

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

---

*In the Matter of* )  
 )  
 )  
Annual Assessment of the Status of ) CS Docket No. 00-132  
Competition in the Market for the Delivery )  
of Video Programming )  
 )  

---

To: The Commission

**COMMENTS OF AMERICAN BROADBAND, INC.**

Edward T. Holleran, Jr.  
Donna Garofano  
AMERICAN BROADBAND, INC.  
25 Burlington Mall Road  
Burlington, MA 01803  
(781) 505-9820

John Nakahata  
Michael Nilsson  
HARRIS, WILTSHIRE & GRANNIS LLP  
1200 Eighteenth Street, N.W.  
Washington, DC 20036  
(202) 730-1300  
*Counsel for American Broadband, Inc.*

September 8, 2000

## SUMMARY

American Broadband is a new company that is building state-of-the-art, multi-service broadband networks in midsize markets throughout the eastern United States. American Broadband is a pro-competitive triple threat: it will function in the video market as an alternative to big cable, in the telephone market as an alternative to the big telephone company, and in the high-speed data market as an alternative to the cable/telephone high-speed duopoly. And unlike many other new entrants, American Broadband will bring choice, control, and convenience to the residential and small business consumer – precisely those markets in which competition has been the slowest to emerge.

American Broadband is one of the first builders of truly converged, digital broadband networks. It starts neither as a cable network nor as a telephone network. As a new entrant, it is able to build a new network from scratch, designed to deliver the highest quality digital video and voice service, and the fastest Internet connections. When fully constructed, American Broadband's networks will be able to provide over 200 channels of digital video service, high quality voice telephone service, multimegabit *two-way* Internet data services, and a host of new services that cannot be provided using yesterday's obsolete technologies.

Because American Broadband and other broadband service providers are entering into competition with established incumbents, these advanced residential and small business networks can only be built if they can be used to provide a full suite of video, voice and high-speed data service. For these new broadband service providers, barriers to entry in each category of service – cable, voice, and data services – can become

barriers to entry with respect to *all* of these services. Thus, a municipality's failure to grant a competitive cable franchise (or failure to grant more than one competitive cable franchise) bars not just multichannel video competition, but also competition in telecommunications and information services. Similarly, if the Commission fails to extend the prohibition on exclusivity in its program access rules after 2002, it could stymie not just emerging multichannel video competition, but the best opportunity for residential competition to the incumbent telephone companies.

By the same token, barriers to telephone competition or premature regulatory impediments to the development of alternative broadband high-speed Internet service will also block the emergence of video competition. Premature over-regulation of high-speed data services provided over hybrid-fiber coaxial networks would chill investment and deprive new entrepreneurs like American Broadband of the freedom they need to develop business models that will sustain the growth of these new competitive broadband "last mile" networks. The Commission can and should take account of these interrelated competitive benefits as it considers how best to promote residential video, telephone and broadband competition.

## TABLE OF CONTENTS

I.	Introduction .....	1
II.	The Competitive Benefits of Multi-Service Broadband Networks .....	3
III.	Barriers to Entry in the Multiple-Service Environment .....	5
	A. Cable Franchising .....	5
	B. Access to Programming .....	7
	C. Cable Modem Services .....	10
IV.	Conclusion.....	12

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

	)	
<i>In the Matter of</i>	)	
	)	
Annual Assessment of the Status of	)	CS Docket No. 00-132
Competition in the Market for the Delivery	)	
of Video Programming	)	
	)	

To: The Commission

**COMMENTS OF AMERICAN BROADBAND, INC.**

American Broadband, Inc. (“American Broadband”) hereby submits its comments in the above-captioned proceeding.<sup>1</sup> As a new builder of state-of-the-art, multi-service broadband networks, American Broadband appreciates this opportunity to offer a new perspective on several of the issues facing the Commission.

