

Before The  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

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In the Matter of: )  
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)  
Cable Television Technical and ) MB Docket No. 12-217  
Operational Requirements )  
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**COMMENTS OF VERIZON**

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**I. INTRODUCTION AND SUMMARY**

The Commission correctly recognizes that many of its technical rules that apply to cable operators – including signal quality and signal leakage rules – have become outdated and largely irrelevant with the transition from analog to digital cable services. Before importing old rules onto new digital technology, however, the Commission must determine whether such regulation remains warranted. For the most part, the answer is “no,” and the Commission should decline to adopt prescriptive new regulation for digital cable systems in the absence of a demonstrated problem to be addressed. The proposals in the Notice of Proposed Rulemaking are not necessary and should not be adopted.<sup>1</sup>

First, there is no demonstrated harm. While the *Notice* purports to “facilitate the cable industry’s widespread transition from analog to digital transmission systems,”<sup>2</sup> it offers no evidence that rules such as proof-of-performance for signal quality or signal leakage limitations to restrict interference are needed to address any technical or market failure or safety issue, or to

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<sup>1</sup> *Cable Television Technical and Operational Requirements*, Notice of Proposed Rulemaking, 27 FCC Rcd 9678 (2012) (“*Notice*”).

<sup>2</sup> *Notice*, ¶ 1.

facilitate the ongoing digital transition. Indeed, as cable operators consistently have increased their levels of digital service for the past decade or more – and many, including Verizon, have moved to all-digital services – no technical rules for digital cable have been in effect over this period of time. The *Notice* does not demonstrate any need to adopt such rules now. In addition, even if signal quality issues were to arise in the digital context, the competitive nature of today’s multichannel video programming distributor (MVPD) marketplace is sufficient to keep such issues in check without regulation. If a video provider is not offering the highest quality service, its customers can and will switch. Moreover, the proposals in the *Notice* would run contrary to President Obama’s directive to agencies, and the Commission’s own commitment, to avoid unnecessary regulation.

If the Commission nevertheless decides to adopt digital cable technical rules, it should ensure that such rules are properly tailored to digital cable technology and business models and, in particular, that they accommodate Verizon’s FiOS TV network architecture and current practices. As explained in more detail below, the concerns that previously warranted these rules in the case of analog, monopoly cable operators are not present in the case of Verizon’s competitive, all-digital service delivered over its all-fiber network.

## **II. THE PROPOSED RULES ARE UNNECESSARY AND EXCESSIVELY BURDENSOME IN THE CONTEXT OF TODAY’S DIGITAL VIDEO MARKETPLACE**

The Commission is correct in finding that the analog cable technical rules are outdated.<sup>3</sup> However, it is inappropriate to adopt rules for digital cable simply because rules may have once made sense in the context of monopoly cable operators using analog technology. Instead, the Commission should examine whether such rules remain necessary in light of today’s technology

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<sup>3</sup> *See id.* ¶ 3.

and today's competitive video marketplace. Such a review will show that, even without rules in place for digital cable, there is no need to adopt proof-of-performance rules, a quality issue that, even if it were to arise, could be corrected through marketplace dynamics and consumer choice. Likewise, there has been no evidence of interference from digital cable systems that would warrant adoption of new signal leakage rules – particularly in the case of all-fiber systems like Verizon's. Moreover, if the Commission properly applies the directive in the executive order it cites, it will find that the proposed rules would be ineffective and burdensome, in addition to unnecessary. Adopting rules as proposed would directly contravene the Executive Order and the Commission's stated goal in this proceeding.

**A. There is No Demonstrated Need for New Technical Rules, Particularly in Light of the Level of Video Marketplace Competition**

The *Notice* offers no evidence that *new* cable technical rules are necessary – just that the *old* analog rules are outdated. In upgrading rules to reflect digital cable technology, the Commission – as it has in adopting past changes to cable technical rules – must first consider whether such rules are "necessary or desirable" in light of today's technology and market conditions.

