. None of us can predict with any certainty which is the better or more likely path and it is quite possible that multiple paths will emerge.

In addition, well-crafted solutions must account for how content providers license programming to distributors, how all video providers associate security, transactional, advertising, and promotional elements with their video products, how consumer electronics manufacturers and retailers build support for new product categories, what consumers are willing to buy rather than lease, and how to assure that solutions do not inadvertently handicap future innovation. Solutions must also assure that, as Internet content is delivered over the television, it is afforded all of the copyright protections that apply when it is delivered to the home computer.

We believe that the vision of a competitive and innovative marketplace described above is in complete harmony with the Commission's goals and with the Communications Act, and should serve as the foundation for Commission and industry efforts going forward. The Commission can play an invaluable role by bringing various stakeholders together in this important work. As you (and we) take next steps in developing and implementing these goals, you will have our active participation and our full support.

Sincerely,

/s/ Kyle McSlarrow

Kyle McSlarrow

cc: Marlene H. Dortch

EXHIBIT B

NCTA Proposed Rules

Consensus Amendments from 2004 shown in double underline
Consensus Amendments from 2006 shown in single underline
NCTA February 26, 2004 Petition for Reconsideration proposed changes shown in dotted underline
New NCTA Proposed Amendments to FNPRM language shown in red.

Part 15 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

I. SUBPART B: Unintentional Radiators

1. Amend § 15.38 to read as follows

§15.38 Incorporations by Reference. *

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

(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.

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(**) M-Host_UNI-DIR-PICS-I01-061101, IBR approved for §15.123.

(**) TP-ATP-M-UDCP-I01-061101, 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,

t~~T~~he 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 a 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 ~~facility~~ testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States or an appropriately qualified independent laboratory with adequate equipment and competent personnel knowledgeable with respect to the standards referenced in paragraph (b) of this section concerning the procedures set forth in Uni-Dir-PICS-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). ~~However, t~~The manufacturer or importer shall ensure that all subsequent models of unidirectional digital cable products comply with the procedures in the Uni-Dir-PICS-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 ~~a facility~~ the testing laboratory representing cable television system operators serving a majority of the cable television subscribers in the United States.

(4) Unidirectional digital cable product models must be tested for compliance with Uni-Dir-PICS-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-I01-061101 as specified in the procedures set forth in TP-ATP-M-UDCP-I01-061101 (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-I01-061101 (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-I01-061101 (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-I01-061101 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-I01-061101 (incorporated by reference, see § 15.38) in accordance with the procedures set forth in TP-ATP-M-UDCP-I01-061101, (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-I01-061101 shall govern.

Part 76 of Title 47 of the Code of Federal Regulations is proposed to 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.

All digital cable systems shall comply with

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PREFERRED OPTION:

~~(b)(4)(ii) Include both: (A) a DVI or HDMI interface and (B) an IEEE 1394, **Ethernet, or USB 3.0 interface, or WiFi connectivity** on all high definition set-top boxes acquired by a cable operator for distribution to customers. Effective [Date], this interface must, at a minimum: (1) allow another device to transmit remote control commands via the same interface and (2) deliver video in an industry standard format.~~

~~(b)(4)(iii) Ensure that these cable operator-provided high definition set-top boxes shall comply with ANSI/SCTE 26-2001 (formerly DVS-194): "Home Digital Network Interface Specification with Copy Protection" (incorporated by reference, *see* § 76.602), with transmission of bit-mapped graphics optional, and shall support the CEA-931-A: "Remote Control Command Pass-through Standard for Home Networking" (incorporated by reference, *see* § 76.602), pass through control commands: tune function, mute function, and restore volume function. In addition these boxes shall support the power control commands (power on, power off, and status inquiry) defined in A/VC Digital Interface Command Set General Specification Version 4.0 (as referenced in ANSI/SCTE 26-2001 (formerly DVS-194): "Home Digital Network Interface Specification with Copy Protection" (incorporated by reference, *see* § 76.602)).~~

ALTERNATIVE OPTION:

(b)(4)(ii) Include both: (A) a DVI or HDMI interface and (B) an IEEE 1394, **Ethernet, USB, WiFi, MoCA, or other output for video programming** on all high definition set-top boxes acquired by a cable operator for distribution to customers**, other than unidirectional set-top boxes without recording functionality**. ~~**Effective [Date], this interface must, at a minimum: (1) allow another device to transmit remote control commands via the same interface and (2) deliver video in an industry standard format.**~~

~~(b)(4)(iii) Ensure that these cable operator-provided high definition set-top boxes shall comply with ANSI/SCTE 26-2001 (formerly DVS-194): "Home Digital Network Interface Specification with Copy Protection" (incorporated by reference, *see* § 76.602), with transmission of bit-mapped graphics optional, and shall support the CEA-931-A: "Remote Control Command Pass-through Standard for Home Networking" (incorporated by reference, *see* § 76.602), pass through control commands: tune function, mute function, and restore volume function. In addition these boxes shall support the power control commands (power on, power off, and status inquiry) defined in A/VC Digital Interface Command Set General Specification Version 4.0 (as referenced in ANSI/SCTE 26-2001 (formerly DVS-194): "Home Digital Network Interface Specification with Copy Protection" (incorporated by reference, *see* § 76.602)).~~

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.

PREFERRED OPTION:

(a)(1) A multichannel video programming distributor that utilizes navigation devices to perform conditional access functions shall make available equipment that incorporates only the conditional access functions of such devices. ~~Commencing on July 1, 2007, no multichannel video programming distributor subject to this section place in service new navigation devices for sale, lease, or use that perform both conditional access and other functions in a single integrated device.~~

ALTERNATIVE OPTION:

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(a)(2) The foregoing requirement shall not apply **(i) with respect to unidirectional navigation devices ~~set-top boxes~~ 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) include the charge for the CableCARD as a separate line item in the subscriber's bill~~;

(2) provide the means to allow subscribers to self-install the CableCARD in a CableCARD-enabled device purchased at retail if the MVPD allows its subscribers to self-install operator-leased set-top boxes; provided, however, that any such requirement shall only apply with respect to a CableCARD-enabled device purchased at retail for which the manufacturer of such device provides (i) detailed instructions in the user manual for such device regarding the installation of a CableCARD in such device, (ii) a troubleshooting guide and the manufacturer's toll-free telephone number in the user manual for such device, and (iii) a ready means for customers to access firmware and software updates for such device;

(3) provide a multi-stream CableCARD to any subscriber who requests one; and

(4) with respect to professional installations, ensure that the technician arrives with no fewer than the number of CableCARDS requested by the customer.

III. Subpart W – Encoding Rules

1. Amend § 76.1902 to read as follows:

§ 76.1902 Definitions

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(s) Unencrypted broadcast television means ~~the retransmission by a covered entity of~~ any service, program, or schedule or group of programs, that is a further transmission of a broadcast transmission (i.e., an over-the-air transmission for reception by the general public using radio frequencies allocated for that purpose) that substantially simultaneously is made by a terrestrial television broadcast station located within the country or territory in which the entity further transmitting such broadcast transmission also is located, where such broadcast transmission is not subject to ~~originally broadcast in the clear without use of~~ a commercially-adopted access control method (e.g., is broadcast in the clear to members of the public receiving such broadcasts), ~~by a terrestrial television broadcast station~~ regardless of whether such ~~covered~~ entity subjects such further transmission to ~~employs~~ an access control method ~~as a part of its retransmission~~.