**I. INTRODUCTION**

American Broadband is a Massachusetts company that is committed to building and operating multi-service, state-of-the-art broadband networks to deliver competitive, convergent communications, entertainment and information services. And unlike many other new entrants, American Broadband will bring choice, control and convenience to the residential and small business consumer – precisely those markets in which

---

<sup>1</sup> See Notice of Inquiry (rel. Aug. 1, 2000); see also *Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming*, 15 FCC Rcd. 978 (2000) (“1999 Video Competition Report”).

competition has been the slowest to emerge. American Broadband has already been granted cable franchises covering eighty percent of Rhode Island and a franchise in Baltimore County, Maryland (contingent upon a reaching a mutually acceptable franchise agreement), and plans to apply to be an authorized CLEC in both areas. American Broadband is also certified as an Open Video System (“OVS”) provider in Delaware, Florida, Georgia, Kentucky, Maryland, Michigan, New York, North Carolina, Ohio, Pennsylvania and Virginia, and is seeking video franchises in many areas.<sup>2</sup>

American Broadband is dedicated to solving the problems that consumers have with incumbent communications services. Consumers want *choice, control, and convenience* – and American Broadband will give it to them. With respect to video service, American Broadband will take advantage of digital technology to give consumers greater choice and control over the suite of programming that *they* want. It will also offer video-on-demand, interactive television, and premium sports packages. Even using today’s DOCSIS cable modem terminating systems (“CMTS”), American Broadband will offer up to 10 Mbps of *bi-directional* data capability – enough to support web hosting for home offices. American Broadband’s network will have the capacity to deliver, as cable modem technology improves, upstream and downstream data transmission capability of over 100 Mbps. (Moreover, American Broadband will, in the future, offer “dynamic bandwidth provisioning,” under which customers will always have enough bandwidth.) With respect to voice service, American Broadband’s VoIP offering will provide consumers all the features they expect through the use of a cutting-edge,

---

<sup>2</sup> See *American Broadband, Inc.*, 15 FCC Rcd. 8946 (Cab. Serv. Bur. 2000). American Broadband is not currently seeking to provide service under these OVS licenses, preferring instead to seek cable franchises.

cost-efficient technology. And, in connection with all of these services, American Broadband will bring new thinking to the marketplace – such as the use of a customer service website that can be accessed from a set-top box to allow customers to self-provision their service, review and pay bills, and schedule service calls.

## **II. THE COMPETITIVE BENEFITS OF MULTI-SERVICE BROADBAND NETWORKS**

Congress and the Commission have always looked upon the development of parallel competing communications networks as the competitive marketplace that will eliminate the need for substantial regulation. The usual assumption was that telephone companies would compete with cable companies and cable companies would compete with telephone companies. But that particular vision has been slow to develop. In fact, those telephone companies that began experiments with video competition have largely shut down their efforts.<sup>3</sup>

Cable-provided telephony has also been long promised, but slow to arrive. Today, although some cable operators have made inroads in providing voice telephone services, the nation's largest cable operator, AT&T, is by all reports substantially behind in its efforts to introduce competitive residential telephone service over its cable networks.<sup>4</sup>

---

<sup>3</sup> See, e.g., *SNET Wants Out of Cable*, Multichannel News, Aug. 14, 2000 (reporting that SNET has asked the Connecticut DPUC to discontinue its cable television business); *Ness Unhappy With Telcos*, Multichannel News, July 12, 2000, (reporting that GTE and SBC are considering whether to sell their cable systems); *GTE Hangs For Sale Sign Out on Cable Systems*, Multichannel News, July 3, 2000 (reporting that, as part of an "exodus of big regional telcos from cable," that GTE is looking to sell its cable assets); *SBC Chief Unsure about ANM*, Multichannel News, March 6, 2000 (reporting that SBC is unsure of the fate of Ameritech New Media's cable systems).

<sup>4</sup> See, e.g., *AT&T Dials Up No. 300,000*, Multichannel Online, Sept. 6, 2000 (noting that "AT&T Broadband has been under fire of late because of some doubt that it would meet its stated digital-phone numbers").

