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III. COMCAST SOUGHT TO ACCOMMODATE ZOOM'S CONCERNS REGARDING P&E TESTING, BUT CANNOT AGREE TO "APPROVE" ITS MODEM WITHOUT ANY P&E TESTING.

A. Comcast Made Good Faith Efforts To Accommodate Zoom's Concerns Regarding Testing of Zoom's DOCSIS 2.0 Modem.

30. On August 31, 2010, Zoom first approached Comcast about testing its new DOCSIS 2.0 modem for certification.⁴⁴ Comcast was reluctant to do so because network technology has outpaced the DOCSIS 2.0 modem Zoom proposed for certification. Comcast had already transitioned approximately 85% of its networks to a DOCSIS 3.0 platform and, consistent with the objectives of this Commission concerning increasing broadband Internet speeds in the United States, that transition enables Comcast's customers to subscribe to service tiers that offer download speeds of over 100 Mbps. Moreover, as Comcast has upgraded and expanded its network, it regularly has increased the speeds available to its customers on its most popular speed tiers, generally at no additional charge.

31. As a result, in the very near future, DOCSIS 2.0 devices will only be capable of delivering consumers the speeds available on two of Comcast's current tiers of service: (1) the Economy tier, with provisioned download speeds up to 1.5 Mbps; and (2) the Performance tier, with provisioned download speeds up to 12 Mbps. DOCSIS 2.0 devices cannot deliver Comcast's faster service tiers, nor would they be able to deliver the speeds the National Broadband Plan has set as goals: "actual download speeds of 50 Mbps and actual upload speeds of 20 Mbps" by 2015 and "actual download speeds of at least 100 [Mbps] and actual upload

⁴⁴ See E-mail from Hume Vance, Zoom, to Earle Iveson, Comcast (Aug. 31, 2010, 4:11 p.m.) (attached as Exhibit 12) ("Our D2 CM will go end of life next year and we are looking at a new model to replace it. This would be a retail product, like our other CMs.").

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speeds of at least 50 [Mbps]" by 2020.⁴⁵ To receive these speeds, customers will need DOCSIS 3.0 devices. In order to minimize consumer frustration about having DOCSIS devices they purchase at retail not be able to deliver the Internet speeds to which they subscribe, Comcast decided earlier this year that it would focus on testing and certifying DOCSIS 3.0 devices.⁴⁶

32. Nevertheless, Comcast offered to accommodate Zoom's request and informed Zoom on October 6, 2010, that it would be willing to test and certify Zoom's DOCSIS 2.0 modem,⁴⁷ and Zoom indicated that it "will go forward with that one DOCSIS 2.0 cable modem product right away."⁴⁸ However, Comcast explained that, for the reasons stated above, it would *not* commit at that time to test and certify *any future DOCSIS 2.0 modems* that might at some point be manufactured by Zoom.⁴⁹ Given the changing nature of Comcast's network and the marketplace for broadband Internet services, Comcast believed it would be unwise to commit to approving still-hypothetical devices too far in advance of their intended availability.

⁴⁵ *Connecting America: The National Broadband Plan* 9 (Mar. 16, 2010) ("National Broadband Plan"), available at <http://download.broadband.gov/plan/national-broadband-plan.pdf>.

⁴⁶ For customers who lease DOCSIS devices, Comcast makes available updated devices at no additional charge if the leased device is not capable of supporting a speed increase to the customer's service.

⁴⁷ See Letter from Jeffrey E. Smith, Comcast, to Frank Manning, Zoom 2 (Oct. 6, 2010) (attached as Exhibit 13).

⁴⁸ E-mail from Norman Baker, Comcast, to Frank Manning et al., Zoom (Oct. 12, 2010, 5:49 p.m.) (attached as Exhibit 14, at 4) (reflecting an e-mail from Frank Manning to Jeff Smith (Oct. 7, 2010, 2:43 p.m.)).

