

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

In the Matter of	)	
	)	
Expanding Consumers' Video Navigation Choices	)	MB Docket No. 16-42
	)	
Commercial Availability of Navigation Devices	)	CS Docket No. 97-80

**NOTICE OF PROPOSED RULEMAKING AND MEMORANDUM OPINION AND ORDER**

**Adopted: February 18, 2016**

**Released: February 18, 2016**

**Comment Date: [30 days after date of publication in the Federal Register]**

**Reply Comment Date: [60 days after date of publication in the Federal Register]**

By the Commission: Chairman Wheeler and Commissioners Clyburn, and Rosenworcel, issuing separate statements; Commissioners Pai and O'Rielly dissenting and issuing separate statements.

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## I. INTRODUCTION

1. In this proceeding, we propose rules that will both empower consumers to choose how they wish to access the multichannel video programming to which they subscribe, and promote innovation in the display, selection, and use of this programming and of other video programming available to consumers. We take steps to fulfill our obligation under Section 629 of the Communications Act to assure a commercial market for devices that can access multichannel video programming and other services offered over multichannel video programming systems.<sup>1</sup> In the Notice of Proposed Rulemaking, we propose rules intended to allow consumer electronics manufacturers, innovators, and other developers to build devices or software solutions that can navigate the universe of multichannel video programming with a competitive user interface. We also seek comment on outstanding issues related to our CableCARD rules. In the Memorandum Opinion and Order, consistent with our obligation under Section 106 of the STELA Reauthorization Act of 2014 (“STELAR”),<sup>2</sup> we remove the “integration ban” from our rules.<sup>3</sup>

2. In the Notice of Proposed Rulemaking, we:

- Tentatively conclude that the Commission should adopt new rules to further the goals of Section 629;
- Propose to require multichannel video programming distributors (“MVPDs”) to offer three flows of information using any published, transparent format that conforms to specifications set by open standards bodies. These information flows will allow manufacturers, retailers, and other companies that are not affiliated with an MVPD to design and build competitive navigation devices<sup>4</sup>:
  - The three information flows include (1) service discovery (information about what programming is available to the consumer, such as the channel listing and video-on-demand lineup, and what is on those channels), (2) entitlements (information about what a device is allowed to do with content, such as record it), and (3) content delivery (the video programming itself, along with information necessary to make the programming accessible to persons with disabilities).
  - Under this proposal, MVPDs could use different standards for their own equipment and applications, so as not to impede the evolution of MVPD devices and apps.
- Propose to require each MVPD to support at least one content protection system to protect its multichannel video programming that is licensable on reasonable and nondiscriminatory terms by an organization that is not affiliated with MVPDs;
- Propose to require each MVPD that offers its own application on unaffiliated devices without the need for MVPD-specific equipment to also offer the three information flows to unaffiliated applications without the need for MVPD-specific equipment;
- Seek comment on ways to address any licensing and consumer protection issues by:

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<sup>1</sup> 47 U.S.C. § 549.

<sup>2</sup> Pub. L. No. 113-200, § 106, 128 Stat. 2059, 2063-4 (2014).

<sup>3</sup> The “integration ban” prohibited cable operators from deploying new navigation devices (e.g., set-top boxes) that perform both conditional access and other functions in a single integrated device. 47 C.F.R. § 76.1204(a)(1).

<sup>4</sup> As we explain *infra* ¶¶ 21-22, we use the term “navigation device” throughout this document to refer to hardware, software (including applications), and combinations of hardware and software that consumers could use to access multichannel video programming.

- Proposing to require MVPDs to provide the information flows only to unaffiliated navigation devices that honor copying and recording limits via licenses with content protection system vendors;
- Proposing to ensure that public interest requirements involving emergency alerts, consumer privacy, and children’s programming advertising limits continue to be met by requiring that MVPDs enable the three information flows only for devices that certify compliance with these public interest requirements; and
- Proposing to leave licensing terms such as channel placement and treatment of advertising to marketplace forces, just as we did during the CableCARD regime.
- Propose to exempt from these proposed rules all cable operators that provide only analog services;
- Seek comment on how best to align our rules on device billing and subsidies with the text of the Act, the current state of the marketplace, and our goal of facilitating a competitive marketplace for navigation devices; and
- Seek comment on whether the rules the Commission adopted in a 2010 Report and Order to improve support for consumer-owned CableCARD devices<sup>5</sup> have continued relevance and should remain valid and enforceable, and, if so, whether to discontinue a requirement that the six largest cable operators report to the Commission about their support for CableCARD.

3. In the Memorandum Opinion and Order, we remove from our rules the “second sentence of section 76.1204(a)(1) of title 47, Code of Federal Regulations,” that is, the integration ban, as required by Section 106(b) of STELAR.<sup>6</sup>

## II. BACKGROUND

4. Congress adopted Section 629 of the Communications Act in 1996, and since then each era of technology has brought unique challenges to achieving Section 629’s goals. When Congress first directed the Commission to adopt regulations to assure a commercial market for devices that can access multichannel video programming, the manner in which MVPDs offered their services made it difficult to achieve the statutory purpose. Cable operators used widely varying security technologies, and the best standard available to the Commission was the hardware-based CableCARD standard – which the cable and consumer electronics industries jointly developed – that worked only with one-way cable services. In 2010, the Commission sought comment on a new approach that would work with two-way services, but still only a hardware solution would work at this time because software-based security was not sophisticated enough to meet content companies’ content protection demands.<sup>7</sup> This concept, called “AllVid,” would have allowed electronics manufacturers to offer retail devices that could access multichannel video programming, but would have required all operators to put a new device in the home between the network and the retail or leased set-top box. Now, as MVPDs move to Internet Protocol (“IP”) to deliver their services and to move content throughout the home, those difficulties are gone. Today, MVPDs provide “control channel” data that contains (1) the channels and programs they carry, (2) whether a consumer has the right to access each of those channels and programs, and (3) the usage rights

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<sup>5</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Third Report and Order and Order on Reconsideration, 25 FCC Rcd 14657 (2010).

<sup>6</sup> Pub. L. No. 113-200, § 106, 128 Stat. 2059, 2063-4 (2014).

<sup>7</sup> *Video Device Competition; Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility between Cable Systems and Consumer Electronics Equipment*, Notice of Inquiry, 25 FCC Rcd 4275, ¶ 1 (2010).

that a consumer has with respect to those channels and programs.<sup>8</sup> Many MVPDs already use IP to provide this control channel data. Moreover, most MVPDs have coalesced around a few standards and specifications for delivery of the video content itself,<sup>9</sup> and many have progressed to sending content throughout the home network via IP.<sup>10</sup> This standardization and increasing reliance on IP allows for software solutions that, with ground rules to ensure a necessary degree of convergence, will make it easier to finally fulfill the purpose of Section 629.

5. The regulatory and technological path to this proceeding reflects a long history. It begins with the Telecommunications Act of 1996, when Congress added Section 629 to the Communications Act.<sup>11</sup> Section 629 directs the Commission to adopt regulations to assure the commercial availability of devices that consumers use to access multichannel video programming and other services offered over multichannel video programming networks.<sup>12</sup> Section 629 goes on to state that these devices should be available from “manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.”<sup>13</sup> It also prohibits the Commission from adopting regulations that would “jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service.”<sup>14</sup> In enacting the section, Congress pointed to the vigorous retail market for customer premises equipment used with the telephone network and sought to create a similarly vigorous market for devices used with services offered over MVPDs’ networks.<sup>15</sup>

6. The Commission first adopted rules to implement Section 629 in 1998, just as “the enormous technological change resulting from the movement from analog to digital communications [was] underway.”<sup>16</sup> The Commission set fundamental ground rules for consumer-owned devices and access to services offered over multichannel video programming systems. The rules established (1) manufacturers’ right to build, and consumers’ right to attach, any non-harmful device to an MVPD network,<sup>17</sup> (2) a requirement that MVPDs provide technical interface information so manufacturers, retailers, and subscribers could determine device compatibility,<sup>18</sup> (3) a requirement that MVPDs make

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<sup>8</sup> All digital cable operators provide this information today via the CableCARD standard. “Service Information Delivered Out-of-Band for Digital Cable Television,” ANSI/SCTE 65 2008, [https://www.scte.org/documents/pdf/Standards/ANSI\\_SCTE%2065%202008.pdf](https://www.scte.org/documents/pdf/Standards/ANSI_SCTE%2065%202008.pdf).

<sup>9</sup> Final Report of the DSTAC, at 28, available at <https://transition.fcc.gov/dstac/dstac-report-final-08282015.pdf> (“DSTAC Report”) (“variants of MPEG-2, MPEG-4 AVC and MPEG HEVC are used for video compression across MVPDs”). A version of the DSTAC Report with continuous page numbering, the basis for the citations in this item, is available in the docket for this proceeding, MB Docket No. 16-42.

<sup>10</sup> See, e.g., DSTAC Report at 163 (describing AT&T’s use of IP to move content throughout the home); DSTAC Report at 206, 262 (“Many of the major MVPDs either support DLNA VidiPath today or plan to in the near future.”); “X1:XFINITY for VidiPath Overview,” <http://customer.xfinity.com/help-and-support/cable-tv/vidipath-overview/> (describing Comcast’s use of IP delivery from its X1 box to other “smart” devices in the home).

<sup>11</sup> See Telecommunications Act of 1996, Pub. L. No. 104-104, § 304, 110 Stat. 56, 125-126 (1996); 47 U.S.C. § 549(a).

<sup>12</sup> 47 U.S.C. § 549(a).

<sup>13</sup> *Id.*

<sup>14</sup> 47 U.S.C. § 549(b).

<sup>15</sup> H.R. REP. NO. 104-204, at 112-3 (1995).

<sup>16</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd 14775, 14776, ¶ 3 (1998) (“*First Plug and Play Report and Order*”).

<sup>17</sup> *Id.* at 14786-87, ¶¶ 28-32 (adopting 47 C.F.R. §§ 76.1201, 76.1202, 76.1203, and 76.1209).

<sup>18</sup> *Id.* at 14787-88, ¶¶ 33-34 (adopting 47 C.F.R. § 76.1205).

available a separate security element that would allow a set-top box built by an unaffiliated manufacturer to access encrypted multichannel video programming without jeopardizing security of programming or impeding the legal rights of MVPDs to prevent theft of service,<sup>19</sup> and (4) the integration ban, which required MVPDs to commonly rely on the separated security in the devices that they lease to subscribers.<sup>20</sup> The Commission did not initially impose a specific technical standard to achieve these rules, but instead adopted rules that relied “heavily on the representations of the various interests involved that they will agree on relevant specifications, interfaces, and standards in a timely fashion.”<sup>21</sup>

7. In December 2002, the cable and consumer electronics industries adopted a Memorandum of Understanding regarding a one-way plug-and-play “CableCARD” compatibility standard for digital cable. In October 2003, the Commission adopted the CableCARD standard as part of the Commission’s rules,<sup>22</sup> and consumer electronics manufacturers brought unidirectional CableCARD-compatible devices to market less than a year later. At least six million (and by one report, over 15 million) CableCARD devices were built and shipped,<sup>23</sup> but the nine largest incumbent cable operators have deployed only 618,000 CableCARDS for use in consumer-owned devices.<sup>24</sup> These rules drove innovations that consumers value greatly today: high-definition digital video recording, competitive user interfaces that provided more program information to viewers, the ability to set recordings remotely,<sup>25</sup> the incorporation of Internet content with cable content, and automatic commercial skipping on cable content.<sup>26</sup> Throughout the mid-to-late 2000s, cable operators increasingly transitioned their systems to digital and introduced interactive video services such as video-on-demand and content delivery methods such as switched digital video. The Commission’s CableCARD rules and the Memorandum of

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<sup>19</sup> *Id.* at 14792-809, ¶¶ 47-81 (adopting 47 C.F.R. § 76.1204). *See also* 47 U.S.C. § 549(b). The Commission exempted “navigation devices that operate throughout the continental United States and are commercially available from unaffiliated sources” and stated that this exemption applied to direct broadcast satellite (“DBS”). *First Plug and Play Report and Order*, 13 FCC Rcd at 14779, ¶ 8. As we discuss in ¶ 20 below, however, it does not appear that DBS equipment is commercially available from unaffiliated sources any longer.

<sup>20</sup> *Id.* at 14802-03, ¶¶ 67-69.

<sup>21</sup> *Id.* at 14779, ¶ 8.

<sup>22</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility Between Cable Systems and Consumer Electronics Equipment*, Second Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 20885 (2003) (“*Second Plug and Play Order*”).

<sup>23</sup> Eric A. Taub, *A CableCard That Hasn't Been Able to Kill the Set-Top Box*, N.Y. TIMES, July 3, 2006, <http://www.nytimes.com/2006/07/03/technology/03cable.html> (“[S]ix million CableCard-ready digital TVs have been sold to consumers.”); Nate Anderson, *The case of the missing CableCARD-ready set-top box*, ARS TECHNICA, Oct. 16, 2007, <http://arstechnica.com/features/2007/10/missing-cablecard-set-top-box/> (“The Consumer Electronics Association tells Ars that more than 8 million digital-cable-ready sets have been shipped to date.”); Gary Merson, *How The Cable Industry Plans to Cheat 10+ Million HDTV Owners-an HD GURU Investigative Report*, HD GURU, Apr. 15, 2008, <http://hdguru.com/how-the-cable-industry-plans-to-cheat-10-million-hdtv-owners/233/> (“TV makers quickly responded [to the CableCARD standard] by building over 10.1 million HDTVs with CableCARD slots through 2007 and has plans to add another 4.87 M+ HDTVs in 2008 (Consumer Electronics Association forecast).”).

<sup>24</sup> Letter from Neal Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 1 (Oct. 30, 2015).

<sup>25</sup> Walter Mossberg, *The HDTV Dilemma: Pay for TiVo's Recorder Or Settle for Cable's?*, THE WALL STREET JOURNAL, Dec. 28, 2006, <http://www.wsj.com/articles/SB116726248529661013>.

<sup>26</sup> Jeff Baumgartner, *Netflix To Grace Home Screen Of Samsung's New CableCARD Box*, MULTICHANNEL NEWS, Oct. 18, 2013, <http://www.multichannel.com/news/content/netflix-grace-home-screen-samsung-s-new-cablecard-box/357218>; Jefferson Graham, *Review: TiVo Bolt stream, DVR + cord shaver*, USA TODAY, Oct. 12, 2015, <http://www.usatoday.com/story/tech/2015/11/04/review---tivo-bolt-stream-dvr-cord-shaver/75109560/>.



Understanding did not prescribe methods for retail devices to access those interactive services, and therefore retail CableCARD devices could not access cable video-on-demand services.<sup>27</sup> Moreover, cable operators generally offered poor CableCARD support,<sup>28</sup> which made it much more difficult for consumers to set up a retail device than a leased device.

8. In 2010, the Commission took steps to remedy problems with the CableCARD regime. The Commission adopted additional CableCARD-related rules to improve cable operator support for retail CableCARD devices.<sup>29</sup> The Commission also sought comment on a successor technology in the form of a Commission-designed, standardized converter box that would be designed to allow “any electronics manufacturer to offer smart video devices at retail that can be used with the services of any MVPD and without the need to coordinate or negotiate with MVPDs.”<sup>30</sup> The Commission sought comment on this AllVid concept in a Notice of Inquiry but ultimately decided not to propose rules to mandate it.<sup>31</sup>

9. In late 2014, Congress passed STELAR. Section 106 of that law had two main purposes: first, it eliminated the integration ban as of December 4, 2015, and second, it directed the Chairman of the Commission to appoint an advisory committee of technical experts to recommend a system for downloadable security that could advance the goals of Section 629.<sup>32</sup> The Chairman appointed 19 members to the Downloadable Security Technical Advisory Committee (“DSTAC”), and the committee submitted its report to the Commission on August 28, 2015.<sup>33</sup> The DSTAC Report gave an account of the increasing number of devices on which consumers are viewing video content, including laptops, tablets, phones, and other “smart,” Internet-connected devices.<sup>34</sup> The DSTAC Report pointed to two main

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<sup>27</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Third Report and Order and Order on Reconsideration, 25 FCC Rcd 14657, 14661, ¶ 6 (2010) (“*Third Plug and Play Report and Order*”).

<sup>28</sup> See, e.g., Ben Drawbaugh, *Review: Series 3 TiVo*, Engadget, Sept. 27, 2006, <http://www.engadget.com/2006/09/27/review-series3-tivo/> (“Based on others review [sic] we had very low expectations about the CableCARD install, [but] the hardest part of the CableCARD install was getting the installer to do his part.”); Harry McCracken, *TiVo Gets a Major Upgrade, But Can it Beat Google TV?*, TIME, Oct. 19, 2010, <http://content.time.com/time/business/article/0,8599,2026338,00.html> (“Using TiVo with cable requires you to procure a security device called a CableCARD and technical assistance from your TV provider. The process goes smoothly in some cases, but when I set up the Premiere, the first Comcast rep I talked to not only failed to get the CableCARD up and running but also managed to disable my Internet connection entirely.”).

<sup>29</sup> *Third Plug and Play Report and Order*, 25 FCC Rcd at 14658, ¶ 1.

<sup>30</sup> *Video Device Competition; Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices; Compatibility between Cable Systems and Consumer Electronics Equipment*, Notice of Inquiry, 25 FCC Rcd 4275, ¶ 1 (2010).

<sup>31</sup> Paul Sweeting, *Where have you gone, AllVid?*, GIGAOM, May 31, 2013, <https://research.gigaom.com/2013/05/where-have-you-gone-allvid/>. In the ordering clauses below, we take the opportunity to close that docket and end the discussion about the AllVid concept, because the approach on which comment was sought in that proceeding is superseded by the proposals in this NPRM.

<sup>32</sup> Pub. L. No. 113-200, § 106, 128 Stat. 2059, 2063-4 (2014) (“Not later than 45 days after the date of the enactment of this Act, the Chairman of the Commission shall establish a working group of technical experts representing a wide range of stakeholders, to identify, report, and recommend performance objectives, technical capabilities, and technical standards of a not unduly burdensome, uniform, and technology- and platform-neutral software-based downloadable security system designed to promote the competitive availability of navigation devices in furtherance of section 629 of the Communications Act of 1934. . . . Not later than 9 months after the date of the enactment of this Act, the working group shall file a report with the Commission on its work.”).

<sup>33</sup> See generally DSTAC Report.

<sup>34</sup> *Id.* at 38-39.

reasons for this shift: (1) software-based applications have made it easier for content providers to tailor their services to run on different hardware,<sup>35</sup> and (2) there are an increasing number of software-based content protection systems that copyright holders are comfortable relying on to protect their content.<sup>36</sup> The Media Bureau released a Public Notice seeking comment on the DSTAC Report on August 30, 2015.<sup>37</sup> The DSTAC Report and comments that we received in response to it underlie and inform our Notice of Proposed Rulemaking.

10. The DSTAC Report offered two proposals regarding the non-security elements and two proposals regarding the security elements of a system that could implement Section 629. For the non-security elements, the DSTAC Report presented both an MVPD-supported proposal that is based on proprietary applications and would allow MVPDs to retain control of the consumer experience,<sup>38</sup> and a consumer electronics-supported proposal that is based on standard protocols that would let a competing device or application offer a consumer experience other than the one the MVPD offers.<sup>39</sup> With respect to security, the DSTAC Report presented both an MVPD-supported proposal based on digital rights management (similar to what Internet-based video services use to protect their video content),<sup>40</sup> and a consumer electronics-supported proposal based on link protection (similar to how content is protected as it travels from a Blu-ray player to a television set).<sup>41</sup>

### III. NOTICE OF PROPOSED RULEMAKING

#### A. Introduction

11. In this Notice of Proposed Rulemaking, we propose rules that are intended to assure a competitive market for equipment, including software, that can access multichannel video programming. A recent news report on this topic summarized the issue succinctly: “some consumer advocates wonder why, if you do want a set-top box, you can’t just buy one as easily as you’d buy a cell phone or TV for that matter.”<sup>42</sup> Before MVPDs transitioned to digital service, it was easy for consumers to buy televisions that received cable service without the need for a set-top box. In 1996, Congress recognized that we were on the cusp of a digital world with diverging system architectures. To address this, Congress adopted Section 629, and the Commission implemented that section of the statute by separating the parts of cable system architectures that were not consistent among systems into a module called a CableCARD that cable operators could design to work with their system-specific technology. This module converted system-specific aspects into a standardized interface; this standardized interface allowed a manufacturer to build a single device that could work with cable systems nationwide, despite their divergent technologies. Today, the world is converging again, this time around IP to provide control channel data,

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<sup>35</sup> *Id.* at 262-65.

<sup>36</sup> *Id.* at 75-77.

<sup>37</sup> *Media Bureau Seeks Comment on DSTAC Report*, Public Notice, MB Docket No. 15-64, DA 15-982, 2015 WL 5164960 (MB 2015). In this NPRM, we close MB Docket No. 15-64 to make way for this Commission-level rulemaking, but we incorporate the record for MB Docket No. 15-64 into the record for this proceeding.

<sup>38</sup> *Id.* at 262-78. Throughout this document, we refer to this as the “Proprietary Applications approach,” and its supporters as the “Proprietary Applications advocates.”

<sup>39</sup> *Id.* at 242-61. Throughout this document, we refer to this as the “Competitive Navigation approach,” and its supporters as the “Competitive Navigation advocates.”

<sup>40</sup> *Id.* at 81-91. The Proprietary Applications advocates supported this approach to security. We discuss this approach *infra* ¶¶ 52, 57.

<sup>41</sup> *Id.* at 92-94. The Competitive Navigation advocates supported this approach to security. We discuss this approach *infra* ¶¶ 53, 55.

<sup>42</sup> Nancy Marshall-Genzer, *Why we don’t buy cable TV set-top boxes*, MARKETPLACE, Aug. 31, 2015, <http://www.marketplace.org/topics/business/why-we-dont-buy-cable-tv-set-top-boxes>.

in some cases also using IP for content delivery over MVPD systems, and in many cases using IP for content delivery throughout the home. Standards will allow us to develop, and MVPDs to follow, ground rules about compatibility that are technology-neutral: the rules will allow MVPDs to upgrade their networks freely and any changes that a navigation device needs to conform to those changes can be supplied via software download rather than upgrading consumers' hardware. The ground rules we propose in this Notice of Proposed Rulemaking are designed to let MVPD subscribers watch what they pay for wherever they want, however they want, and whenever they want, and pay less money to do so, making it as easy to buy an innovative means of accessing multichannel video programming (such as an app, smart TV, or set-top box) as it is to buy a cell phone or TV.<sup>43</sup>

12. As discussed below, our proposed rules are based on three fundamental points. First, the market for navigation devices is not competitive. Second, the few successes that developed in the CableCARD regime demonstrate that competitive navigation—that is, competition in the user interface and complementary features—is essential to achieve the goals of Section 629. Third, entities that build competitive navigation devices, including applications, need to be able to build those devices without seeking permission from MVPDs, because MVPDs offer products that directly compete with navigation devices and therefore have an incentive to withhold permission or constrain innovation, which would frustrate Section 629's goal of assuring a commercial market for navigation devices.

### **B. The Need for Rules**

13. Today, consumers have few alternatives to leasing set-top boxes from their MVPDs, and the vast majority of MVPD subscribers lease boxes from their MVPD. In July 2015, Senators Ed Markey and Richard Blumenthal reported statistics that they gathered from a survey of large MVPDs: “approximately 99 percent of customers rent[] their set-top box directly from their pay-TV provider, [and] the set-top box rental market may be worth more than \$19.5 billion per year, with the average American household spending more than \$231 per year on set-top box rental fees.”<sup>44</sup> There is evidence that increasingly consumers are able to access video service through proprietary MVPD applications as well. According to NCTA, consumers have downloaded MVPD Android and iOS applications more than 56 million times, more than 460 million IP-enabled devices support one or more MVPD applications, and 66 percent of them support applications from all of the top-10 MVPDs.<sup>45</sup> These statistics show, however, that almost all consumers have one source for access to the multichannel video programming to which they subscribe: the leased set-top box, or the MVPD-provided application. Therefore, we tentatively conclude that the market for navigation devices is not competitive, and that we should adopt new regulations to further Section 629. We invite comment on this tentative conclusion.

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<sup>43</sup> We believe that our proposal is consistent with the seven consumer principles that NCTA committed to in 2010 and suggested “could serve as the foundation for Commission and inter-industry efforts.” See Letter from Kyle McSlarrow, President and CEO, National Cable & Telecommunications Association, to Julius Genachowski, Chairman, Federal Communications Commission, CS Docket No. 97-80 (Mar. 12, 2010).

<sup>44</sup> Press Release, Sen. Edward Markey, Markey, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace (July 30, 2015), <http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace> (“Markey/Blumenthal Release”). In its reply comments, NCTA states that “[c]able operators do not own their set-top box vendors. They are paying for, not profiting on, set-top boxes.” NCTA Reply at 5; see also Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 1 (Feb. 11, 2016) (asserting that the survey “paint[s] a misleading picture about costs and TV providers’ supposed profits from these boxes.”). Although this information would not directly address whether the market for navigation devices is competitive, we invite NCTA member companies and other MVPDs to submit financial data that includes the price that they pay for set-top boxes compared to the rate at which they lease those devices to refute the data that are currently available.

<sup>45</sup> NCTA Comments at 14-15, 40-41; ARRIS Comments at 3.



14. Certain MVPD commenters argue that the market for devices is competitive and that we need not adopt any new regulations to achieve Section 629's directive.<sup>46</sup> They argue that the popularity of streaming devices such as Amazon Fire TV, AppleTV, Chromecast, Roku, assorted video game systems, and mobile devices that can access over-the-top services such as Netflix, Amazon Instant Streaming, and Hulu, shows that Congress's goals in Section 629 have been met.<sup>47</sup> We disagree. With certain limited exceptions, it appears that those devices are not "used by consumers to access multichannel video programming," and are even more rarely used as the sole means of accessing MVPDs' programming.<sup>48</sup> We seek comment on this point. Which MVPDs allow their subscribers to use these devices as their sole means of accessing multichannel video programming? We seek specific numbers from MVPDs on the number of and percentage of their subscribers who use such devices as their sole means of accessing multichannel video programming without any MVPD-owned equipment in the subscriber's home. How do these numbers compare to other commercial markets for consumer electronics?