American Broadband and other similar companies offer a third alternative. Although only a few competitors have built new networks to compete with incumbent cable operators, this will now change – in chief, because of the development of high-speed data and IP telephony. Previously, new hybrid fiber coaxial networks could offer only video services over their networks, and revenues from video alone have proved insufficient to sustain competitive entry. But new entrants such as American Broadband will be able to provide video, voice, and data over a single network, and be able to leapfrog an out-of-date, analog technology to truly integrate digital video, voice, and high-speed data service that will optimize the use and availability of bandwidth for end-user consumers. The combination of revenue streams made possible by these new technologies will allow, for the first time, terrestrial competition to the cable monopolies, local telephone companies, and the cable/telephone duopoly over high-speed residential data service.

The emergence of alternative “third wire” networks is a positive development of competition, and one that the Commission should take care to encourage. As the Commission’s experience in wireless telecommunications markets shows, when there are only two network providers (even if there are many resellers) prices can settle into a relatively stable duopoly, with consumers forced to pay higher prices and getting fewer innovative new services. Without companies like American Broadband, the Commission will remain dependent upon the incumbent cable companies and the incumbent telephone companies as the main sources of the “two wires” to the home. In every community that American Broadband enters, however, it will provide a third wire, one that disrupts any

possibility of a duopoly and that secures a more competitive, converged broadband future for consumers.

### **III. BARRIERS TO ENTRY IN THE MULTIPLE-SERVICE ENVIRONMENT**

The ability to offer multiple services is the key to achieving competition in the MVPD market. But this ability also means that barriers to entry in each category of service – cable, voice, and data services – can become barriers to entry with respect to *all* of these services. Where yesterday’s cable overbuilder might not have been concerned about, for example, telephone numbering, such issues can serve as serious impediments to entry and growth for companies such as American Broadband.<sup>5</sup> As a general matter, then, American Broadband urges the Commission to focus its attention not merely on those issues thought of as “traditional” video issues, but on barriers to entry in all market segments. At the same time, it would like to offer its observations on several specific barriers to competition that, new as it is, it has already encountered.

#### **A. Cable Franchising**

As a new company seeking to offer video service, American Broadband is in the process of seeking cable franchises from franchising authorities.<sup>6</sup> It has been successful thus far in two areas, Rhode Island and Baltimore County, Maryland, and is optimistic that it can obtain franchises in many more areas. Both of these areas took an enlightened,

---

<sup>5</sup> See, e.g., *Numbering Resource Optimization*, Comments of Cox Communications, Inc. in CC Dkt. 99-200 (filed May 19, 2000).

<sup>6</sup> Indeed, since a recent Fifth Circuit decision, new entrants in the video business cannot escape local franchising requirements by becoming Open Video System operators. See *City of Dallas v. FCC*, 165 F.3d 341, 347 (5th Cir. 1999) (holding that, while the 1996 Act does not require OVS operators to obtain local franchises as must cable operators, it also does not *prevent* localities themselves from imposing franchising requirements on OVS operators).

pro-competitive approach to franchising, recognizing that competition will benefit the residential and small business consumers of their community. As a result of its experience, American Broadband can offer some general observations, and can attest that, while many localities are wildly enthusiastic about allowing competition to the cable incumbents, others have been less so, or have sought to apply old, out-of-date monopoly franchising models to franchise agreements with new entrants.

The local cable franchise should not be, and legally cannot be, a vehicle for a local government to engage in “managed competition” or to pick winners and losers. It is now beyond question as a matter of federal policy that it is the marketplace that does the best job of shaking out winners and losers.<sup>7</sup> This policy favoring competition is specifically recognized in the Communications Act. First, Section 621(a) of the Act prohibits franchising authorities from “unreasonably refus[ing] to award an additional competitive franchise.”<sup>8</sup> In addition, because companies like American Broadband will provide telecommunications services – and can only financially do so if also granted a cable franchise – failure to grant additional video franchises also violates Section 253 of

---

<sup>7</sup> See, e.g., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, 14 FCC Rcd. 2398, 2402 (1999) (“*Section 706 Report to Congress*”) (“Our role is not to pick winners and losers, or to select the best technology to meet consumer demand. We intend to rely as much as possible on free markets and private enterprise.”); “The Unregulation of the Internet: Laying a Competitive Course for the Future,” Remarks by Chairman William E. Kennard to the Federal Communications Bar California Chapter, San Francisco, CA (July 20, 1999), available at <http://www.fcc.gov/commissioners/kennard/speeches.html> (“The fertile fields of innovation across the communications sector and around the country are blooming because from the get-go we have taken a deregulatory, competitive approach to our communications structure—especially the Internet.”).