In the past, the Commission has recognized that, before changing its cable technical rules, it must develop a robust record to support such changes. For example, the Commission's last significant update to its cable performance standards, in 1992,<sup>4</sup> was the result of a proceeding prompted by findings in the *1990 Cable Report*, which itself was based on a record of more than 250 comments and reply comments, extensive supplemental information, and three field

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<sup>4</sup> *Cable Television Technical and Operational Requirements; Review of the Technical and Operational Requirements of Part 76, Cable Television*, Report and Order, 7 FCC Rcd 2021 (1992) ("1992 Order"), *aff'd in part and modified in part*, Memorandum Opinion and Order, 7 FCC Rcd 8676 (1992) ("1992 Reconsideration Order").

hearings.<sup>5</sup> The *1990 Cable Report* concluded “that there is a pattern of technical problems with cable service” and found that there was “merit in the criticism of some municipal commenters that the [FCC’s] standards are outdated and inadequate to assure subscribers a high quality picture.”<sup>6</sup> The *1992 Order* relied heavily on these conclusions, as well as on a full comment cycle that included a sophisticated inter-industry proposal developed by cable and local franchising representatives over more than a year of deliberation.<sup>7</sup> Based on the extensive record – which included a specific Commission finding of signal quality problems – the Commission adopted signal quality standards for analog cable services.<sup>8</sup>

The *1992 Order* not only relied on a comprehensive record and a finding that signal quality problems were present, but also contemplated that future reviews of the rules would use a similar analysis *when necessary*. Specifically, in declining to impose signal quality standards on digital cable services in the *1992 Order*, the Commission determined that it would revise the rules only if “the adoption of technical standards ... appear[s] necessary or desirable.”<sup>9</sup> The

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<sup>5</sup> *Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service*, Report, 5 FCC Rcd 4962 (1990) (“*1990 Cable Report*”). See also *1992 Order*, ¶ 5.

<sup>6</sup> *1992 Order*, ¶ 5 (quoting *1990 Cable Report*, ¶¶ 39, 199).

<sup>7</sup> See *1992 Order*, ¶ 8; see also *Cable Television Technical and Operational Requirements; Review of the Technical and Operational Requirements of Part 76, Cable Television*, Notice of Proposed Rulemaking, 6 FCC Rcd 3673, ¶ 5 n.6 (1991) (“*1991 Cable Technical NPRM*”).

<sup>8</sup> Subsequent to the *1992 Order*, Congress passed the Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat 1460 (1992) (“*1992 Cable Act*”) (codified at 47 U.S.C. § 521 *et seq.*). The *1992 Cable Act* required that “[w]ithin one year after the date of enactment of the [1992 Cable Act], the Commission shall prescribe regulations which establish minimum technical standards relating to cable systems’ technical operation and signal quality.” 47 U.S.C. § 544(e). In November 1992, the Commission found that the previously adopted *1992 Order* satisfied this statutory requirement, once some additional expansions to the rights of franchising authorities (not relevant to this proceeding) were added. See *1992 Reconsideration Order*, ¶ 3.

<sup>9</sup> *Notice* ¶ 5 (quoting *1992 Order* ¶ 17).

Commission explicitly declined to reexamine the cable technical standards on a set schedule, instead adopting a periodic, as-needed review process, and stating that it would “closely watch the technical state of the industry and, if necessary, [would] revisit or modify these standards to ensure that a quality signal is delivered to the home.”<sup>10</sup>

Although the Commission in 1992 envisioned updating the rules only when necessary, the *Notice* does not follow this process.<sup>11</sup> Changes in technology (as discussed in the *Notice*<sup>12</sup>) may warrant an examination of whether new rules are necessary or desirable, but they do not in themselves serve as evidence that regulation is necessary to address an underlying harm that has not been evaluated in two decades. The *Notice* does not, as the Commission did in 1992, set forth any findings that new regulation is “necessary or desirable.” Indeed, the *Notice* (which might be more properly framed as a Notice of Inquiry in this respect) does not even seek information that might inform such findings or propose the creation of an advisory committee to consider whether any basis for regulation exists. If the Commission were to investigate whether any new rules are necessary or desirable, the record compiled in response to such request would demonstrate that they are not.