15. MVPDs may have several incentives for maintaining control over the user interface through which consumers access their multichannel video programming service, but for the reasons we provide below, we believe that the Act requires competitive navigation that would allow third parties to develop innovative ways to access multichannel video programming.<sup>49</sup> We seek comment on those incentives. For example, how do MVPDs profit from their control of the user interface? Do MVPDs track consumer viewing habits, and if so, do they profit in any way as a result of that tracking (for example, by using the information to sell advertising or selling the information to ratings analytics companies)? What are the profit margins for selling that data? How long does a typical consumer lease a MVPD set-top box before it is replaced? What are MVPDs' profit margins on set-top boxes? Do MVPDs leverage their user interfaces to sell other services offered over multichannel video programming

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<sup>46</sup> NCTA Reply at 7; ACA Reply at 6-9; Comcast Comments at 2-3; AT&T Reply at 4-5; BBT Reply at 7.

<sup>47</sup> See, e.g., ACA Reply at 6-9; Comcast Comments at 2-3; Free State Foundation Comments at 11-12 (asserting that the "disruptive presence of OVDs and the streaming media devices" justifies discontinuing regulation under Section 629). But see *Required Equipment for FiOS TV*, VERIZON, <https://www.verizon.com/support/residential/tv/fiostv/general+support/new+to+fiostv/questionsone/84832.htm> (last visited Dec. 29, 2015); Additional information regarding FiOS TV equipment, VERIZON, <https://www.verizon.com/support/residential/tv/fiostv/general+support/new+to+fiostv/questionsone/84837.htm> (last visited Dec. 29, 2015) ("Rental is the only option for Verizon FiOS TV Set-Top Boxes. . . . Set-Top Boxes are required for each television where you would like to receive digital programming."); *HD Equipment Requirements*, COMCAST XFINITY, <http://customer.xfinity.com/help-and-support/cable-tv/equipment-needed-for-high-definition-service/> (last visited Dec. 29, 2015) ("To view high-definition (HD) programs, you'll need: An HD-enabled cable box, such as an HD-DVR box or HD set-top box. We'll provide this box for an additional monthly fee."); *Can I purchase DIRECTV equipment instead of leasing?*, DIRECTV, [https://support.directv.com/app/answers/detail/a\\_id/750/kw/equipment/session/L3RpbWUvMTQ1MTQwNjAwNC9zaWQvWXc4S1BiRm0%3D](https://support.directv.com/app/answers/detail/a_id/750/kw/equipment/session/L3RpbWUvMTQ1MTQwNjAwNC9zaWQvWXc4S1BiRm0%3D) (last visited Dec. 29, 2015) ("All DIRECTV equipment offers are for leased equipment only. Equipment costs, particularly for advanced products such as HD and/or DVR receivers, can be sizable and we believe leasing provides our customers a better and more affordable alternative. Also, as the technology in our receivers becomes more advanced, leasing allows us to continue to provide the latest equipment to you — at minimal cost. Leasing also permits affordable upgrades and free replacement receivers.").

<sup>48</sup> 47 U.S.C. § 549(a). There are certain trial or pilot programs that allow consumers to access multichannel video programming via applications. See *Roku Trial from Time Warner Cable*, TIME WARNER CABLE, <http://www.timewarnercable.com/en/enjoy/roku.html> (last visited Jan. 13, 2016); Jeff Baumgartner, *Charter Targets Cord-Cutters With 'Spectrum TV Stream'*, MULTICHANNEL NEWS, Oct. 23, 2015, available at <http://www.multichannel.com/blog/bauminator/charter-targets-cord-cutters-spectrum-tv-stream/394774>; *Introducing Stream TV. Only from Xfinity*, COMCAST, <http://www.xfinity.com/stream> (last visited Jan. 13, 2016) (indicating that the service is available on tablets, smartphones, and computers, but not television sets, and that the service is "[a]vailable in select areas in Massachusetts, New Hampshire, Maine and the Greater Chicago area").

<sup>49</sup> *Infra* ¶¶ 25-34.

systems, *e.g.*, home security? Do MVPDs offer integrated search across their multichannel video programming and other unaffiliated video services, and, if not, why not?

16. In addition, in today's world a retail navigation device developer must negotiate with MVPDs to get permission to provide access to the MVPD's multichannel video programming, on the MVPD's terms. These business-to-business arrangements are a step in the right direction for consumers because the arrangements have increased the universe of devices they can use to receive service. The arrangements have not assured a competitive retail market for devices from unaffiliated sources as required by Section 629 because they do not always provide access to all of the programming that a subscriber pays to access, and may limit features like recording.<sup>50</sup> In other words, these business-to-business arrangements—typically in the form of proprietary apps—do not offer consumers viable substitutes to a full-featured, leased set-top box. Moreover, these relationships are purely at the discretion of the MVPD and, to date, have only provided access to the MVPD's user interface rather than that of the competitive device.

17. Some argue that these business-to-business deals are essential to ensure that the few independent, diverse programmers that currently exist can continue to survive because they ensure that those programmers can rely on the channel placement and advertising agreements that they have contracted for with the MVPD.<sup>51</sup> Our expectation, however, is that competition in interfaces, menus, search functions, and improved over-the-top integration will make it easier for consumers to find and watch minority and special interest programming. In addition, our goal is to preserve the contractual arrangements between programmers and MVPDs, while creating additional opportunities for programmers, who may not have an arrangement with an MVPD, to reach consumers.<sup>52</sup> We seek comment on this analysis.<sup>53</sup>

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<sup>50</sup> We note that over five years ago, NCTA stated that “MVPDs are bringing MVPD offerings to retail devices via Internet-based televisions, tablets and PCs in a ‘shopping mall’ experience, the way Netflix appears on Blu-Ray players.” Letter from Neal Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB 10-91, CS Docket No. 97-80, PP Docket No. 00-67 (Feb. 8, 2011). As we explain above, however, it does not appear that many, if any, of those MVPDs have made headway in making their full service offerings available on Internet-based televisions, tablets or PCs in a way that eliminates the need for consumers to lease set-top boxes. *See supra* ¶¶ 13-14, 19. Also, as set forth in more detail below, we seek comment on whether these business-to-business arrangements achieve Section 629's goal of assuring the commercial availability of navigation devices from “vendors not affiliated with any multichannel video programming distributor.” *See infra* ¶ 49.

<sup>51</sup> *See, e.g.*, Letter from Ignacio Sanz de Acedo, CEO & General Manager, ¡HOLA! TV, to Tom Wheeler, Chairman, Federal Communications Commission, at 1 (Feb. 3, 2016) (“The proposal would allow some large Internet companies to unilaterally take our content without our approval, or compensation, disassociate it from existing negotiated channel placements, and enable those entities to sell intrusive advertising absent a mechanism to share any revenue with programmers, such as Hola! TV. Where and how our channel appears on pay TV providers systems is critical to our success.”); Letter from Michael Schwimmer, CEO, Fuse Media, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Oct. 30, 2015) (“Given these factors, anything that would reduce viewership, per-subscriber fees, advertising revenues, or exposure to new audiences to the detriment of general-audience programmers would hinder ethnic niche independent programmers to an even greater degree.”).

<sup>52</sup> *See* Letter from Brian Woolfolk, Principal, Swann Creek Strategies, to Marlene H. Dortch, Secretary, Federal Communications Commission (Feb. 11, 2016) (describing the difficulties that programmers who produce diverse and independent content have in obtaining carriage on large MVPD lineups, and asserting that a competitive market for set-top boxes could direct consumers to that programming without MVPD carriage and have corresponding positive social impact).

<sup>53</sup> We also strongly encourage these parties to respond to our *Notice of Inquiry* that seeks comment on the current state of programming diversity and the principal obstacles that independent programmers face in obtaining carriage on video distribution platforms. *Promoting Diverse and Independent Programming*, Notice of Inquiry, MB Docket No. 16-41, FCC 16-19 (rel. Feb. 18, 2016).

18. We also seek specific comment on the process that an MVPD uses to decide whether to allow such a device to access its services. Have retail navigation device developers asked MVPDs to develop applications for their devices and been denied? Have MVPDs asked navigation device developers to carry their applications and been denied? Do programmers prohibit MVPDs from displaying their programming on certain devices? If so, what are the terms of those prohibitions? Should the Commission ban such terms to assure the commercial availability of devices that can access multichannel video programming,<sup>54</sup> and under what authority? Are “premium features and functions” of devices such as televisions and recording devices limited due to “cable scrambling, encoding, or encryption technologies?”<sup>55</sup> If so, could we adopt the rules we propose below pursuant to our authority under Section 624A of the Act?<sup>56</sup>

19. As noted above, it appears that consumers have downloaded proprietary MVPD applications many times; we seek comment on whether consumers actually use those applications to access multichannel video programming. Section 629 directs us to adopt regulations to assure the commercial availability of “equipment used by consumers to access multichannel video programming.”<sup>57</sup> MVPDs argue that their proprietary applications are used by consumers to access multichannel video programming; to better evaluate this argument, we seek further comment on usage rates of those proprietary applications. What percentage of consumers use MVPD applications to view programming one month after downloading an application? How many hours per month, on average, does a consumer use an MVPD application to view programming, compared to consumers’ use of leased boxes? How many MVPDs make their full channel lineups available via applications? Do any MVPDs allow consumers to access multichannel video programming, beyond unencrypted signals, without leasing or purchasing some piece of MVPD equipment? How many consumers that lease a set-top box also use an MVPD application? How many consumers view multichannel video programming only via a proprietary MVPD application, without leasing a box? Are proprietary MVPD applications available on all platforms and devices? Or do MVPDs enter into agreements with a limited number of manufacturers or operating system vendors?

20. *Section 629 and DBS Providers.* In the *First Plug and Play Report and Order*, the Commission exempted DBS providers from our foundational separation of security requirement because “customer ownership of satellite earth stations receivers and signal decoding equipment has been the norm in the DBS field.”<sup>58</sup> This meant that DBS was also exempt from most of the rules that the Commission adopted in the *Second Plug and Play Order*.<sup>59</sup> Unfortunately, in the intervening years the

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<sup>54</sup> Section 76.1200 defines the term Navigation Devices as “Devices such as converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems.” 47 C.F.R. § 76.1200(c). We seek comment on this term in paragraphs 21-24 below.

<sup>55</sup> 47 U.S.C. § 544a.

<sup>56</sup> 47 U.S.C. § 544a(d) (“The Commission shall periodically review and, if necessary, modify the regulations issued pursuant to this section in light of any actions taken in response to such regulations and to reflect improvements and changes in cable systems, television receivers, video cassette recorders, and similar technology.”).

<sup>57</sup> 47 U.S.C. § 549(a).

<sup>58</sup> *First Plug and Play Report and Order*, 13 FCC Rcd at 14780, ¶ 10. See also *id.* at 14800-02, ¶¶ 64-66 (observing that in the marketplace for DBS equipment, “devices are available at retail and offer consumers a choice, as compared to equipment for other MVPD services”; thus the Commission was “reluctant to implement a rule that could disrupt an evolving [DBS equipment] market that is already offering consumers the benefits that derive from competition”). See also *Echo Star Satellite LLC v. FCC*, 704 F.3d 992, 997 (D.C. Cir. 2013) (observing that the Commission had recognized that satellite equipment was “already available at retail” and “portable nationwide”).

<sup>59</sup> The exception is that the Commission applied encoding rules, which imposed copy control limits, to DBS providers. *Second Plug and Play Order*, 18 FCC Rcd at 20905-06, ¶ 46, *vacated*, *Echo Star*, 704 F.3d 992 (D.C. Cir. 2013).

market did not evolve as we expected; in fact, from a navigation device perspective, it appears that the market for devices that can access DBS multichannel video programming has devolved to one that relies almost exclusively on equipment leased from the DBS provider.<sup>60</sup> Accordingly, to implement the requirements of Section 629 fully, we tentatively conclude that any regulations we adopt should apply to DBS. We seek comment on this tentative conclusion. We also seek comment on the availability of DBS equipment at retail. Has the state of the marketplace changed since 1998, when the Commission had observed an “evolving” competitive market for DBS equipment and, if so, to what extent?<sup>61</sup> In addition to our authority under Section 629, we seek comment on our authority under Section 335 to adopt any of the rules we propose below or any other rules related to competition in the market for devices that can access DBS multichannel video programming, which would serve the public interest.<sup>62</sup> Finally, we recognize the “weirdness of satellite”<sup>63</sup> that the DSTAC emphasized in this context because the DBS systems cannot assume that bidirectional communication is available in all cases, and accordingly we seek comment on differences in DBS delivery or system architecture that should inform our proposed rules set forth below.

### C. Authority

21. We tentatively conclude that the Commission has legal authority to implement our proposed rules. Section 629 of the Act, entitled “Competitive Availability of Navigation Devices,” directs the Commission to “adopt regulations to assure the commercial availability . . . of converter boxes, *interactive communications equipment, and other equipment* used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, *from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.*”<sup>64</sup> We propose to interpret the terms “manufacturers, retailers, and other vendors” broadly to include all hardware manufacturers, software developers, application designers, system integrators, and other such entities that are not affiliated with any MVPD and who are involved in the development of navigation devices or whose products enable consumers to access multichannel video programming over any such device. We believe a broad interpretation is necessary to ensure that these third parties are provided the information they need from MVPDs to facilitate the commercial development of competing navigation technologies in order to fulfill the goals of Section 629.

22. The Act does not define the terms “navigation device” or “interactive communications equipment, and other equipment,” but we believe that Congress intended the terms to be far broader than

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<sup>60</sup> See, e.g., BendBroadband’s Request for Waiver of Section 76.1204(a)(1) of the Commission’s Rules, CSR-7057-Z, at 13-18, Exhibit B (filed Oct. 4, 2006) (“[R]etailers do not ‘sell’ [DirecTV] boxes in the traditional sense; instead, they hand over these boxes only after the consumer has signed an agreement to lease the box from DirecTV”); National Cable & Telecommunications Association’s Request for Waiver of 47 C.F.R. § 76.1204(a)(1), CSR-7056-Z, at 24-27 (filed Aug. 16, 2006) (“While the Commission found in 1998 that DirecTV and EchoStar met these criteria but cable did not, those findings could not be made today. . . . This dramatic change became especially clear on March 1, 2006, when DirecTV initiated a new equipment policy that effectively eliminates the ability of most new customers to access its service by any means other than a proprietary set-top box leased from DirecTV”); See Press Release, DIRECTV Investor Relations, DIRECTV Debuts New Hardware Strategy at CES 2004 (Jan. 8, 2004), <http://phx.corporate-ir.net/phoenix.zhtml?c=127160&p=irol-newsArticle&ID=570782&highlight> (“Beginning mid-2004, DIRECTV will assume complete responsibility for the sale and distribution to retail of all DIRECTV set-top boxes used to receive DIRECTV® programming and services.”); Linda Moss, *DirecTV Opts for a Leasing Model*, MULTICHANNEL NEWS, Jan. 23, 2006 (reporting that DirecTV would begin leasing set-top boxes rather than selling them).

<sup>61</sup> See *supra* n.58.

<sup>62</sup> 47 U.S.C. § 335.

<sup>63</sup> Transcript of March 24, 2015 DSTAC meeting at 169; Transcript of July 7, 2015 DSTAC meeting at 233; Transcript of Aug. 4, 2015 DSTAC meeting at 44.

<sup>64</sup> 47 U.S.C. § 549(a) (emphasis added).



conventional cable boxes or other hardware alone; Section 629 is plainly written to cover any equipment used by consumers to access multichannel video programming and other services, and software features have long been essential elements of such equipment.<sup>65</sup> Exercising our authority to interpret ambiguous terms in the Communications Act, we tentatively conclude that these terms include both the hardware and software (such as applications) employed in such devices that allow consumers to access multichannel video programming and other services offered over multichannel video programming systems.<sup>66</sup> We believe this interpretation best serves the intent of Congress as reflected in the legislative history, which directs, among other things, that we “should take cognizance of the current state of the marketplace.”<sup>67</sup> In today’s marketplace, “navigation devices” – *i.e.*, interactive communications equipment and other equipment – include both hardware and software technologies.<sup>68</sup> Certain functions can be performed interchangeably by either hardware, software, or a combination of both. Congress recognized this in the STELAR, which called for a study of downloadable software approaches to security issues previously performed in hardware.<sup>69</sup> To fully and effectively implement Section 629 as Congress intended, we propose to interpret these terms to cover both the hardware and software aspects of navigation equipment.<sup>70</sup> This is consistent with our interpretation of other sections of the Act that use the term

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<sup>65</sup> We believe that when Congress adopted Section 629, it intended the term to include software because set-top boxes have run software since before 1996. *See* Murali Nemani, *A Brief History of Set-Top Box Innovation*, Cisco, Mar. 23, 2010, [http://blogs.cisco.com/sp/a\\_brief\\_history\\_of\\_set-top\\_box\\_innovation](http://blogs.cisco.com/sp/a_brief_history_of_set-top_box_innovation) (noting that even before the leap to digital set-top boxes in the mid-1990s, addressable analog set-top boxes “contained enough memory and graphics resources to accept downloaded features, like an on-screen display, volume control, virtual text channels, a sleep timer, parental locks, reminder messages, multi-lingual displays”).

<sup>66</sup> This is consistent with the Commission’s prior interpretation of the term “navigation devices.” *See Accessibility of User Interfaces, and Video Programming Guides and Menus; Accessible Emergency Information, and Apparatus Requirements for Emergency Information and Video Description: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, MB Docket Nos. 12-108, 12-107, Report and Order and Further Notice of Proposed Rulemaking, 28 FCC Rcd 17330, 17345-46, ¶ 23 (2013) (“*CVAA User Interfaces R&O*”) (“Third-party devices with MVPD applications that are installed by the device manufacturer are also navigation devices because the MVPD application performs conditional access functions in a software-based manner that allows consumers to access multichannel video programming.”).

<sup>67</sup> *See* S. Rep. 104-230, at 181 (1996) (Conf. Rep.) (explaining that “one purpose” of Section 629 “is to help ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator” and that in implementing Section 629 “the Commission should take cognizance of the current state of the marketplace and consider the results of private standards setting activities”). *See also* H.R. Rep. No. 104-204, at 112 (1995) (indicating an intent on the part of Congress that Commission rules will assure consumers “the availability of navigation devices and other customer premises equipment from a variety of sources” and that “[t]hese devices will connect consumers to the network of communications and entertainment services” that will be provided by MVPDs). The legislative history further cautions the Commission “to avoid actions which could have the effect of freezing or chilling the development of new technologies and services.” *See* S. Rep. 104-230, at 181 (1996) (Conf. Rep.).

<sup>68</sup> As we have previously observed, Congress recognized the rapidly evolving nature of MVPD and consumer electronics technology and intended that the term “navigation devices” be interpreted broadly enough to encompass changing technology. *See CVAA User Interfaces R&O*, 28 FCC Rcd at 17347, ¶ 26.

<sup>69</sup> Pub. L. No. 113-200, § 106, 128 Stat. 2059, 2063-4 (2014).

<sup>70</sup> Our proposed interpretation encompasses current technology by recognizing the different types of equipment that consumers use to access multichannel video programming and other services offered over multichannel video programming systems, whether it is an MVPD-provided interface on an MVPD-supplied set-top box or an application offered by a competitor on a third-party device such as a tablet or smart TV. We believe that Congress intended consumers to be able to access MVPD programming over a multiplicity of competing technologies.



“equipment,” which we have interpreted to include both hardware and software.<sup>71</sup> The Commission derived its definition of the term “navigation devices” in our current rules<sup>72</sup> from the text of Section 629, and we propose to interpret that term consistent with both the language and intent of the statute, as described above.

23. We interpret the phrase “manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor” in Section 629 to mean broadly “entities independent of MVPDs,” such that our rules must ensure the availability of Navigation Devices from entities that have no business relationship with any MVPD<sup>73</sup> for purposes of providing the three Information Flows that we discuss below.<sup>74</sup> We believe that this interpretation best aligns with Congressional intent, as reflected in the legislative history of the Telecommunications Act of 1996. Namely, the House Report states that the statute was intended to encourage the availability of equipment from a “variety of sources” and “various distribution sources” to assure that consumers can buy a variety of non-proprietary devices.<sup>75</sup> Moreover, we do not believe that the goals of Section 629 would be met if the commercial market consisted solely of Navigation Devices built by developers with a business-to-business relationship with an MVPD, because such an approach would not lead to Navigation Device developers being able to innovate independently of MVPDs. We seek comment on this interpretation. Does it take proper account of the fact that even some Navigation Device developers that rely on the three Information Flows to provide access to MVPD service may have other business relationships with MVPDs unrelated to the provision of navigation devices?<sup>76</sup> Are there other interpretations that can assure a competitive market as Congress intended?

24. We seek comment on this statutory analysis. Are there other sources of Commission authority to adopt the proposed rules? For example, we invite commenters to discuss the Commission’s authority under Sections 624A<sup>77</sup> and 335 of the Act<sup>78</sup> and any other relevant statutory provisions.

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<sup>71</sup> See, e.g., 47 U.S.C. § 153(52) (“the term ‘telecommunications equipment’ means equipment, other than customer premises equipment, used by a carrier to provide telecommunications services, and includes software integral to such equipment (including upgrades)”).

<sup>72</sup> 47 C.F.R. § 76.1200(c) (defining “navigation devices” to mean “[d]evices such as converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems”).

<sup>73</sup> For example, Time Warner Cable provides free Roku devices to its subscribers, Comcast makes on-demand programming available on certain video game consoles and Samsung Smart TVs. Jacob Siegal, *TWC is trialing a plan that lets customers ditch their cable boxes but keep cable*, BGR, Nov. 10, 2015 (“If you qualify for the trial, TWC will give you a Roku 3 Streaming Player for free for a limited time and directions for how to set it up once it arrives.”); Xfinity TV for XBOX 360, <http://www.xbox.com/en-US/entertainment/xbox-360/live-apps/xfinity>; Press Release, Comcast, Comcast Partners with Samsung to Bring Streaming 4k Ultra HD Content to the Television, <http://corporate.comcast.com/news-information/news-feed/comcast-partners-with-samsung-to-bring-streaming-4k-ultra-hd-content-to-the-television>.

<sup>74</sup> See *infra* ¶¶ 35-41.

<sup>75</sup> H.R. Rep. No. 104-204, at 112 (1995), 1996 U.S.C.C.A.N. 10, 80. See also H.R. Rep. No. 104-458, at 181 (1996) (Conf. Rep.), reprinted in 1996 U.S.C.C.A.N. 124, 194 (“One purpose of this section is to help ensure that consumers are not forced to purchase or lease a *specific, proprietary* converter box, interactive device or other equipment from the cable system or network operator.”) (emphasis added).

<sup>76</sup> See, e.g., Mike Shields, *NBCU Reaches Deal to Sell Ads on YouTube Videos, Including ‘Tonight Show’ Clips*, WALL STREET JOURNAL, Sept. 30, 2015, <http://www.wsj.com/articles/nbcu-reaches-deal-to-sell-ads-on-youtube-videos-including-tonight-show-clips-1443635448> (reporting that Comcast’s NBCU and Google agreed on terms for ad sales on Google’s YouTube site).

<sup>77</sup> 47 U.S.C. § 544a. Whereas Section 629 applies to all MVPDs, the D.C. Circuit has stated that “§ 624A’s reach is limited by its plain language to cable systems.” See *Echo Star*, 704 F.3d at 999. Although the D.C. Circuit observed that Section 624A “[referred] to ‘video cassette recorders,’ now a largely antiquated technology,” it did not decide

(continued....)

Alternatively, should we modify our definition of “navigation devices” to treat software on the device (such as an application) that consumers use to access multichannel video programming and other MVPD services as a “navigation device,” separate and apart from the hardware on which it is running? For example, we seek comment on whether we should add a sentence to our definition of “navigation devices” that states, “This term includes software *or* hardware performing the functions traditionally performed in hardware navigation devices.” Would such a modification be consistent with our statutory directive under Section 629 to “adopt regulations to assure the commercial availability ... of converter boxes, interactive communications equipment, and other equipment” used by consumers to access multichannel video programming and other services offered over MVPD systems? What implications would modification of our definition of “navigation devices” in this manner have on our current navigation devices rules? Would this definitional change impact Commission rules in other contexts? If so, commenters should identify the specific rule, how the definitional change would impact the rule, and whether further rule changes would be necessary to reflect the rule modification adopted in this proceeding. For example, would such a modification alter the accessibility obligations of device manufacturers and software developers and, if so, in what manner?<sup>79</sup>

#### D. Proposals

25. As discussed above, we do not believe that the current marketplace provides the “commercial availability” of competitive navigation devices by manufacturers, retailers, and other vendors not affiliated with any MVPD that can access multichannel video programming within the meaning of Section 629.<sup>80</sup> Given our experience to date, we believe that Section 629 cannot be satisfied—that is, we cannot assure a commercial market for devices that can access multichannel video programming—unless companies unaffiliated with an MVPD are able to offer innovative user interfaces and functionality to consumers wishing to access that multichannel video programming. This interpretation is in line with our current rules, which led to the creativity and consumer benefits of the CableCARD regime.<sup>81</sup> We also believe that the goals of Section 629 will not be met absent Commission action, given MVPDs’ incentive to limit competition. As we begin to craft rules that will meet our 629 obligations, there are seven objectives that seem paramount to our effort.

26. First, consumers should be able to choose how they access the multichannel video programming to which they subscribe (*e.g.*, through the MVPD-provided user interface on an MVPD-provided set-top box or app, through a set-top box offered by an unaffiliated vendor, or through an

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the question of that provision’s continued applicability to new technologies. *Id.* at 999, n.4. We note that Section 624A(d) authorizes the Commission to apply that provision to successor technologies. *See* 47 U.S.C. § 544a(d) (directing the Commission to modify its regulations “to reflect improvements and changes in cable systems, television receivers, video cassette recorders, and similar technology”).