<sup>8</sup> 47 U.S.C. § 541(a)(1). The Conference Report accompanying this Act makes clear that it prohibits “franchise authorities from unreasonably refusing to award additional *franchises*.” H. Rept. 102-862.

the Act by creating a barrier to entry in telecommunications.<sup>9</sup> The Communications Act rightly gives an important role to franchising authorities, but that role cannot frustrate fulfillment of the Act’s “pro-competitive, deregulatory national policy framework.”<sup>10</sup>

The Commission should work with local franchising authorities to ensure that applications for additional franchises are handled expeditiously, and with minimal franchising burdens. Delay in a competitive marketplace is the functional equivalent to denial of a franchise. A set of guidelines or “best practices” for local franchising authorities would help to guide franchising authorities as they adapt to a competitive marketplace. In some cases, however, it may be necessary for the Commission and/or the courts to step in to require that franchises be granted consistent with the requirements of Sections 621 and 253.

## **B. Access to Programming**

One of the most important barriers to entry for new entrants such as American Broadband is the one that has plagued video competitors for years – access to cable programming. Quite simply, without popular programming, no video provider can compete. As the Commission noted in its Notice of Inquiry, it must soon decide whether to extend the prohibition on exclusivity contained in the program access rules.<sup>11</sup> The Commission should promptly begin proceedings to do so.

---

<sup>9</sup> This section provides: “No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.” 47 U.S.C. § 253(a).

<sup>10</sup> H.R. Rep. No. 104-458, at 1 (Conference Report for 1996 Telecommunications Act).

<sup>11</sup> See Notice of Inquiry at ¶ 7.

There is no question that, if unchecked by regulation, vertically-integrated cable companies could use access to programming to throttle still-emerging competition. Until there are multiple networks available to deliver a broad range of video programming, including local broadcast programming, it is too soon to relax the program access rules that have helped to create what little multichannel video programming competition exists. And the competitive stakes no longer just run to the MVPD marketplace – failure to extend the program access rules’ prohibition on exclusivity could also stymie telephone and high-speed data competition.

Congress originally directed the Commission to promulgate program access rules because “potential competitors to incumbent cable operators often face unfair hurdles when attempting to gain access to the programming they need in order to provide a viable and competitive multichannel alternative to the American public.”<sup>12</sup> These “unfair hurdles” resulted from the “imbalance of power . . . between incumbent cable operators and their multichannel competitors.”<sup>13</sup> Until there is competition, this imbalance will exist, and program access rules will remain necessary.

While competition is coming, it has not yet arrived. This observation has been confirmed repeatedly, by a number of different parties. Indeed, a recent study by the General Accounting Office suggests that even the recent success of Direct Broadcast Satellite operators has not brought about a level of competition from which one might conclude that program access rules are no longer required. Measuring competition in terms of cable pricing, the GAO concluded that, “even though DBS increased the number

---

<sup>12</sup> *Implementation of Sections 12 and 19 of the Cable Television Consumer Protection and Competition Act of 1992*, 8 FCC Rcd. 3359, 3362 (1993).

<sup>13</sup> *Id.*, 8 FCC Rcd. at 3366.

of substitutes available in the subscription video market, DBS did not exert significant pricing pressure on cable companies to reduce rates at that time.”<sup>14</sup> (Indeed, the study found that “greater DBS penetration was statistically associated with somewhat higher cable rates.”<sup>15</sup>) By all accounts, then, DBS is still a complement to cable, and the jury is out on whether it can ever become a full substitute.