⁴⁹ See Ex. 14, at 5 (reflecting an e-mail from Jeff Smith, Comcast, to Frank Manning, Zoom (Oct. 7, 2010, 12:02 p.m.)). Zoom's claim that Comcast refused to test a wireless DOCSIS 2.0 modem that Zoom was developing is disingenuous. As Zoom's CEO made clear, Zoom was only "considering a DOCSIS 2.0 cable modem with wireless-N for retail" and had not yet developed the modem for testing. Zoom Complaint Ex. 4, at 1. Indeed, in response to Comcast's letter of October 6, 2010, Zoom informed Comcast that it did not intend to move forward with the DOCSIS 2.0 modem with wireless capability. See *id.* at 4 (reflecting an e-mail from Frank Manning, Zoom, to Jeffrey Smith, Comcast (Oct. 7, 2010, 2:43 p.m.)). In any event, Comcast made clear that its decision to conduct testing was limited to "[Zoom's] existing model for which you are proposing a change in chipset," and that Comcast had made "*no decision with respect to any other devices.*" *Id.* at 5 (emphasis added).

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33. After being informed that its new modem would be subject both to DOCSIS testing and P&E testing (the same testing Comcast now does for new DOCSIS modems it leases to its customers) on October 12, 2010, Zoom requested that Comcast make an exception for P&E testing on Zoom's DOCSIS 2.0 modem.⁵⁰ Jason Livingood, Executive Director of Internet Systems Engineering at Comcast, immediately responded that Comcast's "testing/cert policies continue to evolve" and that Comcast "now believe[s] it is important that all devices in the network, whether customer-purchased or Comcast-purchased, should pass P&E evaluation."⁵¹ On that very same day, October 12, 2010, Hume Vance of Zoom began making arrangements with Norman Baker, an engineer in Comcast's Quality Assurance group, to coordinate scheduling for P&E testing on Zoom's DOCSIS 2.0 modem as soon as Zoom received CableLabs' certification, and Zoom was provided a copy of Comcast's P&E testing documents.⁵² Zoom did not anticipate receiving CableLabs' certification until "sometime in January [2011]" because, according to Zoom, CableLabs' "D2 certifications are now done on a rolling basis, so

⁵⁰ See E-mail from Hume Vance, Zoom Jason Livingood, Comcast 1 (Oct. 12, 2010, 12:30 p.m.) (attached as Exhibit 15). Zoom was aware that Comcast was planning to implement P&E testing for retail modems. As Zoom's CEO's declaration indicates, throughout last winter, Zoom and Comcast had discussions regarding whether Comcast would require retail devices such as Zoom's new DOCSIS 3.0 modem to be subject to P&E testing. Complaint Ex. 3 ¶¶ 33-37. Comcast did not finalize its decision to require P&E testing on retail DOCSIS devices until later in the year, so Zoom's DOCSIS 3.0 modem that Comcast certified this past summer did not have to undergo P&E testing.

⁵¹ See Ex. 15, at 1 (reflecting an e-mail from Jason Livingood, Comcast, to Hume Vance, Zoom (Oct. 12, 2010, 1:33 p.m.)).

⁵² See Ex. 14, at 4. Oddly, although as recently as this past summer Zoom had a device undergo Comcast's DOCSIS testing, on October 28, 2010, Zoom asked to see Comcast's DOCSIS testing plans so Zoom could "know ahead of time what the complete set is of [Comcast's] requirements, to help assure that [Zoom] not submit a cable modem that fails [Comcast's] requirements." E-mail from Hume Vance, Zoom, to Earle Iveson, Comcast (Oct. 28, 2010, 12:16 p.m.) (attached as Exhibit 16). Comcast provided its DOCSIS testing plans the next day, October 29, 2010. See *id.* (reflecting an e-mail from Earle Iveson to Hume Vance (Oct. 29, 2010, 1:07 p.m.)).

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we won't know for certain what the date will be until we receive the result.”⁵³ Based on this series of correspondence, Comcast believed that Zoom was on track to submit its new DOCSIS 2.0 modem for testing and certification as soon as it received CableLabs' approval.