<sup>78</sup> 47 U.S.C. § 335(a) (authorizing the Commission to “impose on providers of direct broadcast satellite service, public interest or other requirements for providing video programming”).

<sup>79</sup> *See CVAA User Interfaces R&O*, 28 FCC Rcd at 17344-45, ¶23 (in the context of determining different categories of CVAA obligations, the Commission interpreted the term “navigation devices” as encompassing only devices that support conditional access to control consumer access to programming and services”). *See also id.* at 17344, ¶ 21 (explaining that a television set which supports “conditional access” (*e.g.*, contains a CableCARD) is a “navigation device,” whereas a television without a CableCARD or other form of conditional access and therefore cannot access encrypted cable channels without an intermediary device (*e.g.*, a set-top box) does not fall with that definition).

<sup>80</sup> *See supra* Section III.B.

<sup>81</sup> The creativity and consumer benefits that TiVo introduced, for example, led former Commission Chairman Michael Powell to declare it “God’s machine.” David Bloom & Pamela McClintock, *Powell Touting TiVo*, VARIETY, Jan. 12, 2003, <http://variety.com/2003/scene/markets-festivals/powell-touting-tivo-1117878586/> (“TiVo is god in my household. I can’t wait to walk in the house each day to see what it’s recorded for me,” Powell said Friday during a Q&A session with Consumer Electronics Assn. prexy-CEO Michael Shapiro.”).

application or search interface offered by an unaffiliated vendor on a device such as a tablet or smart TV). We propose a rule to define these “Navigable Services” as an MVPD’s multichannel video programming (including both linear and on-demand programming), every format and resolution of that programming that the MVPD sends to its own devices and applications,<sup>82</sup> and Emergency Alert System (EAS) messages,<sup>83</sup> because we tentatively conclude that these elements are what comprise “multichannel video programming” as that term appears in Section 629.<sup>84</sup> We seek comment on this definition and whether there is information beyond the multichannel video programming and EAS messages that are essential parts of “multichannel video programming and other services offered over multichannel video programming systems” that a navigation system needs to access and that we should include in the definition.<sup>85</sup> For example, if an MVPD offers a “cloud recording” service that allows consumers to record programs and store them remotely, should that cloud recording service be a “Navigable Service”?

27. Second, we recognize that the few successful CableCARD devices all have something in common: they provide user interfaces that compete with the user interfaces MVPD-provided set-top boxes render.<sup>86</sup> Therefore, MVPDs and unaffiliated vendors must be able to differentiate themselves in

<sup>82</sup> Formats and resolutions are not static, but examples include standard definition, high definition, and 4K/Ultrahigh-definition. Rob Pegoraro, *The State of Ultrahigh-Definition Television: Will This Be the Year It Makes Sense to Upgrade?*, YAHOO!, Jan. 8, 2016, <https://www.yahoo.com/tech/the-state-of-ultra-high-definition-television-224135680.html>. We seek comment on whether we need to define these terms, and if so, how we should define them.

<sup>83</sup> See Appendix A (proposing to add 47 C.F.R. § 76.1200(e)). See also 47 C.F.R. Part 11.

<sup>84</sup> 47 U.S.C. § 549(a). See also 47 U.S.C. §§ 544(g), 606.

<sup>85</sup> 47 U.S.C. § 549(a). The DSTAC Report acknowledged that the committee was divided regarding how to define “MVPD service” for purposes of delineating what features and functions that the MVPD offers must be made available on a third-party device:

Some members of the DSTAC consider MVPD service to include all the various functionalities and features that the MVPD provides to its customers, including the interactive features and the User Interface which they use in their retail offerings and consider protected by copyright, licensing, and other requirements determining how their service is distributed and presented; retaining these elements is also part of respecting the contractual and copyright terms between content providers and distributors for the commercial distribution of programming.

Other members consider “MVPD Service” to be primarily video transport, and consider the inclusion of the MVPD’s User Interface and other features to prevent retail devices from innovating and differentiating their products, which they believe is essential for success in the marketplace. They also point out the current cable specific CableCARD system allows consumer electronics (CE) manufacturers to build such products today and are in use by consumers.

DSTAC Report at 1-2. We seek comment on how to define “MVPD service.”

<sup>86</sup> See, e.g., Joshua Goldman, *TiVo Bolt Review: A smaller, faster media box to meet your TV watching needs—at home or away*, CNET, Oct. 30, 2015, <http://www.cnet.com/products/tivo-bolt/> (“These days, digital video recorders aren’t anything special -- cable and satellite companies rent them to their customers for a few bucks a month, and said customers can time-shift their favorite programs to watch at their convenience. So, why invest in a TiVo? Basically, it’s the same reason you’d pay extra for a Mac versus a Windows PC: for starters, that means a best-in-class user interface and ease of use.”); Caleb Denison, *Cable or Netflix? Samsung’s Smart Media Player Stops Asking You to Choose*, DIGITAL TRENDS, Oct. 17, 2013, <http://www.digitaltrends.com/home-theater/samsungs-smart-media-player-streams-netflix-replaces-your-cable-box/> (“Because the player will work based off of Samsung’s Smart TV interface, we can expect it will offer Samsung’s S-Recommendation engine, which makes content recommendations based on users’ viewing habits.”); *Third Party applications for WinTV-DCR-3250*, HAUPPAUGE, [http://www.hauppage.com/site/products/data\\_dcr3250.html](http://www.hauppage.com/site/products/data_dcr3250.html) (last visited Dec. 30, 2015) (providing a list of user-interface programs that are compatible with Hauppauge’s CableCARD device). See also Brent Lang,

(continued....)

order to effectively compete based on the user interface and complementary features they offer users (e.g., integrated search across MVPD content and over-the-top content, suggested content, integration with home entertainment systems, caller ID, and future innovations).<sup>87</sup>

28. Third, unaffiliated vendors must be able to build competitive navigation devices, including applications, without first obtaining approval from MVPDs or organizations they control. Senators Markey and Blumenthal found that MVPDs take in approximately \$19.5 billion per year in set-top box lease fees, so MVPDs have a strong financial incentive to use an approval process to prevent development of a competitive commercial market and continue to require almost all of their subscribers to lease set-top boxes.<sup>88</sup>

29. Fourth, unaffiliated vendors must implement content protection to ensure that the security of MVPD services is not jeopardized, and must respect licensing terms regarding copyright, entitlement, and robustness. This will ensure parity between MVPD-provided and competitive navigation devices.

30. Fifth, our rules should be technology neutral, permitting both software (e.g., cloud delivery) and hardware solutions, and not impede innovation. This will ensure that consumers will not be forced to use outdated, power-hungry hardware to receive multichannel video programming services.

31. Sixth, our rules should allow consumers to use the same device with different MVPDs throughout the country. Device portability will encourage MVPD competition because consumers will be able to change their video service providers without purchasing new equipment.

32. Finally, our rules should not prescribe a particular solution that may impede the MVPD industry's technological progress. We seek comment on these seven objectives, their appropriateness, and in particular their relative importance.

33. Based on our tentative conclusion that the market for navigation devices is not competitive, with the above objectives in mind, we propose rules that will assure a competitive market for devices that can access multichannel video programming without jeopardizing security of the programming or an MVPD's ability to prevent theft of service, as Section 629 requires.<sup>89</sup> Like the authors of the DSTAC Report, we split our discussion of these proposals into sections regarding the non-security and security elements of multichannel video programming services.

34. The rules we propose are intended to address a fundamental feature of the current market for multichannel video programming services, namely the "wide diversity in delivery networks, conditional access systems, bi-directional communication paths, and other technology choices across MVPDs (and even within MVPDs of a similar type)."<sup>90</sup> In 1998, the Commission concluded that it could address this technological diversity in one of two ways, either via complex devices, or via translation of

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*Time Warner CEO Jeff Bewkes: 'Wonder Woman' Will Bring Females to Comic Book Movies*, VARIETY, Dec. 8, 2015, <http://variety.com/2015/film/news/jeff-bewkes-wonder-woman-comic-book-movies-1201656362/> (Reporting that Time Warner, Inc. Chairman and CEO Jeffrey Bewkes noted "many cable companies have issues with their user interfaces that hinder[] on-demand viewing. They are cumbersome to use and should be streamlined, he maintained."). *But see* NCTA Comments at 37-38.

<sup>87</sup> The legislative history suggests that Congress contemplated this competition when it adopted Section 629: "Competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices and higher quality." H.R. Rep. No. 104-204, at 112 (1995).

<sup>88</sup> *Markey/Blumenthal Release, supra* n.44. *But see* NCTA Reply at 5 ("Cable operators do not own their set-top box vendors. They are paying for, not profiteering on, set-top boxes."). We invite MVPDs to provide audited financial statements to support or contradict these statements.

<sup>89</sup> 47 U.S.C. §§ 549(a), (b).

<sup>90</sup> DSTAC Report at 2.

those diverse network technologies into a standardized format.<sup>91</sup> This analysis stands seventeen years after it was adopted. We do not wish to impose a single, rigid, government-imposed technical standard on the parties, but we understand that it would be impossible to build widely used equipment without some standardization. Therefore, as explained further below, we propose to allow MVPDs to choose the specific standards they wish to use to make their services available via competitive navigation devices or solutions, so long as those standards are in a published, transparent format that conforms to specifications set by an open standards body. We also tentatively conclude that we should require MVPDs to comply with the rules we propose two years after adoption. We seek comment on this tentative conclusion.

### 1. Non-Security Elements: Service Discovery, Entitlement, and Content Delivery

35. We propose an approach to non-security elements that balances the interests expressed by the members of the DSTAC and commenters who filed in response to the DSTAC Report. Under this approach, we will require MVPDs to provide Service Discovery,<sup>92</sup> Entitlement,<sup>93</sup> and Content Delivery<sup>94</sup> information (the “Information Flows”) in standardized formats that the MVPD chooses. Our proposal is based on the tentative conclusion that the Information Flows are necessary to ensure that developers that are not affiliated with an MVPD can develop navigation devices, including software, that can access multichannel video programming in a way that will assure a commercial market.<sup>95</sup> We believe that this proposed requirement is the least burdensome way to assure commercial availability of navigation devices (the specifications necessary to provide these Information Flows appear to exist today<sup>96</sup>) and is consistent with our prior rules. Moreover, this approach is technology neutral—the Commission would not dictate the MVPD’s decision whether to rely on hardware or software to make the Information Flows available. Therefore, the proposed approach would provide each MVPD with flexibility to choose the standard that best aligns with its system architecture. It would also give unaffiliated entities access to the Information Flows in a published, transparent, and standardized format so that those entities would understand what information is available to them. We believe that this is the best approach because the proposal does not require the Commission to prescribe or even approve the standards so long as the Information Flows are available. A benefit of this approach is that affected industries will be able to evolve as technology improves.<sup>97</sup>

36. Under our proposed rule, we would require each MVPD to provide Service Discovery Data, Entitlement Data, and Content Delivery Data for its “Navigable Services”<sup>98</sup> in published, transparent formats that conform to specifications set by open standards bodies.<sup>99</sup> Under this proposal, we

<sup>91</sup> *First Plug and Play Report and Order*, 13 FCC Rcd at 14824-26, ¶¶ 127-132 (footnotes omitted).

<sup>92</sup> *See infra* ¶ 38.

<sup>93</sup> *See infra* ¶ 39.

<sup>94</sup> *See infra* ¶ 40.

<sup>95</sup> As discussed above, we believe that competition in the user experience is an essential part of assuring a commercial market. *Supra* ¶¶ 25-27. *See also* TiVo Comments at 6-7 (“Section 629 addresses the competitive availability of *navigation device[s]*, not viewing devices.”); CCIA Comments at 5-6; Consumers Union Comments at 1-2; Consumer Video Choice Coalition Comments at 2; Public Knowledge Comments at 10-11; TiVo Reply at 1; Writers Guild of America, West Comments at 5-6. *But see* AT&T Comments at 18-19; ACA Reply at 2-6, 10-16; ARRIS Comments at 6-8; Comcast Comments at 14-16.

<sup>96</sup> DSTAC Report at 251-56; Letter from John Bergmayer, Senior Staff Attorney, Public Knowledge, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at attachment (Oct. 20, 2015).

<sup>97</sup> Comcast Comments at 12-14 (listing specific Commission-mandated standards that did not have broad market support).

<sup>98</sup> We seek comment on our proposed definition of the term “Navigable Services.” *See supra* ¶ 26.

<sup>99</sup> Appendix A (proposing to add 47 C.F.R. § 76.1211(a)).



would require MVPDs to provide these Information Flows in a manner that does not restrict competitive user interfaces and features. We seek comment below on this proposed rule and on our proposed definitions of the terms (1) Service Discovery Data, (2) Entitlement Data, (3) Content Delivery Data, and (4) Open Standards Body.

37. We base these proposed rules on three main points from the DSTAC Report related to non-security elements that we find compelling. First, we agree with the Competitive Navigation advocates that developers need the Information Flows in a standardized format to encourage development of competitive, technology-neutral solutions for competitive navigation.<sup>100</sup> We also agree with the Proprietary Applications advocates, however, that providing MVPDs with flexibility, where it will not impair the competitive market, will encourage and support innovation.<sup>101</sup> Significantly, consistent with a major point of agreement in the DSTAC Report,<sup>102</sup> these proposed rules do not require MVPDs to “commonly rely” on the Information Flows for their own navigation devices, so they will not need to replace the devices that they currently provide their subscribers. We seek comment below on our proposed definitions of these three Information Flows. In particular, we seek comment on how detailed our definitions should be; that is, will standards-setting bodies define the details of what information should be in the Information Flows, sufficient to assure a commercial market for navigation systems and meet our regulatory goals? Should we define this with the same amount of detail proposed in the DSTAC Report?<sup>103</sup> Are the definitions we propose appropriate for all MVPDs, or does the diversity in network architectures justify different definitions for traditional cable, satellite, and IP-based services?

38. We propose to define Service Discovery Data as information about available Navigable Services and any instructions necessary to request a Navigable Service.<sup>104</sup> We tentatively conclude that the Service Discovery Data must include, at a minimum, channel information (if any), program title, rating/parental control information, program start and stop times (or program length, for on-demand programming), and an “Entertainment Identifier Register ID”<sup>105</sup> so that competitive navigation devices can accurately convey to consumers the programming that is available.<sup>106</sup> We seek comment on whether this is the minimum amount of information that would allow a competitive navigation device developer to build a competitive system. Should this data also include information about the resolution of the program, PSIP data,<sup>107</sup> and whether the program has accessibility features such as closed captions and video description? Should this data include the program description information that the MVPD sends to

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<sup>100</sup> DSTAC Report at 247-48. *See also* TiVo Comments at 6-7 (“Section 629 addresses the competitive availability of *navigation* device[s], not viewing devices.”); CCIA Comments at 5-6; Consumers Union Comments at 1-2; Consumer Video Choice Coalition Comments at 2; Public Knowledge Comments at 10-11; TiVo Reply at 1; Writers Guild of America, West Comments at 5-6. *But see* AT&T Comments at 18-19; ACA Reply at 2-6, 10-16; ARRIS Comments at 6-8; Comcast Comments at 14-16;

<sup>101</sup> DSTAC Report at 262-65.

<sup>102</sup> *Id.* at 2.

<sup>103</sup> DSTAC Report at 251-56.

<sup>104</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(f)).

<sup>105</sup> *See* Entertainment Identifier Registry, <http://eidr.org/> (last visited Jan. 20, 2016) (“EIDR is a universal unique identifier system for movie and television assets. From top level titles, edits, and DVDs, to encodings, clips and mash-ups, EIDR provides global unique identifiers for the entire range of audiovisual object types that are relevant to entertainment commerce.”).

<sup>106</sup> The proposal above is consistent with the service discovery data recommended in the DSTAC Report’s Competitive Navigation approach. DSTAC Report at 253.

<sup>107</sup> *See Second Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television*, 19 FCC Rcd 18279, 18343-49, ¶¶ 149-160 (2004) (“PSIP is data that is transmitted along with a station’s DTV signal that tells DTV receivers information about the station and what is being broadcast. . . . The Commission has recognized the utility that the ATSC PSIP Standard offers for both broadcasters and consumers.”).

its own navigation devices? For example, is it necessary for the data to include descriptive information about the advertising embedded within the program? Our tentative view is that this level of detail is not necessary. We also tentatively believe that Service Discovery Data should not include the detailed program guide information that unaffiliated Navigation Device developers must purchase or create today under the CableCARD regime. Instead, we believe that unaffiliated Navigation Device developers should have to continue to purchase or create this information. Should Service Discovery Data include capabilities of the MVPD's Navigable Services? For instance, the DSTAC Report refers to "stream management" as important information that conveys the number of video streams that a particular system can handle based on system bandwidth, tuner resources, or fraud prevention.<sup>108</sup> One approach is that the MVPD could provide unaffiliated devices with information about the maximum number of simultaneous video streams that can be watched or recorded via the Service Discovery Data flow. We seek comment on this approach.

39. We propose to define Entitlement Data as information about (1) which Navigable Services a subscriber has the rights to access and (2) the rights the subscriber has to use those Navigable Services.<sup>109</sup> This reflects our assumption that Entitlement Data will include, at a minimum, (1) copy control information<sup>110</sup> and (2) whether the content may be passed through outputs<sup>111</sup>, and if so, any information pertaining to passing through outputs such as further content protection and resolution, (3) information about rights to stream the content out-of-home, (4) the resolutions that are available on various devices, and (5) recording expiration date information, if any. What additional rights information should be included in Entitlement Data? We also propose to require that this data reflect identical rights that a consumer has on Navigation Devices that the MVPD sells or leases to its subscribers.<sup>112</sup> Consumers must be able to receive and use all of content that they pay for no matter the device or application they choose, so long as that device or application protects content sufficiently. We seek comment on whether our proposed definition is flexible enough to adequately address future business models. Will consumers' rights to "access" content vary from their rights to "use" the content? For example, what if a consumer subscribes to a 4K feed of a particular channel, but the device only has content protection that is approved by the content owner to protect the high-definition feed?<sup>113</sup> Will our

<sup>108</sup> DSTAC Report at 184-85.

<sup>109</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(g)).

<sup>110</sup> The Commission previously summarized copy control information as information about "what end users may do with content legally acquired for a limited use." *Second Plug and Play Order*, 18 FCC Rcd at 20907, ¶ 51. The DSTAC Report states that it is information that "indicates if copies of the content can be made, plus any restrictions on those copies such as how many copies can be made." DSTAC Report at 61.

<sup>111</sup> The Commission has not defined the term "output," but the Media Bureau provided an explanation of the term "output" and some examples in a 2010 order: "A set-top box that a consumer uses to receive video service can have a variety of outputs, such as High-Definition Multimedia Interface, IEEE-1394, component YP<sub>B</sub>P<sub>R</sub>, S-Video, and Composite video. A consumer's television set, recording device, or stereo may have one or more inputs that can receive video from those outputs, depending on its age and model." *Motion Picture Association of America Petition for Expedited Special Relief; Petition for Waiver of the Commission's Prohibition on the Use of Selectable Output Control (47 C.F.R. § 76.1903)*, 25 FCC Rcd 4799, 4799-80, n.4 (MB 2010). That order, which granted waiver of a rule that is no longer in effect, also explained why an MVPD or content provider would want to prevent content from flowing through an output. See also DFAST License at Exhibit B, § 2.

<sup>112</sup> *Id.*

<sup>113</sup> We seek comment *infra* ¶¶ 63-69, on proposals to require parity between MVPD-provided navigation devices and competitive navigation devices with respect to Entitlement Data and Compliant Security Systems, to ensure (i) that at least one supported Compliant Security System enables access to all resolutions and formats of the multichannel video programming with the same Entitlement Data to use those services as the MVPD affords Navigation Devices that it provides to its subscribers, and (ii) that on any device on which an MVPD makes available an application to access multichannel video programming, the MVPD supports at least one Compliant

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proposed definition address that situation? How should we treat Navigable Services that can be recorded and stored remotely (*i.e.*, “cloud recording” services)? Would our requirement that Entitlement Data be identical for competitive navigation devices and MVPD-provided navigation devices ensure that a subscriber could record content on a competitive navigation device if the MVPD allows subscribers to record and store that content remotely?

40. We propose to define Content Delivery Data as data that contains the Navigable Service and any information necessary to make the Navigable Service accessible to persons with disabilities under our rules.<sup>114</sup> We seek comment on this definition. Does content delivery include services other than multichannel video programming and accessibility information? For example, the DSTAC Report stated that some MVPDs provide applications that include news headlines, weather information, sports scores, and social networking.<sup>115</sup> We tentatively conclude that such information is unnecessary to include in the definition of Content Delivery Data because that information is freely available from other sources on a variety of devices, whereas multichannel video programming is not. The provision of such applications may allow MVPDs and unaffiliated companies to distinguish themselves in a competitive market. In addition to the applications listed in the DSTAC Report, NCTA states that MVPDs offer services that allow subscribers “to switch between multiple sports games or events or camera angles, view[] video-on-demand with full interactive ‘extras,’ shopping by remote, or see[] the last channels they tuned.”<sup>116</sup> Is there anything in our proposed definition that would foreclose the possibility that a competitive navigation device could offer these services?<sup>117</sup> We seek comment on this tentative conclusion.

41. As discussed above, we propose to require MVPDs to provide the Information Flows in published, transparent formats that conform to specifications set by “Open Standards Bodies.” We seek comment on our proposed definition of Open Standards Body: A standards body (1) whose membership is open to consumer electronics, multichannel video programming distributors, content companies, application developers, and consumer interest organizations, (2) that has a fair balance of interested members, (3) that has a published set of procedures to assure due process, (4) that has a published appeals process, and (5) that strives to set consensus standards.<sup>118</sup> We seek comment on whether these are the appropriate characteristics. Are there others we should consider? We believe that there is at least one body that meets this definition but invite commenters to provide examples of such bodies. We also believe that the characteristics listed in the definition would arm the Commission with an established test to judge whether an MVPD’s method of delivering the three Information Flows is sufficient (in combination with the other elements of the proposal discussed in this item) to assure a retail market. The five characteristics that define an Open Standards Body would ensure that navigation system developers have input into the standards-setting process, give them confidence that their devices will be able to access multichannel video programming, and prevent them from needing to build a glut of “capacities to

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Security System that offers access to the same multichannel video programming with the same rights to use that multichannel video programming as the MVPD affords to its own application.

<sup>114</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(h)). As discussed above, we are proposing a rule to define “Navigable Services” as an MVPD’s video programming (including both linear and on-demand programming), every format and resolution of that programming that the MVPD sends to its own devices and applications, and EAS messages. *See supra* ¶ 26.

<sup>115</sup> DSTAC Report at 186.

<sup>116</sup> Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 1 (Jan. 21, 2016) (“*NCTA Jan. 21 ex parte*”).

<sup>117</sup> We assume that MVPDs do not make every service that they offer available on every device or application that they provide to subscribers. We invite commenters to correct this assumption if it is incorrect.

<sup>118</sup> Appendix A (proposing to add 76.1200(i)).

function with a variety of types of different systems with disparate characteristics.”<sup>119</sup> We seek comment on this proposed approach.

42. We seek comment on whether our proposal addresses the critiques of the Competitive Navigation approach that are set forth in the DSTAC Report, comments filed in response to that report, and recent *ex partes*. A consistent argument against the Competitive Navigation approach has been its emphasis on a required set of standards. The Commission has also been wary of stifling “growth, innovation, and technical developments” through regulations to implement Section 629.<sup>120</sup> We therefore seek comment on whether our proposed approach, which does not mandate specific standards, balances these critiques against the need for some standardization. Would this appropriately implement Congress’s clear direction in Section 629 to “adopt regulations to assure the commercial availability” of navigation devices “in consultation with appropriate industry standard-setting organizations”?<sup>121</sup> If not, how can we achieve that Congressional directive?

43. NCTA claims that the Competitive Navigation approach would take years of lengthy standards development to implement.<sup>122</sup> Competitive Navigation advocates, however, filed a set of specifications for Service Discovery Data, Entitlement Data, and Content Delivery Data, largely based on DLNA VidiPath, that they claim could achieve the Competitive Navigation proposal today.<sup>123</sup> They also claim that “any necessary standardization, if pursued in good faith, should take no more than a single year.”<sup>124</sup> We seek comment on these views. The Competitive Navigation advocates submitted evidence that DLNA has a toolkit of specifications available. Given this evidence, we propose to require MVPDs to comply with the rules two years after adoption. We seek comment on whether the standards-setting process, if pursued in good faith, could allow MVPDs to meet that proposed implementation deadline.<sup>125</sup> We seek specificity on what more work needs to be done for an Open Standards Body to develop standards for Service Discovery Data, Entitlement Data, and Content Delivery Data. Given the current toolkits of specifications for Service Discovery Data, Entitlement Data, and Content Delivery Data, is it possible for us to adopt a “fallback” or “safe harbor” set of specifications? If so, should they be those proposed by the Competitive Navigation advocates,<sup>126</sup> or others? We also seek comment on any other mechanisms we can adopt to ensure that MVPDs and other interested parties cooperate in prompt development of standards.

44. The DSTAC Report includes an “Implementation Analysis” prepared by opponents of the Competitive Navigation approach, arguing that it does not fully establish a method for replicating, in a competitive navigation device, all of the services that an MVPD might offer.<sup>127</sup> Our proposal’s grant of

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<sup>119</sup> *First Plug and Play Report and Order*, 13 FCC Rcd at 14824, ¶ 127.

<sup>120</sup> *Id.* at 14781, ¶ 15.

<sup>121</sup> 47 U.S.C. § 549(a).

<sup>122</sup> NCTA Reply at 32-35.

<sup>123</sup> Letter from John Bergmayer, Senior Staff Attorney, Public Knowledge, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at attachment (Oct. 20, 2015); Letter from Angie Kronenberg, Chief Advocate & General Counsel, INCOMPAS, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64 (Dec. 14, 2015). *See also* DSTAC Report at 206, 262 (“Many of the major MVPDs either support DLNA VidiPath today or plan to in the near future.”).

<sup>124</sup> Letter from Consumer Video Choice Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission, at 6 (Jan. 21, 2016) (“*CVCC Jan. 21 ex parte*”).