*Signal Quality.* With respect to signal quality requirements and proof of performance, the facts concerning today’s video marketplace and technology offer no justification for new digital rules. In 1992, the only options for video distribution were broadcast television, large dish Ku-band or C-band satellite, and cable television. Cable technology dominated the video

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<sup>10</sup> *1992 Order* ¶ 17 n.12.

<sup>11</sup> Although the *1992 Order* focused on the signal quality rules, the concept of developing a record to support “necessary or desirable” changes to the technical rules applies generally to the cable technical rules. See *1991 Cable Technical NPRM*, ¶ 35 n.26 (“We perceive *no need to amend* our present signal leakage rules.”) (emphasis added).

<sup>12</sup> See *Notice* ¶¶ 2, 5.

distribution market, and the vast majority of consumers only had access to a monopoly cable provider delivering video over an analog system. In contrast, the Commission recently has recognized the substantial growth in video competition and the introduction of innovative video offerings. Today, over 98 percent of U.S. households can choose from at least three different MVPD services, and over 40 million households have at least four choices.<sup>13</sup> Verizon has been at the forefront of increasing the competitive choices available to consumers. Since 2004, Verizon has invested billions in deploying its all-fiber network, which now passes over 17 million premises. This increase in competition has led to significant investment in networks and services from both new and incumbent MVPDs, resulting in substantial consumer benefits.<sup>14</sup>

Increased competition is also driving innovation throughout the video marketplace. Many MVPDs are delivering their content not only to TVs, but also to computer screens, game consoles, tablets, and smartphones using TV Everywhere technology.<sup>15</sup> Consumers also have more choices and options to access video programming than ever before due to the proliferation of online and over-the-top services, such as Netflix, Hulu, iTunes, Amazon, YouTube, and Vuze. Netflix alone is now available on over 900 devices and streams over one billion hours of programming each month in the U.S.<sup>16</sup> Overall, online video consumption continues to rise

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<sup>13</sup> See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Fourteenth Report, 27 FCC Rcd 8610, ¶¶ 27, 37 & ¶ 40 tbl.2 (2012) (“14<sup>th</sup> Video Report”).

<sup>14</sup> See Comments of National Cable & Telecommunications Association, MB Docket No. 12-203, at 4 (Sept. 10, 2012).

<sup>15</sup> See, e.g., 14<sup>th</sup> Video Report, ¶ 21.

<sup>16</sup> See Comments of Netflix, MB Docket No. 12-203, at 2-3 (Sept. 10, 2012).

rapidly: In October 2012, U.S. Internet users watched more than 37 billion online content videos.<sup>17</sup>

In this dynamic environment, video providers have every incentive to provide their consumers with high-quality video regardless of any signal quality standards enshrined in Commission regulation. Consumers can switch to another provider as easily as pulling out their iPad, turning to free, over-the-air broadcasting, or logging in to Netflix. Increased video choice has resulted in intensified video competition as providers attempt to differentiate their products. The Commission itself highlighted that “superior quality” was one such differentiator, in addition to price, discounts, customer service, and bundled offerings.<sup>18</sup> In order to continue to provide value to customers, and thereby prove the value of their offerings, providers cannot afford to supply a subpar video experience.

In this environment, revised signal quality standards would add little to a consumer’s experience, although such standards would add substantial unnecessary burdens and costs on providers. This is clear from the fact that, although digital cable has not been governed by the existing performance standard rules for many years now, the quantity of high-quality video available to consumers has continued to increase dramatically. Indeed, as the *Notice* notes, the digital “exception” to the performance standard requirements has grown to swallow the rule,<sup>19</sup> in part because of the clear success of the Commission’s hands-off approach to digital technology.