By contrast, the GAO found that, in those still-few cases “when a second cable system or other ground-based competitor . . . is operating in part or all of a franchise area, cable rates were lower.”<sup>16</sup> American Broadband has staked its reputation (and its investors’ money) on the validity of the GAO’s findings – namely, that it is broadband service providers that will bring competition and lower prices to the MVPD market. But that competition is not yet in place, and must be given a chance to succeed. The surest way to prevent competition would be for the Commission to allow incumbent cable operators to choke off the supply of programming.<sup>17</sup>

And there should be no doubt that cable operators, if allowed to, will attempt to deny their competitors access to the most popular programming, and particularly to regional sports programming.<sup>18</sup> Indeed, just last year, competitors alleged that cable

---

<sup>14</sup> Telecommunications: The Effect of Competition from Satellite Providers on Cable Rates, GAO/RCED-00-164, at 4 (General Accounting Office, rel. July 2000).

<sup>15</sup> *Id.* at 6.

<sup>16</sup> *Id.* at 4; *see also id.* at 7 (“The presence of a nonsatellite competitor – such as another cable company or a wireless cable operator – was associated with lower cable rates. In particular, we found that when such a competitor was operating in part or all of a franchise area, cable rates were, on average, 10 percent lower than in franchise areas with no ground-based competitors.”).

<sup>17</sup> The Commission’s current ability to grant public interest waivers protects cable operators’ legitimate competitive interests without allowing programming to stifle entry. *See* 47 C.F.R. § 76.1002(c)(4).

<sup>18</sup> Competitive video providers have long emphasized the importance of regional sports programming. *See, e.g., 1999 Video Competition Report* at ¶¶ 184-186.

operators increasingly engaged in exclusive contracts with unaffiliated networks,<sup>19</sup> deliberately moved regional sports programming to terrestrial distribution to evade the program access rules,<sup>20</sup> and used their market power to obtain discriminatorily-low prices for popular programming.<sup>21</sup> American Broadband is concerned that it will soon be subject to similar conduct, especially in light of Comcast's recent purchase of Home Team Sports, the regional sports network serving Baltimore County.

Given that such practices occur even now, American Broadband respectfully urges the Commission not to "tempt fate" by allowing one of the few protections that exist to sunset. If anything, the Commission should ensure the continued effectiveness of the program access rules by updating them to cover programming that, due to advances in fiber optic technology that were not foreseen when the rules were first drafted, is now being migrated from satellite to terrestrial distribution.<sup>22</sup>

### **C. Cable Modem Services**

The Commission will soon be considering whether to require third-party access to cable operators' data facilities in light of the decision in *AT&T Corp. v. City of Portland*.<sup>23</sup> American Broadband urges the Commission to allow competitive cable

---

<sup>19</sup> See Comments of Ameritech New Media, Inc. in CS Dkt. 99-230 at 5-15 (filed Aug. 4, 1999) ("Ameritech 1999 Comments").

<sup>20</sup> See, e.g., *id.* at 16-20; Comments of DirecTV, Inc. in CS Dkt. 99-230 at 2-3, 10-11 (filed Aug. 4, 1999) ("DirecTV 1999 Comments"); see also *Ameritech New Media, Inc.*, 13 FCC Rcd. 15822, 15856 (1998) (refusing to find apply program access rules to terrestrial programming because "[t]he record developed in this proceeding fails to establish that the conduct complained of . . . is significant and causing demonstrative competitive harm at this time.").

<sup>21</sup> See, e.g., Ameritech 1999 Comments at 13-15; Comments of EchoStar Satellite Corporation in CS Dkt. 99-230 at 6 (filed Aug. 4, 1999) ("EchoStar 1999 Comments").

<sup>22</sup> See *Ameritech New Media, Inc.*, 13 FCC Rcd. at 15856-7.