<sup>125</sup> *See supra* ¶ 34. *See also infra* ¶ 81 (seeking comment on whether we should consider ongoing support for the existing CableCARD standard as a safe harbor for any rules we adopt).

<sup>126</sup> *Id.*

<sup>127</sup> DSTAC Report at 279-81 (“Satellite customers would lose sports scores and statistics for satellite. U-Verse customers would lose instant channel change. Cable customers would lose StartOver and LookBack, telescoped and

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flexibility to MVPDs gives them the opportunity to seek and adopt standards in Open Standards Bodies that will allow such replication. We seek comment on this issue.

45. Some commenters argue that the proposal constitutes compelled speech, or interference with the manner of speech of MVPDs, and thus imperils the First Amendment rights of these speakers.<sup>128</sup> The Commission does not believe that the proposed rules infringe MVPDs' First Amendment rights. The proposal to require MVPDs to provide Content Delivery Data would simply require MVPDs to provide content of their own choosing to subscribers to whom they have voluntarily agreed to provide such content. The rules would not interfere in any way with the MVPD's choice of content or require MVPDs to provide such content to anyone with whom they have not voluntarily entered into a subscription agreement. Rather, the rules would simply allow the subscriber to access the programming that the MVPD has agreed to provide to it on any compliant Navigation Device. Thus, it does not seem that this aspect of the proposed rules infringes MVPDs' First Amendment rights. The proposal to require MVPDs to provide Service Discovery Data and Entitlement Data would require MVPDs to disclose accurate factual information concerning the Navigable Service and subscribers' rights to access it. Service Discovery Data is simply information about the Navigable Service, while Entitlement Data is information about the subscriber's rights to use the Navigable Service, designed to protect the service from unauthorized access. We believe that these proposed disclosure requirements would withstand scrutiny under the First Amendment. In general, government regulation of commercial speech will be found compatible with the First Amendment if it meets the criteria laid out in *Central Hudson Gas & Electric Corp. v. Public Service Commission*, 447 U.S. 557, 566 (1980): (1) there is a substantial government interest; (2) the regulation directly advances the substantial government interest; and (3) the proposed regulation is not more extensive than necessary to serve that interest. In *Zauderer v. Office of Disciplinary Counsel*, 471 U.S. 626, 651 (1985), the Supreme Court adopted a more relaxed standard to evaluate compelled disclosure of "purely factual and uncontroversial" information. Under the standard set forth in *Zauderer*, compelled disclosure of "purely factual and uncontroversial" information is permissible if "reasonably related to the State's interest in preventing deception of consumers." The District of Columbia Circuit recently held in *American Meat Institute v. U.S. Department of Agriculture*, 760 F.3d 18 (D.C. Cir. 2014) (en banc), that government interests other than correcting deception can be invoked to sustain a disclosure requirement under *Zauderer*.<sup>129</sup> Here, the proposed rules would require the disclosure of purely factual and uncontroversial information concerning the MVPD's service, which we believe would be sustained under the *Zauderer* and Circuit Court precedents because the disclosures are reasonably related to advancing the government interest in fostering competition in the market for devices used by consumers to access video programming. We have tentatively concluded that disclosure of this information is necessary to ensure that developers who are not affiliated with an MVPD can develop navigation devices that can access multichannel video programming services, so as to foster the commercial market in such devices envisioned by Congress.<sup>130</sup> This is a policy that Congress directed the Commission to advance through the adoption of rules, and we propose to fulfill that statutory obligation in a manner that does not impermissibly infringe on MVPDs' First Amendment rights. We seek comment on this analysis.

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interactive advertising. Cable program networks would lose the interactive enhancements they have built into their programming, such as shop by remote and multiple camera angles.").

<sup>128</sup> See, e.g., AT&T Comments at 16-17 ("The Device Proposal's mandated disaggregation would interfere with the manner in which MVPDs prefer to speak, and permit device manufacturers to delete or reorganize elements of MVPD expression at will. Accordingly, the Device Proposal would drastically undermine MVPDs' First Amendment rights"); Free State Foundation Comments at 3, 7-8.

<sup>129</sup> *Accord*, *N.Y. State Rest. Ass'n v. N.Y. City Bd. Of Health*, 556 F.3d 114, 133 (2<sup>nd</sup> Cir. 2009); *Pharm. Care Management Ass'n v. Rowe*, 429 F.3d 294, 310 (1<sup>st</sup> Cir. 2005).

<sup>130</sup> See *supra* ¶ 35.



46. Finally, some commenters argue that the Competitive Navigation approach would require MVPDs to deploy “a New Operator-Supplied Box” to their subscribers.<sup>131</sup> Other commenters disagree with this assertion, and state that the solution could be implemented in the cloud at the MVPD’s discretion, thereby avoiding the need for new or additional equipment.<sup>132</sup> We believe that our proposal does not require most MVPDs to develop or deploy new equipment, nor would it require subscribers to obtain additional or new equipment. In fact, our proposal may make it easier for MVPDs to offer cloud-based services because it gives each MVPD the flexibility to choose the standards that best achieve its goals.<sup>133</sup> We seek comment on this belief.<sup>134</sup> Would our proposal necessitate any changes to the MVPD’s network, or would it give the MVPD the discretion to decide whether to modify its system architecture, as we intend?

47. *Proprietary Applications.* The DSTAC’s Proprietary Applications approach proposed six different methods to deliver MVPD services that would require consumers to use the MVPD’s proprietary user interface.<sup>135</sup> As discussed above, we have doubts that such an approach could assure a commercial market for navigation devices as Section 629 requires.<sup>136</sup> However, we seek comment on the DSTAC’s Proprietary Applications approach and whether the Proprietary Applications approach could satisfy Section 629.

48. We also seek comment on whether our proposed rules could achieve the benefits that the DSTAC Report’s Proprietary Applications approach endeavors to achieve. One of the purported benefits of the Proprietary Applications approach is that it would provide MVPDs “diversity and flexibility.”<sup>137</sup> Our proposal attempts to give MVPDs a diversity of choices and flexibility in making their Navigable Services available through competitive navigation devices, by allowing them to choose from any standard to offer the Information Flows, so long as the Information Flows are provided in a published, transparent format developed by Open Standards Bodies. Does this provide flexibility to MVPDs, while still sufficiently limiting the universe of standards such that a device could be built for a nationwide market? We seek comment on how much it would cost to build a single device that is compatible with all of the approaches listed by the Proprietary Applications advocates in the DSTAC Report. If a device were compatible with all of these Proprietary Applications approaches, would it be compatible with and able to receive all multichannel video programming services? How would this square with our statutory mandates under Sections 624A (with respect to cable operators) and 629 of the Act?<sup>138</sup>

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<sup>131</sup> See, e.g., Letter from Neal M. Goldberg, Vice President and General Counsel, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at 1-2 (Dec. 14, 2015); Letter from Motion Picture Association of America (MPAA) et al., to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at attachment (Nov. 5, 2015) (“Since the new proposal can’t work from the cloud, its new protocols would require MVPDs to provide a government-designed intermediary box in order to make any new retail device work.”).

<sup>132</sup> See, e.g., Letter from Consumer Video Choice Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at 1-2 (Dec. 18, 2015); CCIA Reply at 7.

<sup>133</sup> See *supra* ¶¶ 36-37, 58-62.

<sup>134</sup> In Section III.D.3 below, we seek comment on a proposed rule that would require MVPDs that offer proprietary applications that do not require MVPD-provided equipment in consumers’ homes to offer the three Information Flows to competitive systems without the need for MVPD-provided equipment in consumers’ homes.

<sup>135</sup> The Proprietary Applications advocates proposed allowing MVPDs to choose among one or more of (i) Device Specific Applications, (ii) HTML5 Web Applications, (iii) DLNA VidiPath, (iv) RVU, (v) DISH Virtual Joey, and (vi) Sling Media Technology Clients. DSTAC Report at 4-5. See also DSTAC Report at 263.

<sup>136</sup> *Supra* ¶¶ 12, 25-27.

<sup>137</sup> DSTAC Report at 263-65.

<sup>138</sup> 47 U.S.C. §§ 544a, 549(a).

49. Section 629 directs us to adopt regulations to assure a market for devices “from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.”<sup>139</sup> If device compatibility relies on MVPDs developing “device specific apps,” how could we assure entities that are not affiliated with the MVPD that their devices will be able to access multichannel video programming services?<sup>140</sup> How would device manufacturers and consumers ensure that support for the application is not withdrawn by the MVPD without consultation with the device manufacturer and consumers?<sup>141</sup> Do proprietary applications impose costs or certification processes that could, if left unchecked, thwart the mandates of Section 629? As an alternative to our proposal, could and should we require MVPDs to develop applications within a specific timeframe for each device manufacturer that requests such an application, and to support that application indefinitely? Section 629 also directs the Commission to adopt regulations “in consultation with appropriate industry standard-setting organizations.”<sup>142</sup> Does this suggest that the Proprietary Applications approach proposed in the DSTAC Report, which is not entirely standards-based, is not what Congress had in mind?<sup>143</sup> Are applications, as they have been deployed, ancillary to leased devices, and therefore unlikely lead to retail competition with leased devices?<sup>144</sup> Are the DLNA VidiPath, RVU, DISH Virtual Joey, and Sling Media Technology Client applications “two-device” solutions that would require consumers to attach MVPD-provided equipment to a separate piece of consumer-owned hardware?<sup>145</sup> What standards, protocols, or specifications exist that would allow MVPDs to offer those services without any MVPD-specific equipment inside a consumer’s home, or from the cloud? Could MVPDs use those standards, protocols, or specifications if we adopt our proposal? We also seek comment on any other element of the Proprietary Applications approach.

## 2. Proposal Regarding Security Elements

50. We propose that MVPDs be required to support a content protection system that is licensable on reasonable and nondiscriminatory terms, and has a “Trust Authority” that is not substantially controlled by an MVPD or by the MVPD industry.<sup>146</sup> We believe this approach best

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<sup>139</sup> 47 U.S.C. § 549(a).

<sup>140</sup> We interpret Section 629’s directive to adopt regulations to assure the commercial availability of Navigation Devices “from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor” to require us to adopt regulations to assure commercial availability of Navigation Devices from entities that do not have an existing business-to-business relationship with any MVPD with respect to the three Information Flows. *See supra* ¶ 23.

<sup>141</sup> CVCC Comments at 14, n.20; CVCC Reply at 6.

<sup>142</sup> 47 U.S.C. § 549(a).

<sup>143</sup> EchoStar Comments at 4.

<sup>144</sup> CVCC Reply at 5-6; *see also supra* ¶¶ 14, 18-19.

<sup>145</sup> *Compare* Letter from Neal M. Goldberg, Vice President and General Counsel, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 1-2 (Dec. 14, 2015) with DSTAC Report at 42, 234-35, 274 (the former explaining that “No MVPD can put every subscriber and every home in an MVPD’s system onto the same UPnP network” and that DTCP is an “in-home technology” that is “not used for distribution network security,” and the latter explaining that DLNA VidiPath, RVU, DISH Virtual Joey each rely on those technologies). *See also* DSTAC Report at 275 (indicating that Sling Media Technology Clients rely on operator-provided equipment like the Hopper DVR, ViP 722, or ViP 722k, GenieGo Device, or ARRIS MS4000).

<sup>146</sup> We use the term “Trust Authority” to refer to an entity that issues the keys that each device needs to decrypt content. These keys are the basis of all of the secure communications. *See* DSTAC Report at 99 (“For compatibility with a legacy video system that utilizes QAM transmission and distribution, CPE devices must contain SoCs (system on a chip) that embody certain embedded functions. This includes the notion of a hardware root of trust, which is a unique identifier that is placed in a ‘one time programmable’ (OTP) location on the SoC. The unique number for each STB is generated by a Trust Authority and injected into the OTP slot using a process jointly defined by the Trust Authority and the SoC Vendor.”)

balances the benefits of flexibility in content protection choices by MVPDs with the need of manufacturers to choose from a limited universe of independently controlled content protection systems. Below we describe the two alternative proposals set forth by DSTAC Working Group 3, and detail the concerns raised about each by commenters. We then discuss why we believe neither approach on its own would be sufficient to meet the Commission's goals in this proceeding, and propose a "via media" that could allow for a competitive market for innovative retail navigation devices while also affording MVPDs significant flexibility.

51. *DSTAC Proposals.* The DSTAC's Working Group 3, which focused on security, had significant points of agreement. Most fundamentally, the group agreed that downloaded security components need to remain in the control of the MVPD, but that consumer devices could not be built to simultaneously support every proprietary content protection system.<sup>147</sup> Just as in the non-security context, however, DSTAC Working Group 3 had fundamental disagreements. As summarized in the DSTAC Report, Working Group 3 proposed two alternative approaches. The first is the "HTML5" approach, sometimes described as the "DRM" approach, which "consists of MVPD/OVDs supplying media streams over HTTPS [the secure version of the protocol used to transfer data between a browser and website] and CE/CPE devices accessing and decrypting those media streams by supplying devices that implement the HTML5, EME, MSE and Web Crypto APIs [software permitting secure handling of the media streams by the devices]."<sup>148</sup> The most vocal advocates of the HTML5 approach are MVPDs and content providers. The second approach is the "Media Server,"<sup>149</sup> in which "[n]etwork security and conditional access are performed in the cloud, and the security between the cloud and retail navigation devices is a well-defined, widely used link protection mechanism such as DTCP."<sup>150</sup> The strongest advocates of the Media Server approach are consumer electronics manufacturers and consumer-facing online service providers, as well as consumer advocates. Content protection approaches similar to both proposals are in widespread use today, in other content delivery contexts.<sup>151</sup> Although there are differences in how they currently manifest, the key distinction is the way in which they allow MVPDs to control access to content – their "conditional access" systems.

52. The HTML5 approach allows an MVPD to rely on any digital rights management (DRM) system that it chooses to manage its content.<sup>152</sup> DRM, in this context, refers to a system of content protection that is based on permissions granted from a centralized server that the content provider (in this case, the MVPD) controls. DRM prevents subscribers from using the programming they are entitled to access in unauthorized ways.<sup>153</sup> If a subscriber wishes to watch a particular program, the consumer's device contacts the rights server. If the subscriber is entitled to view, record, or otherwise utilize the content, then the rights server sends a message of approval, and the device displays the content. If the subscriber is not entitled to perform that task with the content, then the rights server sends a message of

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<sup>147</sup> DSTAC Report at 80.

<sup>148</sup> *Id.* at 83.

<sup>149</sup> The DSTAC Report referred to this approach as the "Virtual Headend System" Proposal. *Id.* at 4.

<sup>150</sup> *Id.* at 92-93. Digital Transmission Content Protection, or DTCP, is a method of securing content as it moves between and within authorized devices. *See infra* ¶ 53.

<sup>151</sup> DSTAC Report at 82 (stating that the HTML5 proposal is "already being used for multiplatform commercial services such as Netflix, YouTube movies, Google Play, and Apple movies."); DTLA Comments at 2 (stating that DTCP, a system suggested in the DSTAC Report as a possible link protection for the Media Server proposal, is licensed "to more than 170 companies worldwide. It has Content Participant Agreements with three major motion picture companies," Sony, Disney, and Warner Brothers.).

<sup>152</sup> DSTAC Report at 86.

<sup>153</sup> *Abbey House Media Inc. v. Apple Inc.*, 66 F. Supp. 3d 413, 416 (S.D.N.Y. 2014) ("DRM protection essentially works as a lock, restricting the manner in which digital files can be viewed and copied.").

disapproval, and the device does not perform the task.<sup>154</sup> Traditionally, rights servers for video are not located in consumers' homes, so they do not require additional equipment in the home. Devices like smart TVs and streaming devices that are able to play programming protected by DRM must be built to conform to each DRM, however, so not every device is equipped to handle each type of DRM employed by MVPDs and other video distributors today.<sup>155</sup>

53. Under the Media Server approach, conditional access is managed before programming enters consumer devices, and the programming is protected when moving to consumer devices by a standardized link protection system. Link protection, in this context, is an encrypted connection between a source and a receiver. The system is built on the assumption that any device that has a certificate that deems it trustworthy, granted by a trusted authority at the time of manufacture and not subsequently revoked by the Trust Authority, will treat content as instructed by copy control information embedded in data that is transmitted with content.<sup>156</sup> Like DRM, link protection prevents subscribers from using the programming to which they subscribe in unauthorized ways. This technology is how a Blu-ray player sends video to a television set when physically connected—there is no additional verification step necessary, because the television has a certificate that the Blu-ray player trusts, and the television has that certificate because it was tested by the organization that controls the bestowal of certificates at manufacture to make sure that it is a secure device.<sup>157</sup> The Digital Transmission Licensing Administrator (DTLA), which was founded by Intel Corporation, Hitachi, Ltd., Panasonic Corporation, Sony Corporation, and Toshiba Corporation, is an example of an organization that hands out those certificates. All of the five major Hollywood studios have approved DTLA's link-protection technology (DTCP) for protecting content as it travels from source to receiver.<sup>158</sup> Traditionally, link protection has been designed to protect content within the home as it travels from one device (for example, a Blu-ray player) to another (for example, a TV set).

54. *Criticism of the DSTAC Proposals.* Since publication of the DSTAC Report, commenters have raised significant and compelling concerns about universally imposing either approach in the way described by its advocates. Criticism of the HTML5 approach has come from a spectrum of commenters

<sup>154</sup> The DRM Dictionary, [http://www.info-mech.com/drm\\_dictionary.html](http://www.info-mech.com/drm_dictionary.html) (“For DRM purposes, typically authentication works in a client/server context with the main security burden on the server.”).

<sup>155</sup> Brad Linder, *Disney Movies Anywhere brings movies to Amazon, Microsoft, Roku products*, <http://liliputing.com/2015/09/disney-movies-anywhere-brings-movies-to-amazon-microsoft-roku-products.html> (Sept. 8, 2015) (“For the most part if you buy a bunch of movies or TV shows from iTunes, you can't watch them on an Android device... [t]he same is true for most platforms”).

<sup>156</sup> See, e.g., DTLA, *How Does DTCP Work?*, <http://www.dtcp.com/faq.aspx#faq5> (visited Feb. 12, 2016) (“A device enabled with DTCP determines whether it is connected to other devices that implement the DTCP protection technology. Content encoded for DTCP protection is encrypted and securely transmitted only to recording and display devices that implement DTCP. The content carries information indicating whether and to what extent the content may be copied.”)

<sup>157</sup> *HTG Explains: How HDCP Breaks Your HDTV and How to Fix It*, <http://www.howtogeek.com/208917/htg-explains-how-hdcp-breaks-your-hdtv-and-how-to-fix-it/> (visited Feb. 12, 2016) (“[T]he basic premise of how HDMI HDCP works is quite simple. There is a licensing body that issues licenses for HDCP devices. Each HDCP compliant device, like your Blu-ray player or Xbox, has a license and the ability to talk to the device it is outputting the signal to over the HDMI cable. The outputting device says ‘Hey display! Are you HDCP compliant? Here is my license, show me your license!’ and in turn the display (or other HDCP compliant device) returns with ‘I am! Here is my license!’ When that process is working, it happens within a thousandth of a second and you, the consumer, never even notice.”).

<sup>158</sup> See Letter from Seth D. Greenstein, Chair, DTLA Policy Group, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Feb. 11, 2016) (“*Feb. 11 DTLA Ex Parte*”) (“DTLA and its Content Participants evaluate whether another output or recording protection technology provides technological and license protections that are at least as stringent as those for DTCP, so as to assure that each link in the chain of protection is sufficiently robust against unauthorized interception, retransmission, or copying.”).



outside the MVPD community, but has centered on concern that MVPDs could abuse their ability to fully control the conditional access system necessary to access their content. For example, the Consumer Video Choice Coalition argues that this approach would keep control in the hands of MVPDs that “have a history” of using their leverage over existing application deployment to prevent “consumers from viewing content they have paid for on the device of their choice.”<sup>159</sup> The DRM licensor could be the MVPD itself, if it chose to offer only a proprietary DRM solution, obviously posing a challenge to any device manufacturer attempting to compete.

55. Critics of the Media Server approach have emphasized the security difficulties potentially posed by a standardized link protection system. For example, some commenters have stated that the current version of DTCP, the industry standard, is inadequate to protect 4K and ultra-high definition content.<sup>160</sup> Commenters have also argued that the technical limitations on the current version of DTCP would require MVPD-provided equipment be in the home.<sup>161</sup> DTLA has filed comments responding to both of these criticisms, stating that the soon-to-be-finalized version of DTCP will be secure enough to protect the highest value content, and flexible enough to protect content delivered from the cloud.<sup>162</sup> NCTA, Adobe, and ARRIS argue that, however good the link protection system, if it were industry-wide it would be a single, static point of attack that hackers could exploit, and it would be insufficiently flexible to respond to threats as they develop.<sup>163</sup> NCTA argues that “[t]oday, device manufacturers and video services can choose from a competitive marketplace of content protection technologies to stay ahead of security threats.”<sup>164</sup> In contrast, they claim, the Media Server proposal (specifically, as described in filings after the issuance of the DSTAC Report) would “lock[] out the whole competitive market for DRM and content protection.”<sup>165</sup>

56. The record reflects significant consensus about the importance of flexibility, though clear disagreements exist about what that should look like. Some of the strongest critiques are those that could apply equally to any approach imposed on all MVPDs and competitive navigation device manufacturers. The Commission has often been wary of mandating the adoption of specific technologies, rather than functional goals. Indeed, a number of commenters specifically warn against “tech mandates” in this

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<sup>159</sup> Consumer Video Choice Coalition Comments at 13-14 (citing John Callahan, *Comcast's Xfinity App for Xbox 360 to Shut Down on September 1*, WINDOWS CENTRAL, Aug. 17, 2015, <http://www.windowscentral.com/comcasts-xfinity-app-xbox-360-shut-down-september-1>; Jeff Baumgartner, *AT&T U-verse TV to Drop Support for Xbox 360 on December 31*, MULTICHANNEL NEWS, Nov. 26, 2013, <http://www.multichannel.com/news/content/att-u-versetv-drop-support-xbox-360-december-31/356856>; Dave Smith, *Comcast Isn't Letting Customers Watch HBO On The PlayStation 4 — Even Though Every Other Service Provider Allows It*, BUSINESS INSIDER, Mar. 7, 2015, <http://www.businessinsider.com/comcast-restricts-hbo-go-on-playstation-4-2015-3>). Other commenters amplify this concern. Consumers Union argues that MVPDs “should not play the role of gatekeeper” for devices that will compete with their leased devices. Consumers Union Comments at 2-3. Nagra notes that the HTML5 proposal would not stop a DRM licensor who chose “to limit licensing, decline to license, or only offer licenses under terms which are discriminatory.” Nagra Comments at 3.

<sup>160</sup> Letter from Alison A. Minea, Director & Senior Counsel, Regulatory Affairs, DISH Network L.L.C., and Jennifer A. Manner, Vice President, Regulatory Affairs, EchoStar Satellite Operating Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, at attachment at 3 (Dec. 15, 2015); Letter from Alex Starr, General Attorney, AT&T, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 5 (Jan. 13, 2016) (“*AT&T Jan. 13 ex parte*”).

<sup>161</sup> NCTA Reply at 27-29.

<sup>162</sup> DTLA Comments at 4-6; *Feb. 11 DTLA Ex Parte* at Attachment.

<sup>163</sup> NCTA Comments at 32; Adobe Reply at 1; ARRIS Comments at 7.

<sup>164</sup> NCTA Comments at 32.

<sup>165</sup> NCTA Reply at 28; *see also* Cisco Reply at 12-13; *AT&T Jan. 13 ex parte* at 5.



space.<sup>166</sup> Although that particular phrasing is more often heard from supporters of the HTML5 proposal, the warnings reflect a broader concern about the importance of flexibility. Public Knowledge argues that the Media Server proposal is superior because it is “versatile and flexible,” compared to the HTML5 proposal, which is “too rigid technologically.”<sup>167</sup> Amazon asks us to “approach this issue from the standpoint of giving service providers technological flexibility.”<sup>168</sup> Some commenters argue that the Commission should take no action given the lack of consensus on this issue.<sup>169</sup> A stance of total inaction, however, would be an abdication of our responsibility under Section 629. Without clear guidance from the Commission on the question of content protection, a truly competitive retail market for alternatives to MVPD set-top boxes is unlikely to develop.

57. We are persuaded that the HTML5 proposal is not consistent with our goals in this proceeding. By leaving total control of security decisions to MVPDs, we would perpetuate a market in which competitors are compelled to seek permission from an MVPD in order to build devices that will work on its system.<sup>170</sup> So long as MVPDs are themselves providing and profiting from navigation equipment and services, retail devices will be available only when they benefit an MVPD, not when they benefit consumers, and a truly competitive market will remain out of reach. Section 629, however, requires us to ensure that our rules do not imperil the security of the content MVPDs are carrying. At the same time, we also are not persuaded that we should require the Media Server proposal. Mandating a single shared content protection standard for every piece of MVPD content, as the Media Server proponents suggest, would create too much potential for vulnerability. It would impose no requirement (and thus, provide no guarantee) that the developer of that single shared standard develop a new, more robust version in the event of a hack.

58. *Security Proposal.* Based on the record, we believe there is a middle path on the issue of content protection that can allow for a competitive market for innovative retail navigation devices, including software, that also affords MVPDs significant flexibility to protect their content, evolve their content protection, and respond to security concerns. Verimatrix asked the Commission not to “mandate either or even both [DSTAC proposals] as ‘the’ standard solution.”<sup>171</sup> They argued that both should be available as part of a “toolkit” of approaches available to MVPDs, a toolkit that could in fact include other approaches with the passage of time.<sup>172</sup> We agree. We therefore propose that MVPDs retain the freedom to choose the content protection systems they support to secure their programming, so long as they enable competitive Navigation Devices. In order to do so, at least one content protection system they deploy, and to which they make available the three Information Flows in their entirety, must be “Compliant” – licensable on reasonable and non-discriminatory terms, and must not be controlled by MVPDs.<sup>173</sup>

59. We believe this approach will give MVPDs the flexibility they need to avoid creating a “single point of attack” for hackers, and the freedom to set their own pace on eliminating system-specific

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<sup>166</sup> See, e.g., NTCA Reply at 4; ACA Comments at 11; Comcast Comments at 12-14.