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<sup>17</sup> comScore, Inc., Press Release, “comScore Releases October 2012 U.S. Online Video Rankings” (Nov. 15, 2012), [http://www.comscore.com/Insights/Press\\_Releases/2012/11/comScore\\_Releases\\_October\\_2012\\_U.S.\\_Online\\_Video\\_Rankings](http://www.comscore.com/Insights/Press_Releases/2012/11/comScore_Releases_October_2012_U.S._Online_Video_Rankings) (last viewed Dec. 10, 2012).

<sup>18</sup> “MVPDs further attempt to differentiate their products by claiming their products have superior quality. For example, Verizon FiOS claims that it offers brilliant HD picture quality in almost any kind of weather: ‘Simply put, it’s the best HDTV experience you can get.’” *14<sup>th</sup> Video Report* ¶ 94.

<sup>19</sup> *See Notice* ¶¶ 2-3.

Given the lack of evidence of a problem requiring a regulatory solution and the negligible benefit of additional regulation in this area, the Commission should refrain from imposing signal quality standards on digital video providers. At the very least, as discussed in the following section, if the Commission does impose such standards, it should seek to absolutely minimize the burden on providers.

*Signal Leakage.* The *Notice* also fails to examine the real-life need to impose signal leakage requirements on digital cable or other MVPD networks. No testing has been conducted; not even anecdotal evidence is offered in the *Notice* to support the proposed rules. In contrast, prior to the 1984 adoption of the rules that largely remain in place today, the FCC commissioned a federal advisory committee to study the problem.<sup>20</sup> Yet the Commission makes no such effort here; instead, it simply assumes that the problem remains, and proposes to port its analog rules to the digital world accordingly. The Commission should follow its previous model of ensuring that the regulation is needed before acting to impose signal leakage requirements on digital cable systems for the first time.

**B. The Rules Are Inconsistent with the Commission’s Stated Intention to Implement the Executive Order**

The *Notice* states that the Commission “seek[s] to adopt clear and effective rules that reflect technological advancements in the cable television industry, and apply them to cable operators in a way that is minimally burdensome.”<sup>21</sup> It also claims to “promote[] the goals of Executive Order 13579 and the Commission’s plan adopted thereto, whereby the Commission analyzes rules that may be outmoded, ineffective, insufficient, or excessively burdensome and determines whether any such regulations should be modified, streamlined, expanded, or

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<sup>20</sup> *See id.* ¶ 6.

<sup>21</sup> *Id.* ¶ 1.

repealed.”<sup>22</sup> These statements underscore that the Commission’s proposals here are well-intended, but the proposed rules do not match up with the Commission’s stated goals. The proposed rules are not clear and likely will be ineffective. In the very best of cases, the proposed rules will not improve consumer welfare at all, and will most likely actually harm consumers by raising costs. Indeed, the *Notice* would adopt a series of rules that are outmoded, ineffective, and excessively burdensome, thereby directly controverting the goals of Executive Order 13579.

### **III. ANY PROOF OF PERFORMANCE STANDARDS FOR DIGITAL CABLE SYSTEMS MUST BE REASONABLE AND DESIGNED TO MINIMIZE BURDENS AND LEAVE UNTOUCHED INNOVATIVE TECHNOLOGIES**

Given the lack of any demonstrated benefits of mandated technical standards, if the Commission nonetheless does impose such standards, it should do everything possible to minimize the associated costs and burdens. This includes establishing minimal testing or certification regimes, streamlining any recordkeeping, and generally leaving unfettered from regulation innovative new networks such as Verizon’s all-fiber FiOS network.

The Commission has discretion to update its signal quality rules only when needed, as Congress directly acknowledged that whatever the FCC did in the early 1990s likely would not remain appropriate as technology improved.<sup>23</sup> Specifically, the statute requires the Commission to “update [signal quality] standards periodically to reflect improvements in technology,” thus contemplating the need to both evaluate the state of technology and evaluate the necessity of a change in the rules prior to taking action.<sup>24</sup> In light of this language, the Commission has wide

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<sup>22</sup> *Id.*; “Regulation and Independent Regulatory Agencies,” Executive Order No. 13579, 76 FR 41587 (2011); Federal Communications Commission, “Final Plan for Retrospective Analysis of Existing Rules,” (May 18, 2012), [http://fjallfoss.fcc.gov/edocs\\_public/attachmatch/DOC-314166A1.pdf](http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-314166A1.pdf).