<sup>23</sup> 216 F.3d 871 (9th Cir. 2000).

operators flexibility in implementing any policies in this area. As discussed above, the ability to provide high-speed data is a critical part – perhaps *the* critical part – of the economics for new networks such as that of American Broadband. American Broadband is committed to providing its customers with greater choice, convenience and control in high-speed data services as well, and will likely provide its customers with a choice of high-speed Internet service providers. But the business models for high-speed Internet service are not yet fully developed (especially with respect to the possibility of multiple ISPs), and American Broadband will need the flexibility to experiment with various business models so that it can provide consumer choice while recouping its investment in its network facilities. Both Section 706 of the Telecommunications Act of 1996 and Section 10 of the Communications Act of 1934 provide ample authority to ensure that competitive broadband networks are given the opportunity to flourish.<sup>24</sup>

As a technical matter, cable operators cannot simultaneously carry more than three to four ISPs using today’s DOCSIS CMTS without engineering practices that waste bandwidth and prevent the rollout of new services. This means that, much as they may wish to, companies like American Broadband may not be able today to carry each and every ISP that requests carriage. Direct connections with any and all providers is a technological “pipe dream,” not a feasible reality. The technology to permit carrying of more than three to four ISPs is being developed, however, and may be available in the future.

---

<sup>24</sup> See 47 U.S.C. § 157(a) nt. (directing the Commission to “encourage the deployment” of advanced services through, among other actions, regulatory forbearance); 47 U.S.C. § 160(a) (granting the Commission authority to forbear from regulations under certain circumstances).

Just as significant, the business models for high-speed broadband Internet service are not yet fully developed. A company like American Broadband needs to be able to have flexibility in how it structures business deals with Internet service and Internet content providers. Business models for cable television itself have been continually evolving over decades, and have developed a wide range of subscriber fees, programming fees, and sales commissions. It is reasonable to expect that the business model for high-speed data will yet require much experimentation and business flexibility in order to develop fully. It would be premature to lock-in significant regulatory constraints before those models have had time to evolve.

Make no mistake: American Broadband is committed to customer choice. Indeed, its very presence will ensure customer choice in a number of markets. But American Broadband needs flexibility in structuring business arrangements with ISPs if it wishes to compete with the cable/telephone high-speed data duopolies. And the Commission, in its zeal to promote competition, must be careful not to eliminate the very flexibility that will make competition possible.

#### **IV. CONCLUSION**

American Broadband and companies like it promise to bring competition to the video, telephone, and Internet markets – the sort of competition that the American consumer has long been waiting for. These comments reflect American Broadband’s optimism that the time is now ripe for “third wire” competition, but also its concern that the wrong regulatory environment could delay or even prevent competition from taking hold. In particular, these comments reflect American Broadband’s view that, in a converged world, competitive issues are now interrelated across different services.

American Broadband therefore urges the Commission to take account of this interrelation as it considers how best to encourage competition in all communications markets.

Respectfully submitted,

/s/ John Nakahata

Edward T. Holleran, Jr.  
Donna Garofano  
AMERICAN BROADBAND, INC.  
25 Burlington Mall Road  
Burlington, MA 01803  
(781) 505-9820

John Nakahata  
Michael Nilsson  
HARRIS, WILTSHIRE & GRANNIS LLP  
1200 Eighteenth Street, N.W.  
Washington, DC 20036  
(202) 730-1300  
*Counsel for American Broadband, Inc.*

September 8, 2000

## CERTIFICATE OF SERVICE

I, Michael Nilsson, do hereby certify that copies of the foregoing pleading have been sent by hand delivery, on this 8th day of September, 2000, to the following:

Chairman William E. Kennard  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Commissioner Susan Ness  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Commissioner Harold Furchtgott-Roth  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Commissioner Michael K. Powell  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Commissioner Gloria Tristani  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Dorothy Attwood  
Legal Advisor to the Chairman  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Deborah A. Lathen  
Chief  
Cable Services Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

William H. Johnson  
Deputy Chief  
Cable Services Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Chris Wright  
General Counsel  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Jon Nechterlein  
Deputy General Counsel  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

John Wong  
Cable Services Bureau  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Dale Hatfield  
Chief  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Rebecca Dorch  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

John Norton  
Cable Services Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

Robert Pepper  
Office of Plans and Policy  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

/s/ Michael Nilsson

Michael Nilsson