<sup>167</sup> Public Knowledge Comments at 17, 19.

<sup>168</sup> Letter from Gerald J. Waldron, Counsel to Amazon.com Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Sept. 8, 2015).

<sup>169</sup> See, e.g., ACA Comments at 4 (“There is simply no need for further regulation to encourage competition in an already flourishing marketplace.”); Free State Foundation at 1 (The Commission should “refrain from imposing any technical mandates or other new regulations on the design of video devices.”).

<sup>170</sup> See *supra* ¶¶ 12, 28.

<sup>171</sup> Verimatrix, Inc. Comments at 3.

<sup>172</sup> These alternative approaches might include the Verimatrix system itself, or the “gateway” system proposed by Dan Haddix. Dan Haddix Comments at 1.

<sup>173</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(j)).

content security equipment in subscribers' homes, in response to the demands of the market. At the same time, we believe it will assure competitors and those considering entering the market that they can build to what is likely to be a limited number of content protection standards licensable on reasonable, non-discriminatory terms, and expect their navigation devices to work across MVPDs. They will not need to seek approval, review, or testing from the MVPDs themselves, who may have an incentive to delay or impede retail navigation devices' market entry because their leased navigation devices will remain in direct competition with the retail market for the foreseeable future. We seek comment on these assumptions.

60. Accordingly, we propose that MVPDs must support at least one "compliant" conditional access system or link protection technology, although they may use others at the same time. A Compliant Security System must be licensable on reasonable, nondiscriminatory terms, and have a Trust Authority that is not substantially controlled by any MVPD or group of MVPDs.<sup>174</sup> An MVPD must make available the three Information Flows in their entirety to devices using one of the Compliant Security Systems chosen by the MVPD.<sup>175</sup> Such a system might include, for example, future iterations of DTCP or certain DRM systems. Commenters state that these conditional access systems could be refined to permit the full range of activity contemplated by the DSTAC, and cloud-based link protection that would minimize or eliminate the need for MVPD-provided equipment on the customer's premises.<sup>176</sup> We seek comment on this proposal, including whether we need to modify our existing definition of "conditional access" in any way.<sup>177</sup>

61. We invite comment on some specific questions surrounding our proposal. As noted above, DTLA has stated that a pending DTCP update could fully satisfy the requirements of this proposal and the needs of MVPDs.<sup>178</sup> Are there other content protection systems, particularly specific DRMs currently on the market, that are likely to be able to comply with the requirements of this approach? We recognize that this approach is likely to result in the need for competitors to support more than one Compliant Security System in their navigation devices. We believe the resulting number of Compliant Security Systems would still allow Navigation Device developers to offer competitive options, but we seek comment on this understanding. Is the term "Trust Authority" and our definition – "[an] entity that issues certificates and keys used by a Navigation Device to access Navigable Services that are secured by a given Compliant Security System" – sufficiently clear? Are there more accurate or descriptive terms? Should the entity that issues certificates be the same as the one that issues keys? Should the entity that licenses the Compliant Security System also be the Trust Authority for that system? Are the proposed restrictions on the Trust Authority of a conditional access system enough to ensure its independence from MVPDs? What criteria shall we use to determine whether a Trust Authority is not "substantially controlled" by an MVPD or by the MVPD industry?

62. Are there any other critical elements necessary for this proposal to both protect MVPD content and ensure a market for competitors? Will the lack of uniformity that may result from this proposal create an undue burden on competitive entities? Could an MVPD support at least one Compliant Security System but use a non-compliant content protection system on their own Navigation Devices in a manner that favors their own Navigation Devices (*e.g.*, by selecting a Compliant Security System that is computationally burdensome for competitive devices)? Should our rules take into account

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<sup>174</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(j)).

<sup>175</sup> *But see infra* § III.D.4 (permitting limitations on access to the Navigable Services under certain circumstances).

<sup>176</sup> Digital Transmission Licensing Administrator Comments at 3-6; Digital Living Network Alliance Comments at 5.

<sup>177</sup> 47 C.F.R. § 76.1200(e) (defining conditional access as "[t]he mechanisms that provide for selective access and denial of specific services and make use of signal security that can prevent a signal from being received except by authorized users.").

<sup>178</sup> *See supra* ¶ 55, citing DTLA Comments at 4-6 and *Feb. 11 DTLA Ex Parte*.

differences in device, viewing location (in-home and out-of-home), and picture quality, or will our proposed “parity” requirement, discussed below, resolve any issues in these areas?<sup>179</sup> We also seek comment on whether we should instead adopt one of the DSTAC proposals, or another alternative, as the universal standard, and how such a standard could achieve our goals of secure openness in this proceeding. If another alternative is proposed, the proponent should provide sufficient detail to compare it to the proposals set out here. We also seek comment on any other aspect of security relevant to our goals in this proceeding that we should take under consideration.

### 3. Parity

63. We propose to require that, in implementing the security and non-security elements discussed above, MVPDs provide parity of access to content to all Navigation Devices. This will ensure that competitors have the same flexibility as MVPDs when developing and deploying devices, including applications, without restricting the ability of MVPDs to provide different subsets of content in different ways to devices in different situations. Parity will also ensure that consumers maintain full access to content they subscribe to consistent with the access prescribed in the licensing agreements between MVPDs and programmers. In order to achieve parity, we propose three requirements. First, if an MVPD makes its programming available without requiring its own equipment, such as to a tablet or smart TV application, it must make the three Information Flows available to competitive Navigation Devices without the need for MVPD-specific equipment. Second, at least one Compliant Security System chosen by the MVPD must enable access to all the programming, with all the same Entitlement Data that it carries on its equipment, and the Entitlement Data must not discriminate on the basis of the affiliation of the Navigation Device. Third, on any device on which an MVPD makes available an application to access its programming, it must support at least one Compliant Security System that offers access to the same Navigable Services with the same rights to use those Navigable Services as the MVPD affords to its own application. We discuss these proposals below.

64. The first proposed requirement is that, if an MVPD makes available an application that allows access to its programming without the technological need for additional MVPD-specific equipment, then it shall make Service Discovery Data, Entitlement Data, and Content Delivery Data available to competitive Navigation Devices without the need for MVPD-specific equipment.<sup>180</sup> For example, if an MVPD makes available an iOS or Android application that allows access to its programming, it must provide the three Information Flows to all competitive Navigation Devices without requiring the use of additional MVPD-specific equipment. The ability of competitive Navigation Devices to access content without additional equipment is a concern that has been raised repeatedly in the DSTAC proceeding.<sup>181</sup> We believe that our regulations would not assure a commercial market for Navigation Devices if unaffiliated manufacturers, retailers, and other vendors need to rely on MVPD-provided equipment to receive multichannel video programming and affiliated entities do not.<sup>182</sup> We seek comment on that assumption. We base this proposal on the presumption that if an MVPD can securely provide the information necessary for its proprietary application to access its programming without any additional equipment, then the MVPD should be able to provide that information to non-affiliated Navigation Devices similarly without additional equipment. We seek comment on this presumption. This proposal complements the next, in that while the entirety of the Information Flows must be available to all

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<sup>179</sup> See *infra* ¶¶ 63-69.

<sup>180</sup> Appendix A (proposing to add 47 C.F.R. § 76.1211(b)).

<sup>181</sup> Letter from Neal M. Goldberg, Vice President and General Counsel, NCTA, to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at 1-2 (Dec. 14, 2015); Letter from Motion Picture Association of America (MPAA) et al., to Marlene H. Dortch, Secretary, Federal Communications Commission, MB Docket No. 15-64, at attachment (Nov. 5, 2015); Letter from Rep. Yvette D. Clarke, Member of Congress, et al., to Hon. Tom Wheeler, Chairman, Federal Communications Commission (Dec. 1, 2015).

<sup>182</sup> See *supra* ¶ 23 for an explanation of how we interpret the term “affiliated” as it appears in Section 629.

competitive Navigation Devices in this scenario, the specifics of how each device may use the Navigable Services depend on the relevant Entitlement Data.

65. We recognize that DBS providers specifically will be required to have equipment of some kind in the home to deliver the three Information Flows over their one-way network, even if they also provide programming to devices connected to the Internet via other networks. How should this fact be addressed by any rule that we adopt? Are there content protection issues that are unique to DBS providers? Are there technical issues that a Navigation Device developer would need to address when developing a solution for a DBS system? We seek comment on whether we need to create a DBS exception to our proposed rule regarding proprietary applications that deliver MVPD content without the use of additional MVPD-specific equipment. We intend for this proposal to result in MVPDs serving the vast majority of non-DBS subscribers providing the Information Flows without the presence of additional MVPD-specific equipment. What technology or standards available now or in the near future will allow this “boxless” provision? What impact will this have on MVPD systems? Will this approach require any changes for current subscribers who do not choose to seek out a competitive Navigation Device? Given the importance of flexibility to the creation of a retail market, is this proposal correctly tailored? Would it be possible to ensure nondiscriminatory provision of the Information Flows, without requiring additional MVPD-specific equipment in the home, in another way? We seek comment on this proposal.

66. The second proposed requirement limits an MVPD’s ability to discriminate in providing the Navigable Services to competitive Navigation Devices. We propose that at least one Compliant Security System chosen by the MVPD enables access to all resolutions and formats of its Navigable Services with the same Entitlement Data to use those Navigable Services as the MVPD affords Navigation Devices that it leases, sells, or otherwise provides to its subscribers. In addition, we propose that Entitlement Data does not discriminate on the basis of the affiliation of the Navigation Device.<sup>183</sup> Our proposed rule requires MVPDs to make the Information Flows fully available to any Navigation Device using the Compliant Security System they have chosen to support.<sup>184</sup> Even today, however, MVPDs that provide their service to subscribers via proprietary applications on certain equipment such as mobile devices often provide only a subset of their multichannel video programming, reserving the full service for set-top boxes or other in-home viewing options.<sup>185</sup> We understand that these business decisions are made for a variety of reasons, including security and contracts with content providers. We do not believe that this practice poses a threat to the competitive market for Navigation Devices so long as it is applied in a nondiscriminatory fashion and does not interfere with the ability of competitive Navigation Device makers to develop competitive user interfaces and features. We seek comment on this view.

67. Our intent is that each MVPD make available complete access to all purchased programming, on all channels, at all resolutions, on at least one Compliant Security System that it chooses to support.<sup>186</sup> Thus, Navigation Devices accessing the three Information Flows via that Compliant Security System would have the same complete access as an MVPD’s leased or provided set-top box in the home. As noted above, though, we recognize that MVPDs may make distinctions regarding the content delivered based on the use case of a device. We understand that use cases are generally differentiated based on screen size and in- or out-of-home viewing, and strength of content protection used. We seek comment on whether there are any other meaningful distinctions among use cases. We further understand that Entitlement Data enforces these distinctions in programming today, and we

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<sup>183</sup> Appendix A (proposing to add 47 C.F.R. § 76.1211(c)).

<sup>184</sup> See *supra* ¶¶ 36, 58-60.

<sup>185</sup> See *supra* nn.47-48.

<sup>186</sup> This is of course limited to the content that the MVPD is contractually allowed to distribute (that is, we do not propose to require an MVPD to distribute a channel in 4K to a competitive application if it has absolutely no rights to distribute that channel in 4K), but the MVPD’s delivery of content must be consistent regardless of affiliation.

propose to permit MVPDs to continue to rely on Entitlement Data to draw those distinctions, so long as competitive Navigation Devices are subject to only the same restrictions as MVPD Navigation Devices. We seek comment on this proposed requirement. Does a prohibition on discrimination based on whether the Navigation Device developed is affiliated with the MVPD assure equitable treatment for similarly situated Navigation Devices? That is, will our proposed rule ensure that a competitive Navigation Device is able to access the same content with the same usage rights as a Navigation Device that the MVPD provides?

68. The final proposed parity requirement is that, on any device on which an MVPD makes available an application to access its programming, it must support at least one Compliant Security System that offers access to the same Navigable Services with the same rights to use those Navigable Services as the MVPD affords to its own application.<sup>187</sup> Our intent here is to ensure parity of access for competitive Navigation Device developers. Our proposed rules do not require MVPDs to choose Compliant Security Systems that would allow access from any device; they instead must choose one or more Compliant Security Systems to which devices can be built. It may be possible for an MVPD to abuse this flexibility, however, and choose only Compliant Security Systems that are not available on a device on which the MVPD makes available its own application to access its programming, thereby eliminating competition for access to MVPD programming via that device. The proposed rule will ensure that a competitive application can access MVPD programming on devices on which an MVPD makes available its own application, thus further ensuring a competitive market for devices including applications. We seek comment on this proposal.

69. We seek comment on whether the three parity requirements described above, in conjunction with the other features of our proposal, will achieve the goal of ensuring a competitive retail market for Navigation Devices as contemplated by Section 629. We particularly invite commenters to weigh in on the expected efficacy of these proposals, and their necessity in meeting the mandate of Section 629. We are not proposing to impose a common reliance requirement; rather, we are striving to ensure equitable provision of content to competitive Navigation Devices, to the extent necessary to achieve a competitive retail market. We seek comment on this approach.

#### **4. Licensing and Certification**

70. We believe that licensing and certification will play important roles under our proposed approach. MVPDs, MPAA, and companies that supply equipment to MVPDs argue that the Competitive Navigation approach could violate licensing agreements between MVPDs and content companies.<sup>188</sup> Based on our review of the DSTAC Report, the record, and the contract that CableLabs uses to license technology necessary to build a CableCARD device (DFAST), we have identified three major subject matters that pertain to licensing and certification. As set forth below, we seek comment on how licensing and certification can address (1) robustness and compliance, which ensure that content is protected as intended, (2) prevention of theft of service and harm to MVPD networks, which ensures that devices do not allow the theft of MVPD service or physically or electronically harm networks, and (3) important consumer protections in the Act and the Commission's rules. We then invite comment on alternative approaches we could take to address these issues.

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<sup>187</sup> Appendix A (proposing to add 47 C.F.R. § 76.1211(d)).

<sup>188</sup> See, e.g., MPAA Comments at 2, 8-11; NCTA Comments at 27-32; Cisco Reply at 5 (“[R]equiring disaggregation could force MVPDs to violate many of their legally-binding agreements with content producers, ratings agencies, and channel guide providers.”); Free State Foundation Comments at 2-3.



**a. Compliance and Robustness**

71. We seek comment on whether licensing can ensure adherence to copy control and other rights information (“compliance”)<sup>189</sup> and adequate content protection (“robustness”).<sup>190</sup> Section 629(b) states that “[t]he Commission shall not prescribe regulations under subsection (a) of this section which would jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of a provider of such services to prevent theft of service.”<sup>191</sup> We interpret this section of the Act to require that we ensure that our regulations do not impede robustness and compliance.<sup>192</sup> To achieve this statutory mandate, our regulations must ensure that Navigation Devices (1) have content protection that protects content from theft, piracy, and hacking, (2) cannot technically disrupt, impede or impair the delivery of services to an MVPD subscriber, both of which we consider to be under the umbrella of robustness (*i.e.*, that they will adhere to robustness rules), and (3) honors the limits on the rights (including copy control limits) the subscriber has to use Navigable Services communicated in the Entitlement Information Flow (*i.e.*, that they adhere to compliance rules). Through robustness and compliance terms, we seek to ensure that negotiated licensing terms regarding subscriber use of content that are imposed by content providers on MVPDs and included in Entitlement Data are honored by Navigation Devices. Accordingly, our proposal requires MVPDs to choose Compliant Security Systems<sup>193</sup> that validate only Navigation Devices that are sufficiently robust to protect content and honor the Entitlement Data that the MVPD sends to the

<sup>189</sup> The DSTAC Report states that “[g]enerally, compliance rules describe things that the platform is required to do, and things that the platform is required not to do,” and included examples such as a “device shall not directly or indirectly provide access to content except as permitted in the compliance rules,” “[a] device shall not emit the digital plaintext of encrypted audiovisual content on any interface that is not protected by a content protection system,” and “[a] device shall not knowingly or intentionally disrupt, remove or interfere with a watermark that is widely used to enforce or track copy controls or copy control circumvention.” DSTAC Report at 69.

<sup>190</sup> The DSTAC Report states that “[r]obustness requirements establish different levels of resistance to different levels of resources applied by attackers, which can range from college student with little time and money to state actors.” DSTAC Report at 15.

<sup>191</sup> 47 U.S.C. § 549(b).

<sup>192</sup> In the CableCARD regime, the DFAST license requires competitive navigation devices to be sufficiently robust and adhere to compliance rules:

No feature or functionality of a Unidirectional Digital Cable Product [that is, a retail CableCARD device], as manufactured and distributed, shall (a) technically disrupt, impede or impair the delivery of services to a cable customer; . . . (c) facilitate theft of service or otherwise interfere with reasonable actions taken by Cable Operators to prevent theft of service; (d) jeopardize the security of any services offered over the cable system; or (e) interfere with or disable the ability of a Cable Operator to communicate with or disable a [CableCARD] or to disable services being transmitted through a [CableCARD]. . . . Host Devices, including, without limitation, Host Devices with inherent or integrated copying, recording or storage capability shall not copy, record, or store Controlled Content, except as permitted in this section.

DFAST License § 2.2 & Exhibit B, § 3. A copy of the DFAST License that is the basis for the citations in this item is available in the docket for this proceeding, MB Docket No. 16-42. Advocates of the Competitive Navigation approach state that “it is reasonable to expect that a device receiving protected content would comply with obligations equivalent” to the DFAST terms. *CVCC Jan. 14 ex parte* at 2. They argue content protection systems impose robustness and entitlement requirements today, and the conditions of such licenses can be designed so that retail developers do not need to sign additional license agreements with MVPDs, content providers, or their representatives. *Id.*

<sup>193</sup> See *supra* ¶¶ 58-60 for a description and discussion of this term.

Navigation Device.<sup>194</sup> This is consistent with our understanding based on the DSTAC Report that, in other contexts, downloadable security systems usually include robustness and compliance terms as part of design audits, self-verification, or legal agreements, and that an untrustworthy actor will not be able to receive a certificate for its Navigation Devices to verify compliance.<sup>195</sup> We seek comment on this proposed approach to address compliance and robustness. We also seek comment on whether we need to define the term “robustness and compliance rules” in our proposed definition of Compliant Security System, or if that term has a common, understood meaning, as reflected in the DSTAC Report.<sup>196</sup> Should these terms include, at a minimum, what is described in the DFAST license? Are there alternatives to our proposed approach that would ensure robustness and compliance? Are there other terms from the DFAST license that we should cover in this regard? In addition to Section 629, are there other sources of statutory authority for imposing these compliance and robustness requirements, such as Sections 335(a) and 624A of the Act?<sup>197</sup> What impact, if any, does the D.C. Circuit’s decision in *EchoStar Satellite L.L.C. v. FCC*<sup>198</sup> have on the Commission’s ability to adopt compliance and robustness requirements?

**b. Protection of MVPD Networks from Harm and Theft**

72. We also believe that a device testing and certification process is important to protect MVPDs’ networks from physical or electronic harm and the potential for theft of service from devices that attach directly to the networks.<sup>199</sup> We seek comment on the extent to which unaffiliated devices will attach directly to MVPD networks.<sup>200</sup> If devices will connect directly to the MVPD network, is our existing rule 76.1203 sufficient to assure that those devices do not cause physical or electronic harm to the network?<sup>201</sup> We do not believe that each MVPD should have its own testing and certification processes.<sup>202</sup>

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<sup>194</sup> Appendix A (proposing to add 47 C.F.R. § 76.1200(k)). See DSTAC Report at 95-98 (summarizing the “Security System Validation Process”).

<sup>195</sup> DSTAC Report at 63 (“A DSS itself cannot independently verify that a device has met or supports all required robustness rules, hardware requirements or compliance requirements. These are typically done in a design audit, self-verification or other process (such as a legal agreement) to a set of Compliance Rules. The DSS and associated security servers verify, via a certificate or other highly secure mechanism, that a device reports such compliance. In typical implementations, any failure in this type of validation will deactivate the DSS and its associated device. In order to achieve this level of security, a DSS must be considered as part of a broadly defined security infrastructure which includes key management, secure manufacturing, audit, testing, standards development, etc.”). See also *CVCC Jan. 21 ex parte* at 2 (“The applications of the protective technologies and of the rules in the DFAST license have been uniform and consistent in nature. Furthermore, these requirements and rules are carried forward and implemented in any product receiving content under the ‘DTCP’ technology discussed in the DSTAC Report and in later filings. Any Commission action could reflect these expectations.”).

<sup>196</sup> *Supra* nn.189 & 190.

<sup>197</sup> 47 U.S.C. §§ 335(a), 544a. Although Section 624A of the Act refers to VCRs, we note that subsection (d) covers regulations reflecting improvements in technology. 47 U.S.C. § 544a(d).

<sup>198</sup> 704 F.3d 992 (D.C. Cir. 2013).

<sup>199</sup> 47 U.S.C. § 549(b).

<sup>200</sup> One of the major points of agreement in the DSTAC Report was that “it is unreasonable to expect that retail devices connect directly to all of the various MVPDs’ access networks; rather they should connect via an IP (Internet Protocol) connection with specified APIs/protocols.” DSTAC Report at 2 (footnote omitted).

<sup>201</sup> See 47 C.F.R. § 76.1203 (“A multichannel video programming distributor may restrict the attachment or use of navigation devices with its system in those circumstances where electronic or physical harm would be caused by the attachment or operation of such devices or such devices that assist or are intended or designed to assist in the unauthorized receipt of service. Such restrictions may be accomplished by publishing and providing to subscribers standards and descriptions of devices that may not be used with or attached to its system. Such standards shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service. In any situation where theft of service or harm occurs or is likely to occur, service may be discontinued.”).

Under the CableCARD regime, devices our rules allowed testing to be performed by a qualified test facility, which is defined as “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” CableCARD standards.<sup>203</sup> We seek comment on whether that approach protected cable networks from physical and electronic harm and from theft of service, and whether it had any effect on the commercial availability of CableCARD devices. We also seek comment on which entities have or may develop testing and certification processes. What kind of testing should be required? We note, for example, there is a seven-step certification process to ensure that DLNA-certified devices do not have defects that would harm networks.<sup>204</sup> Is this type of testing sufficient? We seek comment on this proposal and any alternative approaches, such as self-certification.

### c. Consumer Protection

73. It is essential that any rules we adopt to meet the goals of Section 629 do not undermine other important public policy goals underlying the Communications Act, which are achieved by means of requirements imposed on MVPDs. Specifically, certain commenters highlighted concerns that competitive Navigation Device developers (i) would not keep subscribers’ viewing habits private, as MVPDs are required to do,<sup>205</sup> (ii) would violate advertising limits during programming for children, and (iii) would build devices that do not display emergency alerts or closed captioning or enable parental controls as MVPDs are required to do.<sup>206</sup> We are encouraged by the fact that retail navigation devices, such as TiVos, have been deployed in the market for over a decade without allegations of a loss of consumer privacy, violations of advertising limits during programming for children, or problems with emergency alerts and accessibility.<sup>207</sup> Nonetheless, because these consumer protections are so important, we propose to require that MVPDs authenticate and provide the three Information Flows only to Navigation Devices that have been certified by the developer to meet certain public interest requirements. We tentatively conclude that this certification must state that the developer will adhere to privacy protections,<sup>208</sup> pass through EAS messages,<sup>209</sup> and adhere to children’s programming advertising limits.<sup>210</sup> This proposal<sup>211</sup> would mean that MVPDs are not required to enable the Information Flows unless they

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<sup>202</sup> See *supra* ¶¶ 12, 28.

<sup>203</sup> 47 C.F.R. § 15.123(c)(2).

<sup>204</sup> *DLNA Certification*, <http://www.dlna.org/certification/certification/> (last visited Jan. 28, 2016).

<sup>205</sup> See 47 U.S.C. §§ 551, 338(i).

<sup>206</sup> NCTA Comments at 28-30; NCTA Reply at 7; AT&T Reply at 2.

<sup>207</sup> Letter from Devendra T. Kumar, Attorney for TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, at 1-2 (Jan. 13, 2016) (“TiVo has never been bound by such agreements — even though consumers have been using TiVo devices for over a decade — without resulting in any of the parade of horrors alleged by NCTA . . . TiVo devices pass through EAS signals today. . . TiVo is subject today to state privacy laws and to enforcement by the FTC and/or state regulators for any failures to abide by its comprehensive privacy policy.”); see also *CVCC Jan. 14 ex parte* at 2-3 (explaining that EAS messaging would be handled via a standard, and that competitive navigation device developers would be subject to privacy laws).

<sup>208</sup> 47 U.S.C. §§ 551, 338(i).

<sup>209</sup> 47 C.F.R. Part 11.

<sup>210</sup> See 47 U.S.C. § 303a; 47 C.F.R. § 25.701(e); *Implementation of Section 25 of the Cable Television Consumer Protection and Competition Act of 1992, Direct Broadcast Satellite Public Interest Obligations*, Sua Sponte Reconsideration, 19 FCC Rcd 5647, 5668 (2004) (extending commercial limits rules to DBS operators); *Policies and Rules Concerning Children’s Television Programming*, Report and Order, 6 FCC Rcd 2111, 2117-18 (1991), *recon. granted in part*, 6 FCC Rcd 5093 (1991).

<sup>211</sup> Appendix A (proposing to add Section 76.1200(l)).

receive this certification, and also that they are prohibited from providing the Navigable Services to a Navigation Device that does not have such a certification. MVPDs cannot withhold the three Information Flows if they have received such certification and do not have a good faith reason to doubt its validity. This will ensure that the public policy goals underlying these requirements are met regardless of which device a consumer chooses to access multichannel video programming. We seek comment on this proposal and invite alternative proposals within our jurisdiction that would ensure that these important consumer protections remain in effect while we promote a competitive navigation market. Should the proposed certification address any other issues, including compliance with the Commission's accessibility rules<sup>212</sup> and parental controls, or should we leave these matters to the market? We also seek comment on whether the retail market will be competitive enough to make any such regulation unnecessary (that is, the competitive market will assure that the protections that consumers desire are adequately protected).