<sup>23</sup> The fact that the Commission has not imposed requirements on digital cable for 20 years suggests the Commission has determined it has discretion to update these rules only as needed.

<sup>24</sup> 47 U.S.C. § 544(e).

latitude regarding what action to take; any signal quality concerns, if they exist, do not need to be addressed through the prescriptive testing and reporting that was imposed in the analog world. Instead, the Commission can meet its statutory obligation in a number of ways that are not mutually exclusive. For example, “periodic” updates could be triggered by documented problems or in response to complaints. Documented problems or complaints would indicate a need for revision to the rules. Alternatively, the Commission would be well within its authority under the statute to determine that because of “improvements in technology,” *ex ante* standards are simply not necessary for digital cable, and further regulation should await the demonstration of a problem not addressed by existing market forces and technology improvements.

**A. The Commission Cannot Easily Design Proof-of-Performance Rules for Non-QAM Architectures**

One of the problems with adoption of signal quality rules for digital technology is the lack of any existing workable standards that would apply to newer technologies, and the unlikelihood – even if such standards existed – that they would keep pace as innovations continue. It would be extremely difficult for the Commission to adopt proof-of-performance requirements for non-QAM systems that would be sufficiently clear and impose a minimal enough burden to meet the requirements of the Executive Order and the Commission’s stated goals in this proceeding.

With respect to testing of perceived visual signal quality,<sup>25</sup> Verizon is unaware of any objective metrics.<sup>26</sup> In any event, it is unlikely that any such metrics could be developed and

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<sup>25</sup> See Notice ¶ 14.

<sup>26</sup> There are some standards for measuring quality of non-QAM architectures. The Alliance for Telecommunications Industry Solutions (ATIS) IPTV Interoperability Forum (IIF) has established quality-of-service (QoS) standards for Internet Protocol (IP) TV delivered over managed IP networks. See ATIS-0800008.v002 and ATIS-0800057, available at ATIS

applied in an economical manner that would also produce meaningful results. Visual perception can vary widely based on a variety of factors, including the viewer, the displaying television, the setting, and the content type. Furthermore, testing visual signal quality would expand the scope of the Commission's proof-of-performance rules without justification. The Commission's proof-of-performance tests for the analog world stopped at the subscriber's premises; the point was to ensure that the cable provider delivered a sufficiently powerful and high-quality signal to the subscriber's premises. Visual quality would necessarily involve customer premises equipment. But, customer premises equipment, including inside wiring, has not been a factor in the past proof-of-performance regime, and should remain a non-factor. For similar reasons, tests of set-top boxes are unnecessary and must fall outside the scope of proof-of-performance testing.

Judging non-QAM providers based on a self-submitted performance plan, as the *Notice* suggests, might be less harmful than other approaches, but would be equally useless.<sup>27</sup> Such an approach would essentially be evaluating companies on their ability to conform to their own internal standards. As noted above, providers have a strong incentive to provide high-quality video. So many, if not most, providers are likely to have internal procedures in place to ensure quality. Requiring companies to comply with the internal standards with which they have already been complying, and to file documents with the Commission demonstrating such compliance, would only add unnecessary paperwork without producing any customer value. It also would hinder MVPD innovation, since every new technology would require a new component in the submitted proof-of-performance plan. If the Commission does adopt a self-

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Document Center, <http://www.atis.org/docstore/default.aspx>. However, the ATIS standards focus on achieving interoperability; they are not primarily intended to ensure quality of service.

<sup>27</sup> See *Notice* ¶ 15.

submitted performance plan approach, MVPDs should be able to simply certify compliance, as discussed below.