34. On November 18, 2010, even though Zoom was still awaiting CableLabs' certification, Zoom sent a letter demanding that Comcast not perform DOCSIS *or* P&E testing of Zoom's modem and that Comcast certify Zoom's modem based solely on its expected completion of CableLabs testing and purported UL compliance.⁵⁴ Zoom further demanded that Comcast agree not to work with CableLabs in the future to modify or improve upon that organization's testing methodologies.⁵⁵ Comcast responded in writing, explaining the nature of and necessity for its testing, and it advised Zoom that it could not accommodate Zoom's demands but would be happy to work productively with Zoom to complete testing of its modem.⁵⁶ In response, and in contrast to the position taken in its Complaint, Zoom modified its demands by retracting its insistence that Comcast refrain from DOCSIS testing. Instead, it specifically requested that Comcast eliminate P&E testing and “expedite[] [its modem application] through for approval by Comcast,” though the modem still had not been certified by CableLabs.⁵⁷

⁵³ Ex. 14, at 2 (reflecting an e-mail from Hume Vance to Norman Baker (Oct. 12, 2010, 2:55 p.m.)).

⁵⁴ See Proposal of Zoom Telephonics, Inc. (Nov. 18, 2010) (attached as an exhibit 1 to Zoom Opposition to Motion to Dismiss (Dec. 16, 2010)) (“Zoom Proposal”) (attached herein as Exhibit 17); see also Letter from Joe Waz, Comcast, to Matthew Berry, Patton Boggs LLP, at 3 (Nov. 23, 2010) (referencing Zoom demand) (attached as Exhibit 18).

⁵⁵ See Zoom Proposal, Ex. 17.

⁵⁶ See Ex. 18, at 1.

⁵⁷ E-mail from Matthew Berry, Patton Boggs LLP, to Joe Waz, Comcast Corporation (Nov. 24, 2010, 4:08 p.m.) (attached as Exhibit 19).

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35. Comcast responded in writing again, offering a comprehensive set of proposals to address Zoom's concerns about the P&E testing requirements.⁵⁸ The offer included the following key elements:

- Comcast would supply Zoom with the list of P&E tests that Comcast requires for evaluating and ensuring the performance, safety, and reliability of DOCSIS devices on its HSI network and that apply as well to DOCSIS devices that Comcast purchases for lease or resale to its customers.
- *Zoom could perform the tests itself, with no Comcast involvement* -- at its manufacturing facility in China, in a lab here in the United States, or at any other location determined by Zoom -- at its earliest opportunity.
- Zoom could submit the results of that testing to Comcast and self-certify that the Zoom modem had satisfied those tests.
- Comcast would treat satisfactory test results as sufficient for certification of the Zoom modem. Comcast would reserve the right to request more data or testing if it identified any concerns with the test results, but would commit to relay such concerns to Zoom promptly. Consistent with Zoom's request, upon certification, Comcast would list Zoom's modem as a Comcast-approved modem on its website.
- Because the only charges Comcast imposes for P&E testing are any travel expenses its engineers incur for international travel, Zoom would incur no P&E testing-related charges from Comcast for proceeding in this fashion.⁵⁹

36. The foregoing proposal -- which Comcast continues to stand behind and which Comcast has kept open to Zoom despite the filing of this Complaint -- would address two specific concerns that Zoom has raised about P&E testing.⁶⁰ It would relieve Zoom of the perceived burden of having to perform tests in the presence of Comcast engineers (which Comcast has found beneficial in the past), and it would also relieve Zoom of any Comcast

⁵⁸ Letter from Joe Waz, Comcast Corporation, to Matthew Berry, Patton Boggs LLP (Nov. 26, 2010) (attached as Exhibit 20).

⁵⁹ *See id.*

⁶⁰ *See* Complaint ¶¶ 89-90.

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charges associated with such testing, while still ensuring that the design and manufacture of these devices satisfy standard P&E testing requirements. Zoom made no direct response to this good-faith offer, electing instead to file its Complaint on the following business day -- a complaint that obviously had been in preparation even while Comcast was making good-faith efforts through the Thanksgiving holiday to work with Zoom.

37. As Comcast described in its Motion to Dismiss Zoom's Complaint filed on December 7, 2010, Zoom and its attorneys omitted all the parties' most recent correspondence from a filing that appended much of the parties' *other* correspondence, misled the Commission regarding the status of the parties' discussions about the P&E testing, and failed to disclose to the Commission material facts regarding the various compromises that Comcast had offered prior to Zoom's filing of its Complaint.⁶¹ For these reasons, Comcast renews its request that the Commission grant its Motion to Dismiss.