74. We seek comment on the best way to implement such a certification process. Should this be a self-certification process, or are there viable alternatives to self-certification? For example, should there be an independent entity that validates the competitor's certification? Should we develop a standardized form? Who would be responsible for maintaining a record of the certification? Could Open Standards Bodies or some other third-party entity require certification as part of their regimes and maintain those records? Alternatively, should the Commission maintain a repository of certifications? In addition, if there are lapses in compliance with any certification, what would be the appropriate enforcement mechanism?<sup>213</sup>

75. With respect to all MVPDs, we believe that Section 629 of the Act provides authority to impose these restrictions, because consumers may be dissuaded from opting for a competitive navigation solution if they are not confident that their interests will be protected to the same extent as in an MVPD-provided solution.<sup>214</sup> With respect to DBS operators, we also believe Section 335(a) – which directs the Commission to “impose, on providers of direct broadcast satellite service, public interest or other requirements for providing video programming” – grants us authority to ensure that these goals are met regardless of whether the DBS multichannel video programming is accessed by means of a DBS-provided device.<sup>215</sup> We also seek comment on whether the sources of statutory authority for imposing on MVPDs privacy requirements, advertising limits on children's programming, emergency alerting requirements, closed captioning requirements, video description requirements, parental control requirements, or other consumer protection requirements also authorize the Commission to require that MVPDs provide the three Information Flows only to Navigation Devices that have been certified by the developer to meet certain public interest requirements.<sup>216</sup> This will ensure that the new Navigation Device rules will not undercut our rules imposing those public interest requirements. We seek comment on these views and invite commenters to suggest any other sources of authority.

76. We seek comment on how MVPDs could ensure that they do not provide the Information Flows to uncertified devices. Could the MVPD use device authentication to ensure that they do not send the three Information Flows to uncertified Navigation Devices? Could the Entitlement Data direct a device not to display the Content Data unless the Navigation Device was built by a developer who is certified? Are there other methods MVPDs could use to ensure that they send the Information Flows only

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<sup>212</sup> 47 C.F.R. §§ 79.102-79.109.

<sup>213</sup> We assume, of course, that if there were a lapse that the MVPD would no longer be required to enable the Information Flows. *See infra* ¶ 75.

<sup>214</sup> 47 U.S.C. § 549(a).

<sup>215</sup> 47 U.S.C. § 335.

<sup>216</sup> *See, e.g.*, 47 U.S.C §§ 303(a) (standards for children's television programming), 303(w) (parental blocking), 544(g) (emergency information), 551 (protection of subscriber privacy), 606 (War Emergency-Powers of President), 613 (video programming accessibility); *Twenty-First Century Communications and Video Accessibility Act of 2010*, Pub. L. No. 111-260 and Pub. L. No. 111-265.

to Navigation Devices that will honor these important consumer protection obligations? Similarly, how can MVPDs ensure, as both a technical and practical matter, that the Information Flows are no longer provided if there are any lapses in a competitor's compliance with these obligations?

77. We seek comment on how this requirement will affect Navigation Device developers. We do not expect it will be difficult for developers to certify to these consumer protections. For example, such content as EAS alerts will be included in the Information Flows that MVPDs make available, and we do not expect enabling receipt of this content to be burdensome. Similarly, as to ensuring the privacy of subscriber information, given the national market for consumer technology, they must already ensure that their products and services meet the privacy standards of the strictest state regulatory regime.<sup>217</sup> Moreover, the global economy means that many developers must comply with the European Union privacy regulations,<sup>218</sup> which are much more stringent than the requirements placed on MVPDs under Sections 631 and 338 of the Communications Act.

78. Although we propose that competitive device manufacturers certify compliance with Sections 631 and 338, we seek comment on the extent to which those manufacturers that collect personally identifiable information from consumers using their devices are currently subject to state privacy laws and the scope of any such laws.<sup>219</sup> We note, for example, that California's Online Privacy Protection Act<sup>220</sup> applies to an entity that owns an online service that collects and maintains personally identifiable information from consumers residing in California who use the online service if the online service is used for commercial purposes.<sup>221</sup> Would this statute apply to competitive device manufacturers to the extent that they use the Internet to provide programming guide, scheduling, and recording information to consumers? Are there similar state privacy laws covering consumers residing in each of the other states? To what extent do state privacy laws require that manufacturers have privacy policies? MVPDs are obligated to provide privacy protections under Sections 631 and 338 of the Act.<sup>222</sup> Do state privacy laws require manufacturers to provide a comparable level of consumer protection?<sup>223</sup> For example, the privacy protections established by Sections 631 and 338 are enforceable by both the Commission and by private rights of action.<sup>224</sup> Do any state laws provide for both administrative and private rights of action and/or damages in the event of a privacy violation? TiVo asserts that it is subject to enforcement by the FTC and state regulators for any failures to abide by its comprehensive privacy

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<sup>217</sup> Letter from Devendra T. Kumar, Attorney for TiVo Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Jan. 13, 2016).

<sup>218</sup> See Protection of Personal Data, European Union, <http://ec.europa.eu/justice/data-protection/> (last visited Jan. 26, 2016) (providing an overview of the European Union's strict personal data protection requirements).

<sup>219</sup> See Letter from Robert Schwartz, Constantine Cannon LLP, Counsel to Consumer Video Choice Coalition, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 15-64, at 2-3 (filed Jan. 14, 2016) (CVCC Jan. 14, 2016 *Ex Parte* Letter); Letter from Robert Schwartz, Constantine Cannon LLP, Counsel to Hauppauge Computer Works, Inc., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 15-64, at 2 (filed Jan. 14, 2016) (Hauppauge Jan. 14, 2016 *Ex Parte* Letter); Letter from Devendra T. Kumar, Goldberg, Godles, Wiener & Wright, LLP, Counsel to TiVo, Inc., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 15-64, at 2 (filed Jan. 13, 2016) (TiVo Jan. 13, 2016 *Ex Parte* Letter) (all asserting that competitive device manufacturers are subject to state privacy laws).

<sup>220</sup> California Bus. & Prof. Code §§ 22575-79.

<sup>221</sup> *Id.* § 22577(c).

<sup>222</sup> 47 U.S.C. §§ 551, 338(i).

<sup>223</sup> See Letter from Robert Schwartz, Constantine Cannon LLP, Counsel to Consumer Video Choice Coalition, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 15-64, at 2-3 (filed Jan. 14, 2016) (CVCC Jan. 14, 2016 *Ex Parte* Letter) (asserting that "navigation device providers are also subject to state privacy obligations providing consumer protection comparable to that pertaining to MVPDs").

<sup>224</sup> See, e.g., Cox Communications, Inc., Order & Consent Decree, File No. EB-IHD-14-00017829, 2015 WL 6779864 (Enf. Bur. Nov. 5, 2015).



policy.<sup>225</sup> We note that the FTC has taken legal action under its broad Section 5 “unfair and deceptive acts” authority against companies that violate their posted consumer privacy policies.<sup>226</sup> We seek comment on whether state laws governing unfair and deceptive acts have similarly been used against companies that violate their consumer privacy policies and whether these laws are applicable to competitive device manufacturers. Furthermore, the Video Privacy Protection Act, with limited exceptions, generally prohibits companies that provide video online from disclosing the viewing history and other personally identifiable information of a consumer without the consumer’s prior written consent.<sup>227</sup> Does this statute impose any obligations on competitive device manufacturers to protect personally identifiable information collected from consumers? Are there any other state or federal laws that would help to ensure that competitive device manufacturers protect consumer privacy?

#### d. Licensing Alternatives

79. As an alternative to the licensing and certification approaches we lay out above, should we instead require industry parties to develop a standardized license and certification regime, similar to the DFAST license, which has appeared to work at balancing consumer protection issues and allowing retail Navigation Device developers to innovate?<sup>228</sup> Who would be responsible for managing that licensing system? Should our Navigation Device rules instead impose these terms by regulation, either initially or if industry parties cannot reach agreement? Does the Commission have authority to impose such terms via regulation?<sup>229</sup> Has competitive navigation under the CableCARD regime led to any license agreement violations, privacy violations, or other violations of consumer protection laws? If so, what were the specifics of those violations, and how were they resolved?

80. We do not currently have evidence that regulations are needed to address concerns raised by MVPDs and content providers that competitive navigation solutions will disrupt elements of service presentation (such as agreed-upon channel lineups and neighborhoods), replace or alter advertising, or improperly manipulate content.<sup>230</sup> We have not seen evidence of any such problems in the CableCARD

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<sup>225</sup> Letter from Devendra T. Kumar, Goldberg, Godles, Wiener & Wright, LLP, Counsel to TiVo, Inc., to Marlene H. Dortch, Secretary, FCC, MB Docket No. 15-64, at 2 (filed Jan. 13, 2016) (TiVo Jan. 13, 2016 *Ex Parte* Letter). See also Letter from Matthew M. Polka, President & CEO, American Cable Association et al., to Tom Wheeler, Chairman, Federal Communications Commission, at 1-2 (Feb. 11, 2016) (“All companies in the Internet ecosystem, including Internet service providers, have long operated under the FTC regulatory regime for protecting consumer privacy. . . . Under the FTC regime, all companies in the Internet ecosystem must ensure that their privacy and data security practices are neither deceptive nor unfair. As a result, consumers are protected and all companies that collect consumer data should be able to innovate and adapt to the inevitable changes in technology and the market for online services.”).

<sup>226</sup> 15 U.S.C. § 45; FTC, Enforcing Privacy Promises, <https://www.ftc.gov/news-events/media-resources/protecting-consumer-privacy/enforcing-privacy-promises> (visited Jan. 28, 2016).

<sup>227</sup> 18 U.S.C. § 2710.

<sup>228</sup> Cf. Letter from Consumer Video Choice Coalition to Marlene H. Dortch, Secretary, Federal Communications Commission, at 4 (asserting that a more rigid contractual regime would “override consumers’ expectations of competition and fair use, notwithstanding the requirements of Sections 76.1201 to [76.]1206 of the Commission’s rules”). But see *NCTA Jan. 21 ex parte* at 2 (alleging that the DFAST license was drafted to address one-way services only, and has not always sufficed for those services).

<sup>229</sup> See *American Library Association v. FCC*, 406 F.3d 689 (D.C. Cir. 2005) (holding that the Commission does not have authority to require that broadcast television reception devices recognize and honor recording limits that are embedded in broadcast television signals.).

<sup>230</sup> See, e.g., *AT&T Jan. 13 ex parte* at 1-2; Letter from Paul Glist, Counsel to the National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 3 (Jan. 13, 2016); Letter from Neal M. Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 4 (Dec. 18, 2015); Letter from Neal Goldberg, Vice President and General Counsel, National Cable &

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regime, and based on the current record, do not believe it is necessary for us to propose any rules to address these issues.<sup>231</sup> We seek comment on this view. We also seek comment on the extent to which copyright law may protect against these concerns, and note that nothing in our proposal will change or affect content creators' rights or remedies under copyright law. In the event that commenters submit evidence indicating that regulations are needed, we seek comment on whether we have the authority and enforcement mechanisms to address such concerns.<sup>232</sup>

#### **E. Small MVPDs**

81. We seek comment on how any rules that we adopt could affect small MVPDs, and whether we should impose different rules or implementation deadlines for small MVPDs. We tentatively conclude that all analog cable systems should be exempt from the rules we propose today, just as they were exempt from the original separation of security rules.<sup>233</sup> We also seek specific comment on the American Cable Association's proposal to exempt MVPDs serving one million or fewer subscribers from any rules we adopt.<sup>234</sup> Is there a size-neutral way that we could ensure that our rules are not overly burdensome to MVPDs? The American Cable Association also asserts that many of its members are not prepared to transition soon to delivery of their services in Internet Protocol,<sup>235</sup> but we note that our proposed rules do not require MVPDs to use Internet Protocol to deliver the three Information Flows or Compliant Security System. For example, although we do not advocate reliance on CableCARD as a long-term solution, we note that the CableCARD standard largely appears to align with our proposed rules.<sup>236</sup> Could the CableCARD regime remain a viable option for achieving the goals of Section 629 for those systems that continue to use QAM technology? Are there any changes to the CableCARD rules that should be made in light of more than a decade of experience with the regime or to accommodate changes in the MVPD industry since the rules were adopted? Do MVPDs who have not transitioned to IP delivery of control channel information nonetheless provide IP-based applications to their customers or use IP to send content to devices throughout a home network? If so, should such MVPDs be required to comply with the rules requiring parity for other Navigation Device developers via the Information Flows?

#### **F. Billing Transparency**

82. We seek comment on how best to align our existing rule on separate billing and subsidies for devices with the text of the Act, the current state of the marketplace, and our goal of facilitating a competitive marketplace for navigation devices.<sup>237</sup> Section 629 states that our regulations "shall not

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Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Oct. 30, 2015). *See also* Neil Fried, *The FCC Should Say No to AllVid: Part Two*, MPAA, Feb. 3, 2016, <http://www.mpa.org/allvid/> ("What AllVid proponents are actually seeking is federal rules to siphon pay-TV content and repackage select portions of it for their own commercial exploitation through fees, advertising, or data collection, and without having to enter into agreements with the creators like others in the marketplace must do.").

<sup>231</sup> These issues are distinct from issues regarding licensing terms that govern subscriber use of content, such as copy control and rights to stream content out-of-home. *See supra* ¶¶ 39, 71.

<sup>232</sup> We note that in paragraph 38 above, we tentatively conclude that Service Discovery Data need not include descriptive information about the advertising embedded within the program, to ensure that competitive Navigation Devices do not use that data to replace or alter advertising.

<sup>233</sup> *See Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Order on Reconsideration, 14 FCC Rcd 7596, 7599-606, ¶¶ 7-22 (1999).

<sup>234</sup> Letter from Ross J. Lieberman, Senior Vice President of Regulatory Affairs, American Cable Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 6 (Feb. 11, 2016).

<sup>235</sup> *Id.*

<sup>236</sup> *See* ANSI/SCTE 65 2008 (standardizing Service Discovery Data, Entitlement Data, and Content Delivery Data).

<sup>237</sup> *See* 47 C.F.R. § 76.1206.

prohibit [MVPDs] from also offering [navigation devices] to consumers, 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."<sup>238</sup> We note that, although Section 629(a) of the Act states that the Commission "shall not prohibit" any MVPD from offering navigation devices to consumers if the equipment charges are separately stated and not subsidized by service charges, it does not appear to affirmatively require the Commission to require separate statement or to prohibit cross-subsidies.<sup>239</sup> In the Commission's 1998 *Report and Order*, which implemented Section 629, the Commission rejected the argument that Section 629's requirements are "absolute" and that the section "expressly prevents all MVPDs from subsidizing equipment cost with service charges."<sup>240</sup> The Commission found that in a competitive market "there is minimal concern with below cost pricing because revenues do not emanate from monopoly profits. The subsidy provides a means to expand products and services, and the market provides a self-correcting resolution of the subsidy."<sup>241</sup> The Commission thus concluded that "[e]xisting equipment rate rules applicable to cable television systems not facing effective competition address Section 629(a)'s requirement that charges to consumers for such devices and equipment are separately stated and not subsidized by charges for any other service."<sup>242</sup> Accordingly, the Commission applied the separate billing and anti-subsidy requirements set forth in Section 76.1206 of our rules only to rate-regulated cable operators.<sup>243</sup> In 2010, the Commission adopted "CableCARD support" rules, which included pricing transparency requirements and required uniform pricing for CableCARDs "regardless of whether the CableCARD is used in a leased set-top box or a navigation device purchased at retail."<sup>244</sup>

83. Developments since the 1998 *Report and Order* raise a question whether the applicability of the Act's rate regulation provisions should continue to determine the applicability of our separate billing and anti-subsidy rules. At the time of that order, only a small minority of cable systems had been determined to be subject to "effective competition" as defined in the rate regulation provisions of the Act<sup>245</sup> and thus exempted from rate regulation.<sup>246</sup> Since that time, the Commission has made many

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<sup>238</sup> 47 U.S.C. § 549(a).

<sup>239</sup> *Id.*

<sup>240</sup> *First Plug and Play Report and Order*, 13 FCC Rcd at 14812-13, ¶ 92.

<sup>241</sup> *Id.* at 14811, ¶ 87.

<sup>242</sup> *Id.* at 14810, ¶ 86.

<sup>243</sup> Section 76.1206 applies to "navigation devices subject to the provisions of § 76.923." See 47 C.F.R. § 76.1206 ("Multichannel video programming distributors offering navigation devices subject to the provisions of § 76.923 for sale or lease directly to subscribers, shall adhere to the standards reflected therein relating to rates for equipment and installation and shall separately state the charges to consumers for such services and equipment."). Section 76.923, in turn, addresses the regulation of rates for equipment and installation used to receive the basic service tier. See 47 C.F.R. § 76.923(a) (defining the scope of the rule as covering "all equipment in a subscriber's home, provided and maintained by the operator, that is used to receive the basic service tier, regardless of whether such equipment is additionally used to receive other tiers of regulated programming service and/or unregulated service").

<sup>244</sup> 47 C.F.R. § 76.1205(b)(5); *Third Report and Order*, 25 FCC Rcd 14657, 14668 ¶ 19 (2010). To "ensure that cable operators are not subsidizing the costs of leased set-top boxes with service fees," the Commission also "adopt[ed] a rule that requires cable operators to reduce the price of packages that include set-top box rentals by the cost of a set-top box rental for customers who use a retail device." *Third Report and Order*, 25 FCC Rcd 14657, 14668-69 ¶ 19 (2010); 47 C.F.R. § 76.1205(b)(5)(ii)(B)(2). Section 76.1205(b)(5) applies to cable operators regardless of whether they are subject to rate regulation. However, unlike the rules we propose here, it does not currently apply to MVPDs other than cable operators or to navigation devices other than set-top boxes.

<sup>245</sup> 47 U.S.C. § 543(l) ("The term 'effective competition' means that—(A) fewer than 30 percent of the households in the franchise area subscribe to the cable service of a cable system; (B) the franchise area is—(i) served by at least two unaffiliated multichannel video programming distributors each of which offers comparable video programming to at least 50 percent of the households in the franchise area; and (ii) the number of households subscribing to programming services offered by multichannel video programming distributors other than the largest multichannel

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findings that the statutory test for effective competition was met and updated its effective competition rules to reflect the current MVPD marketplace.<sup>247</sup> We are no longer convinced that the statutory test for the applicability of rate regulation properly addresses our objective of promoting a competitive market for navigation devices as directed by Section 629. We base this proposed change in policy on our belief that customers may likely consider the costs of lease against purchase when considering whether to purchase a competitively provided device, and must know what it costs to lease a device in order to make an informed decision. Accordingly, we seek comment on whether we should modify our billing and/or anti-subsidy requirements set forth in Section 76.1206.

84. In particular, under the circumstances that exist today, should we revise our rules to require all MVPDs to state separately a charge for leased navigation devices and to reduce their charges by that amount to customers who provide their own devices, regardless of whether the statutory test for the applicability of rate regulation is met? Is such a requirement a necessary or appropriate complement to the rules we propose today to facilitate the offering of competitive navigation devices? We tentatively conclude that we should adopt such a requirement with respect to all navigation devices, including modems, routers, and set top boxes, and we invite comment on that tentative conclusion.

85. If we adopt a requirement that all MVPDs state separately a charge for leased navigation devices, we invite comment on whether we should also impose a prohibition on cross-subsidization of device charges with service fees. Section 629 discusses separate statement and prohibition of cross-subsidy in the same sentence; but we read the statute to permit us to make an individual determination whether to impose one requirement or the other, or both (or neither). Do present market circumstances warrant adoption of an anti-subsidization rule? Observers often suggest that the charges currently imposed for leased devices are typically excessive, rather than cross-subsidized.<sup>248</sup> A requirement of separate statement, by itself, should help to enable competition in the marketplace to ameliorate excessive pricing of leased devices. Is it therefore unnecessary at this time for us to adopt an expanded rule against cross-subsidization? Or would such a rule provide a useful prophylactic against future attempts to cross-subsidize? Would it suffice to require that a nonzero price be identified for any leased device? We seek

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video programming distributor exceeds 15 percent of the households in the franchise area; (C) a multichannel video programming distributor operated by the franchising authority for that franchise area offers video programming to at least 50 percent of the households in that franchise area; or (D) a local exchange carrier or its affiliate (or any multichannel video programming distributor using the facilities of such carrier or its affiliate) offers video programming services directly to subscribers by any means (other than direct-to-home satellite services) in the franchise area of an unaffiliated cable operator which is providing cable service in that franchise area, but only if the video programming services so offered in that area are comparable to the video programming services provided by the unaffiliated cable operator in that area.”).

<sup>246</sup> See, e.g., *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, Fifth Report, 13 FCC Rcd 24284, 24287, 24311, ¶¶ 7, 46-47 (1998) (noting that DBS subscribers represented 9.4 percent of all MVPD subscribers—suggesting that the 15 percent threshold in Section 623(l)(1)(B) was not met often—and that the Commission had granted only 57 petitions for determination of effective competition specifically on the basis of local exchange carrier effective competition).

<sup>247</sup> *Amendment to the Commission’s Rules Concerning Effective Competition; Implementation of Section 111 of the STELA Reauthorization Act*, 30 FCC Rcd 6574 (2015) (establishing a presumption that cable operators are subject to one type of effective competition, referred to as competing provider effective competition, unless a franchising authority demonstrates otherwise).

<sup>248</sup> See *Markey/Blumenthal Release* (“Consumers deserve protection against hidden, hideously vexing fees for set-top boxes,” said Blumenthal. “The average household is forced into fees of more than \$200 a year on set-top boxes – an expense that is unjust and unjustifiable.”); Letter from Mark Cooper, Director of Research, Consumer Federation of America, and John Bergmayer, Senior Staff Attorney, Public Knowledge, to Marlene H. Dortch, Secretary, Federal Communications Commission, at 2 (Jan. 20, 2016) (“The best explanation of the set-top box market’s exceptional ability to impose excess charges on consumers is its immunity to market forces and the failure of competition, both in pay TV more generally and in the set-top box market specifically.”)



comment on these issues. Commenters supporting adoption of an expanded anti-cross-subsidization rule should address the Commission's previous determination that "[a]pplying the subsidy prohibition to all MVPDs would lead to distortions in the market, stifling innovation and undermining consumer choice."<sup>249</sup>

86. If we decide to adopt an updated anti-subsidy rule, how should we determine whether a device fee is cross-subsidized? For example, would the factors set forth in Section 76.1205(b)(5) for determining the price that is "reasonably allocable" to a device lease fee be applicable for this purpose?<sup>250</sup> How should we consider the possibility that an MVPD would ascribe a zero or near-zero price to a navigation device, and what implications might there be for further Commission responsibilities and actions? Are there other ways in which we can promote a competitive marketplace through requirements applicable to equipment that MVPDs lease, sell, or otherwise provide to their subscribers? For example, Anne Arundel and Montgomery Counties, Maryland in their reply comments<sup>251</sup> propose that our rules (1) prohibit service charges for viewing on more than one device, (2) prohibit service charge penalties for consumer-owned devices, (3) prohibit multi-year contracts based on the use of a consumer-owned device, (4) ban "additional outlet" fees, (5) prohibit requirements that consumers lease equipment, and (6) give consumers the ability to purchase equipment outright. Commenters should include a discussion of the Commission's authority to adopt any regulations proposed.

#### **G. CableCARD Support and Reporting**

87. In this section, we seek comment on whether the CableCARD consumer support rules set forth in Section 76.1205(b) of the Commission's rules<sup>252</sup> continue to serve a useful purpose and should be retained following the D.C. Circuit's 2013 decision in *EchoStar Satellite L.L.C. v. FCC*, which vacated two 2003 Commission Orders adopting the CableCARD standard as the method that must be used by digital cable operators in implementing the separation of security requirement for navigation devices.<sup>253</sup> We tentatively conclude that these rules continue to serve a useful purpose and propose to retain them in our rules. We seek comment on this tentative conclusion. Alternatively, if commenters contend that the CableCARD consumer support rules should be eliminated or modified in light of *EchoStar*, commenters should explain the basis for their contention. To the extent that we conclude that the CableCARD consumer support rules continue to serve a useful purpose, we seek comment on whether to eliminate the requirement that the six largest cable operators submit status reports to the Commission every 90 days on CableCARD deployment and support.<sup>254</sup>

88. In 2005, the Commission adopted a requirement that the six largest cable operators submit status reports to the Commission every 90 days on CableCARD deployment and support.<sup>255</sup> The

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<sup>249</sup> *First Plug and Play Report and Order*, 13 FCC Rcd at 14812, ¶ 90.

<sup>250</sup> 47 C.F.R. § 76.1205(b)(5)(ii)(B)(2) ("[I]n determining what is 'reasonably allocable,' the Commission will consider in its evaluation whether the allocation is consistent with one or more of the following factors: (i) An allocation determination approved by a local, state, or Federal government entity; (ii) The monthly lease fee as stated on the cable system rate card for the navigation device when offered by the cable operator separately from a bundled offer; and (iii) The actual cost of the navigation device amortized over a period of no more than 60 months.").

<sup>251</sup> Anne Arundel County and Montgomery County, MD Reply at 6.

<sup>252</sup> 47 C.F.R. § 76.1205(b).

<sup>253</sup> *EchoStar Satellite L.L.C. v. FCC*, 704 F.3d 992 (D.C. Cir. 2013).

<sup>254</sup> *See Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Second Report and Order, 20 FCC Rcd 6794, 6814-15, ¶ 39 (2005) ("2005 Deferral Order").