In any event, if it adopts signal quality rules in this proceeding, the Commission should make clear that an MVPD is not responsible for *improving* the quality of a video stream provided to it by a third-party programmer. MVPDs should be held responsible only for delivering the signals they receive to the customer without material signal degradation. The Commission cannot reasonably expect MVPDs to deliver to customers a better quality signal than they have received.

**B. The Proposed Testing Regime is Unworkable for FiOS or Other Systems That Do Not Correspond to Traditional Cable Architecture**

The Commission's proposal to have a test point in every franchise does not make sense for FiOS network architecture. As the *Notice* notes, Verizon does not use local headends for its FiOS TV service, but instead uses region-wide, central office facilities known as VHOs.<sup>28</sup> Each such central office typically is the origin for video signals for a number of franchise areas. All necessary signal quality tests could be executed at the VHO, if required. Given Verizon's technology, requiring a franchise-by-franchise test would be redundant and wasteful, and would reveal no additional data about the signal quality emanating from the central office. More generally, rather than imposing a specific testing regime, assuming the Commission could identify appropriate standards, the Commission should permit operators to self-certify compliance, and review any need for a testing regime only if consumer complaints regarding video quality demonstrate significant concerns. Such certifications would obligate the providers to comply with the rules but would simplify the burden for the Commission and industry.

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<sup>28</sup> See *id.* ¶ 20.

### **C. Providers Should Continue to Have Flexibility for Any Recordkeeping Requirements**

The *Notice* proposes to impose the same proof-of-performance recordkeeping requirements on digital cable systems that it imposed on analog cable operators,<sup>29</sup> but along with new technologies, business operations have changed dramatically and warrant a new approach. Many operators who have local or regional offices nonetheless use an internal network to store files in a central location accessible over the public internet or a private network, and nothing should upset that sensible approach in the case of any new recordkeeping requirements. The Commission should be clear that, so long as the public and the agency can access the relevant records, MPVDs should have flexibility to handle recordkeeping in the manner they find most efficient. Specifically, it would be onerous to require each office to keep individual copies of proof-of-performance test results on site. The Commission should clarify that companies may store records in a single central location, as long as access to those records (via the Internet or a private company network) is provided from the operator's local business office.<sup>30</sup>

### **IV. THERE IS NO BASIS TO REGULATE DIGITAL CABLE SIGNAL LEAKAGE, AND THE PROPOSED SIGNAL LEAKAGE RULES WOULD BE INEFFECTIVE AS APPLIED TO VERIZON'S FIOS NETWORK**

As with signal quality standards, there also is no evidence demonstrating the need for signal leakage rules in the digital context. If the Commission nevertheless decides to adopt such rules, it should be careful to do so in a way that takes into account the varying technologies currently used to provide digital cable service and allows the continued use of current practices for entities such as Verizon. As the *Notice* explains, the Commission first looked at the issue of

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<sup>29</sup> *See id.* ¶ 22.

<sup>30</sup> If the Commission adopts new proof-of-performance recordkeeping rules, *see Notice* ¶ 22, Verizon does not object to the requirement to maintain proof-of-performance test results in an existing public inspection file.

signal leakage as a component of overall system performance, signal quality, and potential interference in the 1970s.<sup>31</sup> The Commission adopted initial rules and convened a federal advisory committee to further examine the issue.<sup>32</sup> The signal leakage rules established in the mid-1980s on the recommendation of the federal advisory committee generally have remained in effect since that time.<sup>33</sup> The *Notice* proposes that because the existing rules apply only to analog cable systems, they should be updated to reflect digital operations.<sup>34</sup> It concludes correctly that the channel frequency offset provisions in the existing rules are unnecessary for digital signals,<sup>35</sup> and also notes improvements in digital receiver technology over 1980s receiver technology.<sup>36</sup> However, the *Notice* fails to examine more broadly the basic question of whether any of the signal leakage requirements remain necessary and whether there is any existing concern in the case of digital cable systems that warrants new regulation.