B. Zoom Fundamentally Mischaracterizes Comcast's P&E Testing.

38. Zoom takes issue in its Complaint with a number of specific test requirements included in Comcast's P&E testing plans.⁶² Comcast has told Zoom repeatedly over the past year that Comcast's testing and certification processes and requirements are evolving, especially since they are only now being extended to retail DOCSIS modems. As the above history makes clear, Comcast has accommodated Zoom in many ways and has been open to working with Zoom to resolve its concerns about Comcast's testing practices, and Comcast continues to be open to doing so. Had Zoom approached Comcast to request reasonable modification of certain

⁶¹ See generally Comcast Motion to Dismiss.

⁶² See Complaint ¶¶ 79-88.

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specific testing requirements, Comcast would certainly have been prepared to engage in such discussions.

39. Despite the Complaint's effort to pillory the testing requirements, it is quite evident that several of the P&E tests at issue were never intended to apply to retail modems and would not have been applied to Zoom's modem. In fact, Comcast's P&E testing plan makes clear that [[

]] and that [[

]]⁶³ Zoom would not be expected to comply with those tests that were not applicable.

40. For example, Zoom focuses in its Complaint on requirements regarding "bar cod[ing]," "the robustness of a cable modem's buttons and switches," "cable modem's weight," and "how the prolonged application of certain substances to a cable modem affects its appearance."⁶⁴ Comcast requires bar coding on equipment it purchases directly from vendors for inventory tracking purposes and, therefore, this requirement would not be applicable to a retail device.⁶⁵ Comcast also requires the devices it purchases to be able to withstand typical consumer behavior, such as repeatedly pushing the reset button whenever a problem occurs. However, the testing requirement regarding the number of times that the reset button is pressed is not applicable to Zoom's modem because Zoom's modem has a recessed reset button. This would

⁶³ Ex. 4, P&E Test Plan §1.3.2; *see* Cusson Decl. ¶ 31.

⁶⁴ Complaint ¶¶ 81-85, 88.

⁶⁵ *See* Cusson Decl. ¶ 30.

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exempt the modem from the requirement even if it were a wholesale device.⁶⁶ Similarly, Comcast has an interest in the weight and appearance of DOCSIS modems it purchases -- both for purposes of consumer preference and for purposes of shipping and handling -- but Comcast does not care how heavy or attractive Zoom's modems are. Had Zoom merely asked Comcast about these requirements, it would have promptly been informed that those items and others were not applicable to modems sold at retail.⁶⁷ In order to avoid any perceived doubt in the future as to what requirements apply to retail DOCSIS devices, Comcast is in the process of updating the P&E testing documents to explicitly tailor them for retail modem testing and intends to release them in the near future.

41. Zoom's other claims regarding the need for P&E testing are likewise unfounded. For example, Zoom complains that Comcast tests DOCSIS devices in overly high-temperature conditions.⁶⁸ However, in Comcast's experience, customers tend to locate their DOCSIS devices in their entertainment centers, closets, attics, and other relatively contained locations with poor ventilation and sometimes in close proximity to other electronics (including underneath or on top of their computer, router, or computer speakers).⁶⁹ These locations, particularly when there is proximity to other heat-generating equipment, are likely to be *much* warmer than room temperature. As a result, Comcast believes it is sensible to test these devices at the higher

⁶⁶ See *id.*

⁶⁷ See *id.* ¶ 31.

⁶⁸ See Complaint ¶¶ 79-80.

⁶⁹ See Cusson Decl. ¶ 28.

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temperatures in which these modems are likely to operate in the real world.⁷⁰ Likewise, Zoom argues that Comcast's requirements regarding AC line voltage are unnecessary in light of UL testing requirements.⁷¹ In Comcast's experience, the minimal UL testing requirements do not sufficiently replicate the environments in which DOCSIS modems and other devices are used or the manner in which Comcast's customers use them.⁷²

42. In fact, Comcast has had troubling experiences in the past related to the failure of a company to submit a device to P&E testing that had satisfied UL requirements. In one example, a manufacturer of set-top boxes modified its device and substituted a cheaper chip in its box after the box had passed Comcast testing, including P&E testing, and had been approved by Comcast. That set-top box manufacturer did not notify Comcast of the change or resubmit the device for more testing.⁷³ Attached as exhibits hereto are pictures taken of a small number of those modified set-top boxes that were returned by customers who witnessed them *spark and briefly flame*.⁷⁴

⁷⁰ See *id.*

⁷¹ See Complaint ¶ 86.