<sup>255</sup> *2005 Deferral Order*, 20 FCC Rcd at 6714-15, ¶ 39. The Commission applied this reporting requirement to Comcast Corporation, Time Warner Cable, Cox Communications, Charter Communications, Adelphia Cable, and Cablevision. *Id.* In 2006, Time Warner Cable and Comcast Corporation acquired Adelphia Cable's systems, and from that point forward, Time Warner Cable and Comcast's reports included information regarding the Adelphia

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Commission adopted this reporting requirement to ensure that cable operators meet their obligations to deploy and support CableCARDS.<sup>256</sup> In an effort to “improve consumers’ experience with retail navigation devices,” the Commission in 2010 imposed specific CableCARD consumer support requirements on cable operators.<sup>257</sup> Specifically, these CableCARD consumer support rules: (1) require cable operators to support the reception of switched digital video services on retail devices to ensure that subscribers are able to access the services for which they pay regardless of whether they lease or purchase their devices; (2) prohibit price discrimination against retail devices to support a competitive marketplace for retail devices; (3) require cable operators to allow self-installation of CableCARDS where device manufacturers offer device-specific installation instructions to make the installation experience for retail devices comparable to the experience for leased devices; (4) require cable operators to provide multi-stream CableCARDS by default to ensure that cable operators are providing their subscribers with current CableCARD technology; and (5) clarify that CableCARD device certification rules are limited to certain technical features to make it easier for device manufacturers to get their products to market.<sup>258</sup>

89. In 2013, the D.C. Circuit in *EchoStar* vacated the two 2003 Orders adopting the CableCARD standard as the method that must be used by all MVPDs in implementing the separation of security requirement for navigation devices.<sup>259</sup> The D.C. Circuit concluded that the Commission lacked the authority under Section 629 to impose encoding rules, which put a ceiling on the copy protections that MVPDs can impose, on satellite carriers.<sup>260</sup> The Commission argued that those rules were not severable from the rest of the rules adopted in the 2003 Orders (including the rule that imposes the CableCARD standard), and therefore the D.C. Circuit vacated both of the orders. Subsequently, questions have been raised as to what effect, if any, the *EchoStar* decision has on the continued validity of the CableCARD consumer support requirements in Section 76.1205(b) of the Commission’s rules.<sup>261</sup>

90. We seek comment on whether the CableCARD consumer support rules set forth in Section 76.1205(b) continue to serve a useful purpose after the D.C. Circuit’s 2013 decision in *EchoStar*. As discussed above, the *EchoStar* decision vacated the two 2003 Orders that adopted rules mandating that MVPDs use the CableCARD standard to support the separation of security requirement.<sup>262</sup> The *EchoStar*

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systems that they acquired. See Letter from Neal Goldberg, Vice President and General Counsel, National Cable & Telecommunications Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, at 1 (filed Sept. 25, 2006).

<sup>256</sup> *2005 Deferral Order*, 20 FCC Rcd at 6714-15, ¶ 39. The reports are required to address the following: (1) the general availability of CableCARDS; (2) the number of CableCARDS currently in service and how those devices are placed in service; (3) whether service appointments are required for all CableCARD installations; (4) the average number of truck rolls required to install a CableCARD; (5) the monthly price charged for a CableCARD and the average cost of installation; (6) problems encountered in deploying CableCARDS and how those problems have been resolved; (7) the process in place for resolving existing and newly discovered CableCARD implementation problems; and (8) the effort to develop and deploy a multi-stream CableCARD. *Id.*

<sup>257</sup> *Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Third Report and Order and Order on Reconsideration, 25 FCC Rcd 14657, 14658, ¶ 1 (2010) (“*2010 CableCard Order*”).

<sup>258</sup> *Id.* See 47 C.F.R. § 76.1205(b).

<sup>259</sup> *EchoStar*, 704 F.3d at 1000.

<sup>260</sup> *Id.*

<sup>261</sup> See Petition for Reconsideration of TiVo Inc., MB Docket No. 12-328, at 12-13 (filed May 20, 2013), <http://apps.fcc.gov/ecfs/document/view?id=7022415061>. While TiVo’s petition has been mooted by the repeal of the integration ban, we believe that the issue raised in this petition regarding the continued validity of Section 76.1205(b) is important and should be resolved.

<sup>262</sup> See *supra* ¶ 89.

decision did not, however, vacate or even address the consumer support rules for cable operators that choose to continue to rely on the CableCARD standard in order to comply with the separated security requirement, which remains in effect. Accordingly, we believe that the consumer support rules set forth in Section 76.1205(b) continue to serve a useful purpose and should be retained. We seek comment on this belief. Are the consumer support rules still necessary to support a competitive market for retail navigation devices?

91. Additionally, we seek comment on whether to eliminate the CableCARD reporting requirement applicable to the six largest cable operators.<sup>263</sup> Specifically, we seek comment on whether the reporting requirement is still necessary in light of the CableCARD consumer support requirements, as well as the recent repeal of the integration ban.<sup>264</sup> As explained above, the reporting requirement was intended to ensure that cable operators satisfy their obligations to deploy and support CableCARDs.<sup>265</sup> Are the consumer support requirements sufficient to ensure that cable operators meet these obligations? If so, is there any reason to retain the reporting requirement or should it be eliminated?

#### IV. MEMORANDUM OPINION AND ORDER

92. As discussed above, Section 106 of STELAR states that the “second sentence of section 76.1204(a)(1) of title 47, Code of Federal Regulations, terminates effective on” December 4, 2015.<sup>266</sup> That second sentence is the portion of our rules that we commonly refer to as the integration ban, and it required cable operators to rely on identical security elements for leased devices and consumer-owned devices.<sup>267</sup> Section 106 goes on to state that by June 1, 2016, “the Commission shall complete all actions necessary to remove the sentence” from our rules.<sup>268</sup> With this Order, we remove that sentence from our rules.<sup>269</sup>

#### V. PROCEDURAL MATTERS

93. Authority. This *Notice of Proposed Rulemaking* is issued pursuant to authority contained in Sections 4(i), 4(j), 303(r), 325, 403, 616, 628, 629, 634 and 713 of the Communications Act of 1934, as amended, 47 U.S.C §§ 154(i), 154(j), 303(r), 325, 403, 536, 548, 549, 554, and 613.

94. Ex Parte Rules. The proceeding initiated by this *Notice of Proposed Rulemaking* shall be treated as “permit-but-disclose” proceedings in accordance with the Commission’s *ex parte* rules.<sup>270</sup> Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must: (1) list all persons attending or otherwise

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<sup>263</sup> See *supra* ¶ 88.

<sup>264</sup> The effectiveness of the integration ban, which prohibited an MVPD from placing in service new navigation devices for sale, lease, or use that perform both conditional access and other functions in a single integrated device, was terminated by Section 106 of the Satellite Television Extension and Localism Reauthorization Act of 2014, effective December 4, 2015. Pub. L. No. 113-200, § 106, 128 Stat. 2059 (2014).

<sup>265</sup> See *supra* ¶ 88.

<sup>266</sup> Pub. L. No. 113-200, § 106(a), 128 Stat. 2059, 2063-4 (2014).

<sup>267</sup> In practice, this meant that all cable-leased devices relied on CableCARDs, just as consumer-owned devices do. See John Eggerton, *NCTA Waves Goodbye to Set-Top Integration Ban*, BROADCASTING & CABLE, Dec. 2, 2015, available at <http://www.broadcastingcable.com/news/washington/ncta-waves-goodbye-set-top-integration-ban/146145>.

<sup>268</sup> Pub. L. No. 113-200, § 106(b), 128 Stat. 2059, 2063-4 (2014).

<sup>269</sup> See Appendix B.

<sup>270</sup> 47 C.F.R. §§ 1.1200 – 1.1216.

participating in the meeting at which the *ex parte* presentation was made; and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum.

Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

95. Filing Requirements. Pursuant to Sections 1.415 and 1.419 of the Commission's rules,<sup>271</sup> interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System ("ECFS").<sup>272</sup>

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12<sup>th</sup> St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12<sup>th</sup> Street, SW, Washington DC 20554.

96. Availability of Documents. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center, Federal Communications Commission, 445 12<sup>th</sup> Street, S.W., CY-A257, Washington, D.C., 20554. These documents will also be available via ECFS. Documents will be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

97. People with Disabilities. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call

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<sup>271</sup> See *id.* §§ 1.415, 1.419.

<sup>272</sup> See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

the FCC's Consumer and Governmental Affairs Bureau at (202) 418-0530 (voice), (202) 418-0432 (TTY).

98. Additional Information. For additional information on this proceeding, contact Brendan Murray of the Media Bureau, Policy Division, (202) 418-1573 or Lyle Elder of the Media Bureau, Policy Division, (202) 418-2365.

99. Regulatory Flexibility Analysis. As required by the Regulatory Flexibility Act of 1980, see 5 U.S.C. § 604, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in Appendix B. Written public comments are requested in the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this *Notice of Proposed Rulemaking* as set forth on the first page of this document, and have a separate and distinct heading designating them as responses to the IRFA.

100. Initial Paperwork Reduction Act Analysis. This Notice of Proposed Rulemaking seeks comment on a potential new or revised information collection requirement. If the Commission adopts any new or revised information collection requirement, the Commission will publish a separate notice in the Federal Register inviting the public to comment on the requirement, as required by the Paperwork Reduction Act of 1995, Public Law 104-13 (44 U.S.C. 3501-3520). In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, 44 U.S.C. 3506(c)(4), the Commission seeks specific comment on how it might "further reduce the information collection burden for small business concerns with fewer than 25 employees."

## VI. ORDERING CLAUSES

101. Accordingly, **IT IS ORDERED**, pursuant to the authority contained in Sections 4(i), 4(j), 303, 303A, 335, 403, 624, 624A, 629, 631, 706, and 713 of the Communications Act of 1934, as amended, 47 U.S.C §§ 154(i), 154(j), 303, 303a, 335, 403, 544, 544a, 549, 551, 606, and 613, that this *Notice of Proposed Rulemaking and Memorandum Opinion and Order* **IS ADOPTED**.

102. **IT IS FURTHER ORDERED** that MB Docket No. 10-91 and MB Docket No. 15-64 **ARE TERMINATED**.

103. **IT IS FURTHER ORDERED** that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, **SHALL SEND** a copy of this *Notice of Proposed Rulemaking and Memorandum Opinion and Order* including the Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX A

## Proposed Rules

1. Amend § 76.1200 to read as follows

**§ 76.1200 Definitions.**

\* \* \*

(e) *Navigable Service*. A multichannel video programmer's video programming and Emergency Alert System messages (see 47 C.F.R. Part 11).

(f) *Service Discovery Data*. Information about available Navigable Services and any instructions necessary to request a Navigable Service.

(g) *Entitlement Data*. Information about (1) which Navigable Services a subscriber has the rights to access and (2) the rights the subscriber has to use those Navigable Services. Entitlement data shall reflect identical rights that a consumer has on Navigation Devices that the multichannel video programming distributor sells or leases to its subscribers.

(h) *Content Delivery Data*. Data that contains the Navigable Service and any information necessary to make the Navigable Service accessible to persons with disabilities under Part 79 of this Title.

(i) *Open Standards Body*. A standards body (1) whose membership is open to consumer electronics, multichannel video programming distributors, content companies, application developers, and consumer interest organizations, (2) that has a fair balance of interested members, (3) that has a published set of procedures to assure due process, (4) that has a published appeals process, and (5) that strives to set consensus standards.

(j) *Trust Authority*. An entity that issues certificates and keys used by a Navigation Device to access Navigable Services that are secured by a given Compliant Security System.

(k) *Compliant Security System*. A conditional access system or link protection technology that: 1) is licensable on reasonable and nondiscriminatory terms; 2) relies on a Trust Authority not substantially controlled by any multichannel video programming distributor or group of multichannel video programming distributors; and 3) is licensable on terms that require licensees to comply with robustness and compliance rules.

(l) *Certificate*. A document that certifies that a Navigation Device will honor privacy, Emergency Alert System messages, the Accessibility Rules in Part 79 of this Chapter, parental control information, and children's programming advertising limits.

2. Amend § 76.1206 to read as follows:

**§ 76.1206. Equipment sale or lease charge subsidy prohibition.** After January 1, 2017, multichannel video programming distributors shall state the price for Navigation Devices separately on consumer bills.

3. Add § 76.1211 to read as follows:

**§ 76.1211. Information Necessary to Assure a Commercial Market for Navigation Devices.**

(a) Each multichannel video programming distributor shall make available to each Navigation Device that has a Certificate the Service Discovery Data, Entitlement Data, and Content Delivery Data for all Navigable Services in published, transparent formats



that conform to specifications set by Open Standards Bodies in a manner that does not restrict competitive user interfaces and features.

(b) If a multichannel video programming distributor makes available an application that allows access to multichannel video programming without the technological need for additional multichannel video programming distributor-specific equipment, then it shall make Service Discovery Data, Entitlement Data, and Content Delivery Data available to competitive Navigation Devices without the need for multichannel video programming distributor-specific equipment.

(c) Each multichannel video programming distributor shall support at least one Compliant Security System.

(1) At least one supported Compliant Security System shall enable access to all resolutions and formats of the multichannel video programming distributor's Navigable Services with the same Entitlement Data to use those Navigable Services as the multichannel video programming distributor affords Navigation Devices that it leases, sells, or otherwise provides to its subscribers.

(2) Entitlement Data shall not discriminate on the basis of the affiliation of the Navigation Device.

(d) On any device on which a multichannel video programming distributor makes available an application to access multichannel video programming, the multichannel video programming distributor must support at least one Compliant Security System that offers access to the same Navigable Services with the same rights to use those Navigable Services as the multichannel video programming distributor affords to its own application.

**APPENDIX B****Final Rules**

## 1. Amend § 76.1204 to read as follows:

## (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.

(2) The foregoing requirement shall not apply:

(i) 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.

(b) Conditional access function equipment made available pursuant to paragraph (a)(1) of this section shall be designed to connect to and function with other Navigation Devices available through the use of a commonly used interface or an interface that conforms to appropriate technical standards promulgated by a national standards organization.

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

(d) Notwithstanding the foregoing, Navigation Devices need not be made available pursuant to this section where: (1) It is not reasonably feasible to prevent such devices from being used for the unauthorized reception of service; or (2) It is not reasonably feasible to separate conditional access from other functions without jeopardizing security.

(e) Paragraphs (a)(1), (b), and (c) of this section shall not apply to the provision of any Navigation Device that: (1) Employs conditional access mechanisms only to access analog video programming; (2) Is capable only of providing access to analog video programming offered over a multichannel video programming distribution system; and (3) Does not provide access to any digital transmission of multichannel video programming or any other digital service through any receiving, decoding, conditional access, or other function, including any conversion of digital programming or service to an analog format.

## APPENDIX C

### Initial Regulatory Flexibility Act Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (“RFA”)<sup>1</sup> the Commission has prepared this present Initial Regulatory Flexibility Analysis (“IRFA”) concerning the possible significant economic impact on small entities by the policies and rules proposed in this Notice of Proposed Rulemaking (*Notice*). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments indicated on the first page of the *Notice*. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).<sup>2</sup> In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.<sup>3</sup>

#### A. Need for and Objectives of the Proposed Rules

2. In the *Notice*, the Commission seeks comment on proposed rules relating to the Commission’s obligation under Section 629 of the Communications Act to assure a commercial market for equipment that can access multichannel video programming and other services offered over multichannel video programming systems. The NPRM tentatively concludes that new rules about multichannel video programming distributor’s (MVPD’s) provision of content are needed to further the goals of Section 629. It proposes such new rules, relating to the information that MVPDs must provide to allow competitive user interfaces, the security flexibility necessary to protect content, and the parity requirements necessary to ensure a level playing field between MVPD-leased equipment and competitive methods that consumers might use to access MVPD service instead of leasing MVPD equipment. The *Notice* also asks about MVPD fees for devices and the current status of the Commission’s CableCARD rules, the existing rules arising from Section 629.

#### B. Legal Basis

3. The authority for the action proposed in this rulemaking is contained in sections 1, 4, 303, 303A, 335, 403, 624, 624A, 629, 631, 706, and 713 of the Communications Act of 1934, as amended, 47 U.S.C §§ 151, 154, 303, 303a, 335, 403, 544, 544a, 549, 551, 606, and 613.

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

4. The RFA directs the Commission to provide a description of and, where feasible, an estimate of the number of small entities that will be affected by the proposed rules, if adopted.<sup>4</sup> The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small government jurisdiction.”<sup>5</sup> In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.<sup>6</sup> A small business concern

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<sup>1</sup> See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 et. seq., has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (“SBREFA”), Pub. L. No. 104-121, Title II, 110 Stat. 847 (1996). The SBREFA was enacted as Title II of the Contract With America Advancement Act of 1996 (“CWAAA”).

<sup>2</sup> See 5 U.S.C. § 603(a).

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at § 603(b)(3).

<sup>5</sup> 5 U.S.C. § 601(6).

<sup>6</sup> *Id.* at § 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public

(continued....)

is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.<sup>7</sup>

5. *Wired Telecommunications Carriers.* The North American Industry Classification System (“NAICS”) defines “Wired Telecommunications Carriers” as follows: “This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”<sup>8</sup> The SBA has developed a small business size standard for wireline firms for the broad economic census category of “Wired Telecommunications Carriers.” Under this category, a wireline business is small if it has 1,500 or fewer employees.<sup>9</sup> Census data for 2007 shows that there were 3,188 firms that operated for the entire year.<sup>10</sup> Of this total, 3,144 firms had fewer than 1,000 employees, and 44 firms had 1,000 or more employees.<sup>11</sup> Therefore, under this size standard, we estimate that the majority of businesses can be considered small entities.

6. *Cable Television Distribution Services.* Since 2007, these services have been defined within the broad economic census category of Wired Telecommunications Carriers, which category is defined above.<sup>12</sup> The SBA has developed a small business size standard for this category, which is: All such businesses having 1,500 or fewer employees.<sup>13</sup> Census data for 2007 shows that there were 3,188 firms that operated for the entire year.<sup>14</sup> Of this total, 3,144 firms had fewer than 1,000 employees, and

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comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.” 5 U.S.C. § 601(3).

<sup>7</sup> 15 U.S.C. § 632. Application of the statutory criteria of dominance in its field of operation and independence are sometimes difficult to apply in the context of broadcast television. Accordingly, the Commission’s statistical account of television stations may be over-inclusive.

<sup>8</sup> U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Carriers” at <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>, <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>. Examples of this category are: broadband Internet service providers (e.g., cable, DSL); local telephone carriers (wired); cable television distribution services; long-distance telephone carriers (wired); closed circuit television (“CCTV”) services; VoIP service providers, using own operated wired telecommunications infrastructure; direct-to-home satellite system (“DTH”) services; telecommunications carriers (wired); satellite television distribution systems; and multichannel multipoint distribution services (“MMDS”).

<sup>9</sup> 13 C.F.R. § 121.201; NAICS code 517110.

<sup>10</sup> U.S. Census Bureau, 2007 Economic Census. See U.S. Census Bureau, American FactFinder, “Information: Subject Series – Estab and Firm Size: Employment Size of Establishments for the United States: 2007 – 2007 Economic Census,” NAICS code 517110, Table EC0751SSSZ5; available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml> <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

<sup>11</sup> *Id.* With respect to the latter 44 firms, there is no data available that shows how many operated with more than 1,500 employees.

<sup>12</sup> See also U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Carriers” at <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

<sup>13</sup> 13 C.F.R. § 121.201; NAICS code 517110.

44 firms had 1,000 or more employees.<sup>15</sup> Therefore, under this size standard, we estimate that the majority of businesses can be considered small entities.

7. *Cable Companies and Systems.* The Commission has developed its own small business size standards for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers nationwide.<sup>16</sup> Industry data shows that there are currently 660 cable operators.<sup>17</sup> Of this total, all but ten cable operators nationwide are small under this size standard.<sup>18</sup> In addition, under the Commission's rate regulation rules, a "small system" is a cable system serving 15,000 or fewer subscribers.<sup>19</sup> Current Commission records show 4,629 cable systems nationwide.<sup>20</sup> Of this total, 4,057 cable systems have less than 20,000 subscribers, and 572 systems have 20,000 or more subscribers, based on the same records. Thus, under this standard, we estimate that most cable systems are small entities.

8. *Cable System Operators (Telecom Act Standard).* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."<sup>21</sup> There are approximately 54 million cable video subscribers in the United States today.<sup>22</sup> Accordingly, an operator serving fewer than 540,000 subscribers shall be deemed a small operator if its annual revenues, when combined with the total annual revenues of all its affiliates, do not

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<sup>14</sup> U.S. Census Bureau, 2007 Economic Census. See U.S. Census Bureau, American FactFinder, "Information: Subject Series – Estab and Firm Size: Employment Size of Establishments for the United States: 2007 – 2007 Economic Census," NAICS code 517110, Table EC0751SSSZ5; available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml><http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

<sup>15</sup> *Id.* With respect to the latter 44 firms, there is no data available that shows how many operated with more than 1,500 employees.

<sup>16</sup> 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the Cable Television Consumer Protection And Competition Act of 1992: Rate Regulation*, MM Docket No. 92-266, MM Docket No. 93-215, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408, ¶ 28 (1995).

<sup>17</sup> NCTA, Industry Data, Number of Cable Operators and Systems, <http://www.ncta.com/Statistics.aspx><http://www.ncta.com/Statistics.aspx> (visited October 13, 2014). Depending upon the number of homes and the size of the geographic area served, cable operators use one or more cable systems to provide video service. See *Annual Assessment of the Status of Competition in the Market for Delivery of Video Programming*, MB Docket No. 12-203, Fifteenth Report, 28 FCC Rcd 10496, 10505-6, ¶ 24 (2013) ("15<sup>th</sup> Annual Competition Report").

<sup>18</sup> See SNL Kagan, "Top Cable MSOs – 12/12 Q"; available at <http://www.snl.com/InteractiveX/TopCableMSOs.aspx?period=2012Q4&sortcol=subscribersbasic&sortorder=desc><http://www.snl.com/InteractiveX/TopCableMSOs.aspx?period=2012Q4&sortcol=subscribersbasic&sortorder=desc>.

<sup>19</sup> 47 C.F.R. § 76.901(c).

<sup>20</sup> The number of active, registered cable systems comes from the Commission's Cable Operations and Licensing System (COALS) database on October 10, 2014. A cable system is a physical system integrated to a principal headend.

<sup>21</sup> 47 U.S.C. § 543(m)(2); see 47 C.F.R. § 76.901(f) & nn. 1-3.

<sup>22</sup> See NCTA, Industry Data, Cable's Customer Base, <http://www.ncta.com/industry-data><http://www.ncta.com/industry-data> (visited October 13, 2014).



exceed \$250 million in the aggregate.<sup>23</sup> Based on available data, we find that all but ten incumbent cable operators are small entities under this size standard.<sup>24</sup> We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million.<sup>25</sup> Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

9. *Direct Broadcast Satellite (DBS) Service.* DBS service is a nationally distributed subscription service that delivers video and audio programming via satellite to a small parabolic “dish” antenna at the subscriber’s location. DBS, by exception, is now included in the SBA’s broad economic census category, Wired Telecommunications Carriers,<sup>26</sup> which was developed for small wireline businesses. Under this category, the SBA deems a wireline business to be small if it has 1,500 or fewer employees.<sup>27</sup> Census data for 2007 shows that there were 3,188 firms that operated for that entire year.<sup>28</sup> Of this total, 2,940 firms had fewer than 100 employees, and 248 firms had 100 or more employees.<sup>29</sup> Therefore, under this size standard, the majority of such businesses can be considered small entities. However, the data we have available as a basis for estimating the number of such small entities were gathered under a superseded SBA small business size standard formerly titled “Cable and Other Program Distribution.” As of 2002, the SBA defined a small Cable and Other Program Distribution provider as one with \$12.5 million or less in annual receipts.<sup>30</sup> Currently, only two entities provide DBS service, which requires a great investment of capital for operation: DIRECTV and DISH Network.<sup>31</sup> Each

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<sup>23</sup> 47 C.F.R. § 76.901(f); see *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, Public Notice, 16 FCC Rcd 2225 (Cable Services Bureau 2001).

<sup>24</sup> See NCTA, Industry Data, Top 25 Multichannel Video Service Customers (2012), <http://www.ncta.com/industry-data> <http://www.ncta.com/industry-data> (visited Aug. 30, 2013).

<sup>25</sup> The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority’s finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission’s rules. See 47 C.F.R. § 76.901(f).

<sup>26</sup> See 13 C.F.R. § 121.201, 2012 NAICS code 517110. This category of Wired Telecommunications Carriers is defined as follows: “This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services. *By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.*” (*Emphasis added to text relevant to satellite services.*) U.S. Census Bureau, 2012 NAICS Definitions, “517110 Wired Telecommunications Carriers,” at <http://www.census.gov/cgi-bin/sssd/naics/naicsrch> <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

<sup>27</sup> 13 C.F.R. § 121.201; 2012 NAICS code 517110.

<sup>28</sup> U.S. Census Bureau, 2007 Economic Census. See U.S. Census Bureau, American FactFinder, “Information: Subject Series – Estab and Firm Size: Employment Size of Establishments for the United States: 2007 – 2007 Economic Census,” NAICS code 517110, Table EC0751SSSZ5; available at [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN\\_2007\\_US\\_51SSSZ5&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ5&prodType=table).

<sup>29</sup> *Id.*

<sup>30</sup> See 13 C.F.R. § 121.201, NAICS code 517510 (2002).

currently offers subscription services. DIRECTV and DISH Network each report annual revenues that are in excess of the threshold for a small business. Because DBS service requires significant capital, we believe it is unlikely that a small entity as defined under the superseded SBA size standard would have the financial wherewithal to become a DBS service provider.

**D. Description of Projected Reporting, Recordkeeping and other Compliance Requirements**

10. The *Notice* proposes the following new or revised reporting or recordkeeping requirements. It proposes that MVPDs offer three flows of information using any published, transparent format that conforms to specifications set by open standards bodies, to permit the development of competitive navigation devices with competitive user interfaces. It proposes that the flows of information not be made available to a device absent verification that the device will honor copying and recording limits, privacy, Emergency Alert System messages, the Accessibility Rules in Part 79 of the Commission's Rules, parental control information, and children's programming advertising limits.

11. It further proposes that each MVPD use at least one content protection system that is licensed on a reasonable and non-discriminatory basis by an organization that is not affiliated with MVPDs; that at least one such content protection system make available the entirety of the MVPD's service; and that the MVPD ensure that, on any device for which it provides an application, such a content protection system is available to competitors wishing to provide the same level of service. It also proposes a bar on Entitlement data discrimination because of the affiliation of otherwise proper devices. The *Notice* proposes to require each MVPD that offers its own application on unaffiliated devices without the need for MVPD-specific equipment to also offer the three information flows to unaffiliated applications without the need for MVPD-specific equipment.