Rather than assuming that the same risks exist with digital cable that prompted adoption of the signal leakage rules in the 1980s, the Commission should start from scratch and evaluate the likelihood of any issues arising. For example, the *Notice* explains that the “vast majority of coaxial cable systems maintain an [Aeronautical Frequency Notification (AFN)] on file with the Commission,” and that the proposed rule will only affect digital system operators in the aeronautical band that previously were not required to notify the Commission, as well as any operators who withdrew their AFNs upon transitioning to all-digital systems.<sup>37</sup> The *Notice* also

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<sup>31</sup> *See id.* ¶ 26.

<sup>32</sup> *See 1992 Cable Technical NPRM*, ¶ 35 n.26.

<sup>33</sup> *See Notice* ¶ 28.

<sup>34</sup> *See id.*

<sup>35</sup> *See id.* ¶ 32.

<sup>36</sup> *See id.* ¶ 33.

<sup>37</sup> *Id.* ¶ 31.

proposes to adjust general and cumulative signal leakage levels to reflect digital technology.<sup>38</sup> However, the *Notice* does not offer any examples of interference caused by digital systems – and particularly all-digital systems like Verizon’s – that would warrant these new and modified requirements. In contrast, when it adopted the current signal leakage rules in 1984, the Commission described five specific instances of interference between cable systems and aeronautical frequencies, “clear[ly] show[ing] the potential dangers that exist[ed] from uncontrolled cable signal leakage” at that time.<sup>39</sup>

Although the existing rules do not apply to Verizon’s FiOS TV system,<sup>40</sup> Verizon has taken care to avoid any interference with any navigational, emergency, or aeronautic frequencies, and there are no cases cited in the *Notice* of interference from Verizon’s system or other all-fiber networks. This is in large part because such systems have a very limited capacity for leakage, and generally do not include signals in the frequencies and at power levels that could cause any concern. FiOS TV is delivered over a fiber optic network that delivers signals to customer premises over fiber optic cables using optical wavelengths. Such a network would not represent any threat of interference, because fiber optic cables do not use RF frequencies.<sup>41</sup> Therefore, the

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<sup>38</sup> *See id.* ¶¶ 34-35.

<sup>39</sup> *Amendment of Part 76 of the Commission’s Rules to Add Frequency Channelling Requirements and Restrictions and to Require Monitoring for Signal Leakage from Cable Television Systems*, Second Report and Order, 99 FCC 2d 512, ¶ 16 (1984); *see also id.*, ¶¶ 10-16 (describing five cases of leakage).

<sup>40</sup> When FiOS cable television service was originally launched, it used analog transmission technology and was in compliance with the analog signal leakage rules. In September 2008, Verizon completed a full transition to digital cable technologies throughout its entire FiOS cable television system.

<sup>41</sup> *See Amendment of Part 76 of the Commission’s Rules to Extend Interference Protection to the Marine and Aeronautical Distress and Safety Frequency 406.025 MHz*, Report and Order, 19 FCC Rcd 7244, ¶ 8 (2004) (“Fiber optic cables do not use radio frequencies (RF), and thus, do not cause interference to RF receivers.”).

distribution plant of Verizon's all-fiber network poses no risk of harmful signal leakage, and there is no basis to require signal leakage testing of the network.

At the customer premise, Verizon does use an optical network terminal (ONT) to convert the optical wavelengths into electrical signals that are distributed over the customer's inside wiring set-top boxes, television sets, or other consumer equipment. Here too, however, the risks of harmful signal leakage are minimal, and there is no concern justifying burdensome testing. This is because the ONT has been designed and built in a manner that operates at a low power level – below the thresholds that would trigger testing under current signal leakage testing standards. Therefore, whether at the ONT or as the signal is distributed over the customer's inside wire, the risk of harmful signal leakage is minimal and the case for new regulation is nonexistent.

## V. CONCLUSION

For the foregoing reasons, the Commission should refrain from adopting the proposals in the *Notice*.

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