12. Finally, the *Notice* proposes to require MVPDs to separately state the fees charged to lease devices on consumers' bills, and, in a possible reduction of reporting requirements, seeks comment on discontinuing a requirement that the six largest cable operators report to the Commission about their support for CableCARD.

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

13. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.<sup>32</sup>

14. The *Notice* proposes rules intended to assure a commercial market for competitive Navigation Devices. The Commission's has a statutory obligation to do so, and has concluded that it cannot do so if competitive Navigation Devices are tied to specific MVPDs. As a result, the compliance requirements must be the same for all MVPDs, large and small. The rules have been proposed in terms to minimize economic impact on small entities. The proposed rules allow flexibility for MVPDs while still assuring device manufacturers they can build to a manageable number of standards, and assuring

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<sup>31</sup> See *15<sup>th</sup> Annual Competition Report*, 28 FCC Rcd at 10507, ¶ 27. As of June 2012, DIRECTV is the largest DBS operator and the second largest MVPD in the United States, serving approximately 19.9 million subscribers. DISH Network is the second largest DBS operator and the third largest MVPD, serving approximately 14.1 million subscribers. *Id.* at 10507, 10546, ¶¶ 27, 110-11.

<sup>32</sup> 5 U.S.C. § 603(c)(1)-(c)(4)

consumers that they only need a single device. That flexibility arises from the fact that the proposed rules establish performance standards, not design standards. Although the compliance requirements must be the same in order to comply with our statutory mandate, the requirements themselves are clear and simple. Because they would be able, under the proposed rules, to rely on open standards for information flows and RAND licensable security, small MVPDs would not have to engage in complex compliance efforts. The only reporting requirements are related to fees for device leases, which cannot be further simplified for small entities. Finally, although the rules do not contemplate exemptions for small entities, the proposed rule requiring “boxless” provision of the three information flows applies only to MVPDs with the technological sophistication to offer “boxless” programming to their own devices. Thus, smaller MVPDs that are not providing this service will not be required to implement “boxless” information flows by operation of the proposed rule.

**F. Federal Rules Which Duplicate, Overlap, or Conflict with the Commission’s Proposals**

15. None.

**STATEMENT OF  
CHAIRMAN TOM WHEELER**

*Re: Expanding Consumers' Video Navigation Choices, MB Docket No. 16-42; Commercial Availability of Navigation Devices, CS Docket No. 97-80.*

Congress has given the Commission explicit instructions. Section 629 of the Communications Act requires the Commission to “assure the commercial availability, to consumers of multichannel video programming and other services offered over multichannel video programming systems, of converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor.”

Put another way, when consumers connect to a pay-TV service they should have the same ability to choose their equipment, just as they do when signing up for phone service. That’s not just what common sense and free-market economics tell us. That’s what the law mandates. But when it comes to the set-top boxes mandated by pay-TV providers, consumers essentially have no choices, and they are literally paying the price for this lack of alternatives. Today, the Commission begins the process of unlocking the set-top box marketplace and unleashing the benefits of competition.

To understand the urgent need for action, you only need to look at the facts. Ninety-nine percent of pay-TV customers lease set-top boxes from their cable, satellite or telco providers. There is no competitive market, contrary to statutory mandate. U.S. consumers, are paying \$231 a year to rent those boxes; collectively, these consumers are spending \$20 billion annually. And, according to one analysis, over the past 20 years, the cost of cable set-top boxes has risen 185 percent while the cost of computers, televisions and mobile phones has dropped by 90 percent. One of these markets is competitive; the other is not.

It doesn’t have to be this way. Consumers should have more choices for innovative ways to access video content on the device or app they prefer. By introducing competition into this closed market, today’s proposal will provide those options.

Specifically, we propose establishing open standards for set-top boxes, the same way we have standards for cell phones, Bluetooth, Wi-Fi, routers, and other devices. Replacing closed standards controlled by the pay-TV industry with open standards will tear down the barriers that currently prevent innovators from developing new ways for consumers to access and enjoy their favorite shows and movies on their terms. The new rules would create a framework for providing device manufacturers, software developers and others the information they need to introduce innovative new technologies, while at the same time maintaining strong security, copyright and consumer protections.

Open standards will pave the way for a competitive marketplace for alternate navigation devices, and could even end the need for multiple remote controls. Innovation enabled by openness will drive more options for user-friendly menus and search functions as well as expand access to programming created by independent and diverse voices. By integrating navigation functions currently spread across multiple devices consumers will more easily access a variety of video content that is today buried behind incompatible and often arcane navigation systems.

So that’s what the proposal will do. Here’s what it will *not* do.

This proposal will *not* require consumers to purchase new boxes. The cable industry is

continually trying to call today's All-Vid, a failed proposal from 2010 that would have required a second box. This is not All-Vid. It is not requiring a second box. In fact, we expect that this proposal could enable the development of software solutions that eliminate the need for any box at all.

This proposal will *not* harm consumer privacy. The proposal tentatively concludes that the privacy protections that exist today will also apply when alternative navigation devices are used.

This proposal will *not* interfere with the business relationships or content agreements between MVPDs and their content providers or between MVPDs and their customers.

This proposal will *not* open up content to compromised security. It simply requires pay-TV providers to offer at least one content protection system that is openly licensed on reasonable and non-discriminatory terms.

Whereas issues like privacy, security, and copyright have made opening up the set-top box market a challenge in the past, it's important to note that today's smart TVs prove that we can preserve all the privacy, security, and copyright protections of the set-top box without that actual box.

Finally, this proposal will *not* harm minority programming opportunities. In fact, we expect the opportunity to reach consumers to increase. When it's easier for content creators to reach consumers, through better interfaces, menus, search functions, and improved over-the-top integration, this will likely lead to more diverse programming accessed more easily — especially minority and independent programming.

We've been here before.

Decades ago, if you wanted to have a landline in your home, you had to lease your phone from Ma Bell. There was little choice in telephones, and prices were high. The FCC unlocked competition and empowered consumers with a simple but powerful rule: Consumers could connect the telephones and modems of their choice to the telephone network. Competition and game-changing innovation followed, from lower-priced phones to answering machines to technology that is the foundation of the Internet. Should pay-TV continue to be an exception? I believe, and Congress has made clear, the answer is no. You should have choices in how you access the video programming you are paying for, as well.

In the end, this proposal is about one thing: putting the future of TV in consumer's hands. You should have options that competition provides. It's time to unlock the set-top box market — let's let innovators create, and then let consumers choose.

Thank you to Media Bureau team for their diligent and thoughtful work on this item.



**STATEMENT OF  
COMMISSIONER MIGNON L. CLYBURN**

*Re: Expanding Consumer's Video Navigation Choices, MB Docket No. 16-42; Commercial Availability of Navigation Devices, CS Docket No. 97-80.*

In 1996, Congress added Section 629 to the Communications Act, which mandated this agency to take steps toward ensuring that a competitive navigation device market exists for access to multichannel video programming. While prior Commission attempts in this area have been less than successful, standardization and technological advancements have made it easier to introduce competition and innovation into the set top box market. While these developments have resulted in some competition, consumers deserve more.

Today's Notice of Proposed Rulemaking, seeks to give consumers more control, in how they access the video services they subscribe to. It also attempts to promote innovation in the display, selection and use of this programming. In short, choice. It would allow for the development of more user-friendly interfaces, opening the market to additional platforms that are not strictly under the purview and management of a single distributor.

Today, 99% of pay-TV customers rent a set top box from an MVPD at a cost that exceeds \$200 per year. While the costs of other technologies have fallen as competition increased, the cost of the set top box has risen by more than three times the rate of inflation for American pay-TV subscribers over the same period.

This item proposes, not adopts, but proposes, to provide a technology neutral means for consumers to choose how they interact with the multichannel video programming services they pay for. If a consumer wishes to purchase a device or application to access this programming, this proposal will empower that choice. If a consumer chooses to continue to rent a box or app from their MVPD, they have the option to do that too. This item does not propose a specific technical standard, like the AllVid proposal that the Commission considered in 2010. Instead, a standard setting body, in consultation with those affected, would lay out technical specifications enabling manufacturers, retailers, and companies including the cable or satellite providers, to build and design navigation devices.

There has been much discussion recently, about how and if this proposal will affect content diversity, with some expressing concern that it could lead to decreases in the levels of diverse programming choices. Sadly, we are only speaking about a paltry number of diverse channels can be found over these systems today, but for the handful of those that have had success in being carried by an MVPD, I see no legitimate business or economic reason why this item should make their programming or the relationship with the distributor any more vulnerable than their counterparts. What I hope will occur is that creators of content who have been unable to get MVPD carriage may soon have a means to reach consumers directly. Similar to the way that Internet searches provide consumers with information from various sources, a competitive solution with improved search functionality could allow consumers to find programming that is available over-the-top, something you cannot do with today's set top boxes. These developments should result in consumers having a wider range of options.

I thank the Media Bureau for their hard work on today's item, especially the efforts of Brendan Murray and Lyle Elder.

**STATEMENT OF  
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Expanding Consumers' Video Navigation Choices*, MB Docket No. 16-42; *Commercial Availability of Navigation Devices*, CS Docket No. 97-80.

Here's an experiment. You can do it at home. Just sit in your favorite comfortable chair—you know, the one in front of the television. In one hand hold the remote control for your set top box. In the other hand hold your mobile phone. Now ask yourself which of these two devices has changed substantially over the past two decades? Which has seen extraordinary innovation? Which has benefited from competition?

The answers are obvious. The bulky, graceless mobile phones from two decades ago have been replaced by sleek new models. But it's more than just aesthetics, because what we can do with these devices is incredible. Smartphones have changed our lives—and are changing our world. But the clunky set top box and many-buttoned remote have not evolved at the same pace—nor have they faced the same level of competition.

The numbers make this very clear. Ninety-nine percent of consumers still rent their set top boxes from their pay television provider. The typical household spends more than \$231 a year on set top box rental fees. Costs are high, innovation is slow, and competition is limited.

Congress did not want it to be this way. Two decades ago, in the Telecommunications Act of 1996, this agency was charged with ensuring the commercial availability of navigation devices—creating a competitive market for set top boxes. There are times when legislative directives are not clear; this is not one of them.

I think we can do better. So I support today's rulemaking.

But I also think we have a lot of work to do. Important questions have been raised about copyright, privacy, diversity—and a whole host of other issues in a marketplace that has been tough for competitive providers to crack. We will need to explore them in the record that develops. Let me raise one other: This rulemaking is complicated. It describes three information streams for navigation services, work that needs to be done by standards bodies, a medley of security systems, and a trio of parity requirements. The most successful regulatory efforts are simple ones. More work needs to be done to streamline this proposal, because in the end for consumers to enjoy the bounty of what we have proposed—execution is all.

So what we have here may not be the precise way forward. But something has got to give. I support Chairman Wheeler's effort to get this proceeding started. Because it is time—past time—to live up to our statutory obligations and foster the competition consumers deserve.

**DISSENTING STATEMENT  
OF COMMISSIONER AJIT PAI**

Re: *Expanding Consumers' Video Navigation Choices*, MB Docket No. 16-42; *Commercial Availability of Navigation Devices*, CS Docket No. 97-80.

As someone with three set-top boxes in my home, I share the frustrations felt by millions of Americans across this country. These boxes are clunky and expensive, and I feel the pain each and every month when I pay my video bill. And as an FCC Commissioner, I know that the current set-top box marketplace is the product of an intrusive regulatory regime. Something has to change.

What should that change look like? What should our aim be when it comes to this marketplace? What would be best for consumers? My view is pretty simple. **Our goal should not be to unlock the box; it should be to eliminate the box.** If you are a cable customer and you don't want to have a set-top box, you shouldn't be required to have one. This goal is technically feasible, and it reflects most consumers' preferences—including my own.

But in this *Notice*, the FCC takes a much different tack. It doubles down on the necessity of having a box, substituting one intrusive regulatory regime for another. Essentially, it would introduce an entirely new set of boxes into consumers' homes. Because this proposal moves us further away from the objective of dropping the box and because it takes a 20th century approach to this 21st century problem, I cannot support this *Notice*.

Let's start with one indisputable fact: When it comes to navigation devices, the FCC has not embraced free-market policies. Instead, it has embraced a form of centralized planning. By implementing the CableCARD regime and the integration ban, the FCC sought to mold the set-top box marketplace to its desired shape. But there is widespread agreement that the Commission's regulatory intervention has been a massive failure. Indeed, this *Notice* repeatedly admits the rules failed to achieve their objective. The FCC's regulations have raised the price of set-top boxes, costing Americans billions of dollars in additional fees. They have increased cable customers' energy consumption by 500 million kilowatt hours each year, enough to power all the homes in Washington, DC for three months. And they have failed to produce robust competition in the set-top box market. Less than 2% of customers have purchased their set-top box at retail.

Indeed, the failure of the FCC's policies is what brings us here today. But as we seek to trade one complex regulatory scheme for another, we should pause and ask ourselves a simple question: Will the result be any different this time around? Will the sequel be any better than the original? In my judgment, the answer is no.

*First and foremost*, this proposal is likely to produce a stalemate—not a newly competitive market. The cornerstone of the *Notice* is the heavy reliance on open standards bodies operating through consensus. According to the Commission's proposal, MVPDs will be required to supply certain information in “formats that conform to specifications set by ‘open standards bodies.’”<sup>1</sup> These open standards bodies, in turn, would consist of members representing all stakeholders and would develop standards by consensus. But would this consensus ever really happen?

To date, the defining characteristic of this proceeding has been vigorous disagreement, with video distributors and content creators on one side and the consumer electronics industry on the other. We saw this in the Downloadable Security Technology Advisory Committee (DSTAC). We have seen this in the run-up to today's vote. And I'm sure that we will see it in the comments that will be filed in response to this *Notice*. Should we have confidence that a highly heterodox open standards body will become

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<sup>1</sup> *Notice* at para. 41.

harmonious after the Commission issues final rules? If anything, when it is time to get down to the technical nitty-gritty of implementing such controversial regulations, I believe that it will be harder, not easier, to reach consensus. Indeed, the odds are probably better that Mark Zuckerberg will agree to Kanye West's request for \$1 billion.

*Second*, there's a problem of timing. The Commission's rules will not have any impact for years. For example, the *Notice* proposes that MVPDs would not have to implement these regulations until two years after their adoption. So even if all goes according to plan, and I am extremely skeptical that it will, consumers probably would not feel the effects for another three years.

Just think about what three years means in the dynamic video marketplace. Thirty-six months ago, there was no such thing as the Google Chromecast or Amazon Fire TV Stick. There's no telling what further innovation will occur over the course of the next three years, but we do know it'll happen, and fast. So while MVPDs, the consumer electronics industry, and content creators spend years trying to implement the Commission's rules, technology could render all of that work obsolete by the time it's ready to roll out. That would be a waste of time, energy, and money for all involved.

*Third*, if the standards envisioned by the Commission's proposal are ever actually implemented, the likely result is that consumers will have to deal with two boxes instead of one. Much of the controversy surrounding this proposal has centered on whether it would require an additional box to be deployed in Americans' homes. Now, to be sure, the *Notice* doesn't say in so many words that MVPDs would be required to provide customers with another box. But that unfortunately is likely to be the outcome if these rules are adopted and implemented.

Here's why. In order to carry out the standards called for in this *Notice*, MVPDs would probably have one of two options. First, they could make substantial changes to their network architecture. Or second, they could provide each customer with an additional box. And during my discussions with MVPDs in the weeks leading up to this meeting, each and every company has told me that it would be less expensive to deploy additional boxes in their customers' homes. So if the Commission's proposal is implemented, the American people will probably end up paying for more boxes, not fewer.

*Fourth*, the proposal will hurt content creators. This proposal would allow set-top box manufacturers to profit from the content produced by others without paying those programmers at all. For example, nothing in this proposal would prevent a set-top box manufacturer from replacing the commercials in a television show with commercials sold by that manufacturer. And nothing in this proposal would prevent a set-top box manufacturer from adding commercials to a program. To be clear, we could have foreclosed those possibilities. The drafters of this *Notice* could have addressed content creators' legitimate concerns without compromising the core of this proposal. But they did not.

Minority programmers are perhaps most at risk. That's why a wide array of civil rights organizations, including the Rainbow PUSH Coalition, League of United Latin American Citizens (LULAC), Multicultural Media, Telecom and Internet Council (MMTC), and LGBT Technology Partnership, have expressed their opposition to this proposal. And that's why minority programmers are opposed to it as well.

This morning, Victor Cerda of VMe TV is with us. VMe TV is the first national Spanish-language television network in the United States to partner with public television, and it brings high-quality entertainment to Latino families. Along with representatives of other Latino organizations, Mr. Cerda signed a letter this month opposing the Commission's proposal. He said that the Commission's proposal could "lead to a new round of TV 'redlining' in which [set-top box developers] pick and choose

what networks to show and drop Latino programming or bury it deep in the channel lineup or search results.”<sup>2</sup> Nothing in this proposal addresses that concern.

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Taking a step back, this *Notice* promises a lot, but probably will not deliver much. And most of what it will deliver is likely to be bad for American consumers and content creators. None of this had to be.

Right now, we are en route to eliminating the need for a set-top box. An app can turn your iPad or Android phone into a navigation device. MVPDs have deployed these apps and are in the process of developing more advanced ones. The Commission should be encouraging these efforts.

But this proposal would do precisely the opposite. It would divert the industry’s energies away from app development and toward the long-term slog of complying with the Commission’s new regulatory scheme for unwanted hardware. And the *Notice* goes further; it actually proposes imposing a number of regulations that would discourage the development and deployment of MVPD apps. That’s not what the American people want. I’m confident that most consumers would rather eliminate the set-top box altogether than embrace a complex regulatory scheme that will require them to have *another* box in their home and won’t take effect for at least three years.

All of this might explain the deep bipartisan concern on Capitol Hill about the FCC’s approach to this issue. Senator Bill Nelson, the ranking member of the Senate Committee on Commerce, Science, and Transportation, has told us to avoid “taking any action that could ultimately threaten the vibrant market for quality video programming.”<sup>3</sup> A diverse group of 25 Democratic Representatives, led by Congressman Tony Cardenas, has counseled restraint, saying that “[i]t is important for the government . . . to not be overly prescriptive in regulation.”<sup>4</sup> Congressmen Tom Marino and Ted Deutch have warned us that this proceeding could “upset the delicate system that underlies the creation, licensing, and distribution of copyrighted television programming and potentially jeopardize efforts to prevent copyright infringement.”<sup>5</sup> And Representatives Doug Collins, Judy Chu, Lamar Smith, Adam Schiff, and Mimi Walters have expressed their concerns “over the proposal’s potentially adverse impacts on independent, minority, and religious content creators.”<sup>6</sup>

I wish that the Commission had listened to these voices rather than plowing ahead with this deeply flawed proposal. As a result, I respectfully dissent.

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<sup>2</sup> Letter from Victor Cerda, Senior Vice President, VMe TV and VMe Kids, et al. to Chairman Tom Wheeler et al., FCC, at 2 (Feb. 4, 2016).

<sup>3</sup> Letter from Senator Bill Nelson, Ranking Member of the U.S. Senate Committee on Commerce, Science, and Transportation, to the Honorable Tom Wheeler, Chairman, FCC (Feb. 12, 2016).

<sup>4</sup> Letter from Representatives Tony Cardenas et al., U.S. House of Representatives, to the Honorable Tom Wheeler, Chairman, FCC (Feb. 16, 2016).

<sup>5</sup> Letter from Representatives Tom Marino and Ted Deutch, U.S. House of Representatives, to the Honorable Tom Wheeler, Chairman, FCC, MB Docket No. 15-64 (Feb. 12, 2016).

<sup>6</sup> Letter from Representatives Doug Collins et al., U.S. House of Representatives, to Chairman Tom Wheeler et al., FCC (Feb. 16, 2016).



**DISSENTING STATEMENT OF  
COMMISSIONER MICHAEL O'RIELLY**

*Re: Expanding Consumers' Video Navigation Choices*, MB Docket No. 16-42; *Commercial Availability of Navigation Devices*, CS Docket No. 97-80.

Over the years, I have spent considerable time on the policy issues involving set top boxes. Past experience, along with surveying the current video landscape, has led me to conclude that set top boxes are a relic of the past. They are already well on their way to the fate of the video rental store. So why, in 2016, would the Commission be doing a set top box item? If the idea of an agency maintaining its regulatory control by placing outdated regulations on new technologies sounds familiar, you may be on the right track.

In recent weeks we have been subjected to a steady stream of hype about this item “unlocking the box.” Let it never be said that this Commission’s propagandists have a hard time staying on message, but this particular catchphrase only papers over the destructive results to come in the video marketplace if the Commission proceeds to adopt the rules proposed today. This proposal would be harmful, to some extent, for consumers as well as almost every type of business involved in producing or distributing video content, in many predictable ways, to say nothing of unpredicted and unpredictable effects.

It could open multichannel video programming distributor (“MVPD”) networks to serious security vulnerabilities, exposing them to potential network damage and content theft. It could strip content producers of their rights to control the distribution and presentation of their content. It could ultimately subject over-the-top (“OTT”) providers to the same regime, as I will discuss later. Worst of all, it would certainly devalue the content produced by programmers large and small, by enabling anyone capable of writing a compliant app to turn on a free stream of video content painstakingly cobbled together by an MVPD at great expense – the ultimate free-rider problem. MVPDs, broadcasters, and independent programmers alike would all lose some incentives to keep doing what they do, and some would opt for the sidelines, leaving consumers with fewer video options.

The Commission’s response to most of these concerns boils down to: “trust us, it will be OK.” Or rather, trust currently non-existent entities like “an organization that is not affiliated with MVPDs”<sup>1</sup> to come up with a security system that will protect content, and trust “open standards bodies”<sup>2</sup> to set up acceptable specifications for any app developer to interact directly with an MVPD’s network. Trust “marketplace forces”<sup>3</sup> to keep presentation standards and advertising intact. (Interesting that this is the only issue the majority believes should be left to the marketplace to decide). The item is forced onto a few detours from its prescriptive path, resigned to merely seek comment on such basic questions as “whether licensing can ensure adherence to copy control and other rights information ... and adequate content protection.” Can it even be done? We don’t know. Yet somehow, despite all of the open questions about who, how, where, and when, the majority has so much faith in the ability of outside, unformed entities to save the day that the item tentatively concludes that there should be a two-year deadline for compliance with all of the new rules. This is regulation by pure speculation.

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<sup>1</sup> *Id.* at para. 2.

<sup>2</sup> *Id.* at para. 2.

<sup>3</sup> *Id.* at para. 2.

The statutory authority on which this fantasy rests is equally as far-fetched. The section that discusses authority will long live as a testament to the level of absurdity that can be achieved in four short paragraphs when two defenseless statutes fall down a rabbit hole into a land where words have no meaning. While billed as an attempt to enhance competition in the set top box market, the item shoots miles beyond that narrow frame on the very first page, redefining statutory terms plainly referring to hardware, such as “navigation device,” “interactive communications equipment,” and “other equipment”<sup>4</sup> to mean either hardware *or* software (including apps). I don’t know how much clearer the terms “device” or “equipment” could be in their intent to reference tangible, physical hardware. If those words don’t work to restrict the Commission, are there any that ever could? And I don’t think that anyone here believes for a second that STELAR could ever have made it out of a single Congressional committee in 2014 if the members had known it would be interpreted to allow the FCC to force MVPDs to stream all of their content for free to any app developer willing to jump through a few hoops.

Getting back to the original question: why this proposal? The rationale stated is to achieve parity among competing interfaces, but at first glance anyone can see that the exact opposite is what would result. The free content flow mandated by this item would be a one way street from MVPDs to OTTs. In order to ever have parity, in order for an MVPD’s interface to ever be competitive with an OTT solution that integrates video from the MVPD and other services, OTTs would need to be bound by the same rules and sending all their content to the MVPDs for free, and indeed, to each other for free. In fact, I was told that at one of the early DSTAC meetings this idea was brought up. It was quickly dismissed as outside the scope of both STELAR and the Commission’s Title VI authority. So no one here is talking about making the one way street a two way... or are we?

Just as with a 3D movie you need to look through both the red and blue sides of the glasses to see the whole picture, to make any sense of this item it must be viewed together with its other half, the Commission’s proposal to reclassify OTTs as MVPDs. If both of these NPRMs are followed to their logical conclusions, an entire class of innovators who bear no similarities to MVPDs, except that they also offer video, will be redefined as MVPDs and subsumed into Title VI. Meanwhile, all MVPDs, whether existing or newly minted, will be forced to provide all of their content to each other under an FCC mandated scheme. And providing the “three flows” to all comers will be only the beginning of the new regulatory burdens on OTTs captured by Title VI. Who wins? Why, the FCC, of course.

This entire item is about trying to superimpose a 1990s concept on the current technology, when the basic idea itself is no longer relevant due to the innovations now available. Set top boxes, or navigation devices, effectively have been overtaken by events, or OBE. Today’s consumers want access to video on any device they own. In response, content providers are meeting this demand through numerous offerings, including over-the-top and Internet-based apps. Isn’t it telling that consumers can already watch video from multiple sources on all of their devices without a FCC mandated set top box regime? They can even stream what they are watching between devices. The video marketplace seems to be doing just fine. And yet, somehow when it comes to an MVPD subscription video service, we need to step in and regulate the interface? Nonsense.

Instead, I argue that we should embrace the future, not the past. The application economy is weakening the MVPD video package formula as we speak. In fact, it’s no longer about channels at all. Many consumers are watching programming by the individual program or even shorter segments. The

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<sup>4</sup> 47 U.S.C. § 549(a).

entire video industry is moving away from a box mentality and as such we should reconsider the need for regulation to maintain a competitive set top box marketplace.

Change is a real challenge when the goal is to maintain control over the future using the paradigms of the past. As we have seen, the pursuit of this goal can lead to policy proposals based on Orwellian statutory interpretations and substantive thin air. But given the choice between disruptive technologies and disruptive regulations, no one should have any doubt which side I'm on.