⁷² See Cusson Decl. ¶ 33.

⁷³ See *id.* ¶ 25.

⁷⁴ See Exhibit 21. The devices were manufactured in accordance with UL requirements and therefore the damage was isolated and contained within the device, and fortunately Comcast received notice of only a small number of such incidents. Nonetheless, Comcast required the device manufacturer to report the failures to the Consumer Product Safety Commission ("CPSC") and obtain an independent third-party review of the device. Comcast also suspended distribution of the devices pending a determination as to whether a recall was warranted, as well as exchanged any devices for which it received a complaint. Once the root cause was identified, the manufacturer redesigned the device to provide additional protection, and provided for specially designed plugs to be manufactured and distributed to existing customers at no charge. In addition, Comcast required that all returned devices be retrofitted. The CPSC reviewed and accepted the manufacturer's remediation plan.

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43. The modified set-top box had satisfied UL requirements. However, as noted earlier, UL testing does not take into account how variations in voltage can affect electronic components.⁷⁵ The reported incidents took place in areas that were experiencing brownouts (i.e., a condition in which voltage drops and current increases).⁷⁶ Moreover, these devices were left plugged in and powered on, as is typical with set-top boxes and DOCSIS modems, thus making them particularly susceptible to these voltage and current fluctuations.⁷⁷ P&E testing almost certainly would have identified this problem. Unlike Zoom, Comcast believes it is appropriate for devices to be tested for such potential circumstances.

IV. ZOOM HAS NO BASIS WHATSOEVER FOR ITS CLAIMS THAT COMCAST'S TESTING AND CERTIFICATION PROGRAM WILL HARM THE MARKETPLACE FOR DOCSIS MODEMS.

A. Comcast's Testing Program Has Helped Facilitate a Robust Marketplace for DOCSIS Modems.

44. Zoom claims that Comcast's testing and certification requirements "curtail the availability of cable modems at retail outlets and thereby encourage subscribers to lease or rent cable modems directly from Comcast."⁷⁸ This claim is baseless and unsupported by marketplace facts. In contrast to some other broadband ISPs, Comcast certifies retail DOCSIS devices for use on its HSI network, posts a listing of certified DOCSIS devices on its website, and instructs customers that they are free to use those devices.⁷⁹ In fact, over the last decade, Comcast has

⁷⁵ See Cusson Decl. ¶ 34.

⁷⁶ See *id.* ¶¶ 33-34.

⁷⁷ See *id.*

⁷⁸ Complaint ¶ 4.

⁷⁹ See generally Ex. 13.

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and DOCSIS devices from Linksys and D-Link.⁸⁴ Other retailers carry a similarly wide selection of DOCSIS devices.⁸⁵

46. The Commission has acknowledged this competitive reality. It stated in its *AllVid NOI* that there is “an innovative and highly competitive retail market for devices used with broadband services.”⁸⁶ Likewise, the National Broadband Plan refers to the broadband modem marketplace as one where “[b]roadband modems offer an example of how to unleash competition, investment and innovation in set-top boxes and other video navigation devices for consumer benefit.”⁸⁷

B. Comcast’s Certification Requirements Have Been Widely Praised by Manufacturers and Are Supported by Consumers.

47. Zoom’s criticisms of Comcast’s testing and certification program are contradicted by Zoom’s past praise of Comcast programs and by the experience of other DOCSIS device

⁸⁴ See Fry’s Electronics, http://www.frys.com/search?search_type=regular&sqxts=1&query_string=cable+modem&cat=0&submit.x=22&submit.y=13 (last visited Dec. 19, 2010).

⁸⁵ See J&R Electronics, Inc., <http://www.jr.com/category/computers/modems/cable-modems/> (last visited Dec. 19, 2010) (noting that J&R carries DOCSIS modems from Motorola, Cisco, and Zoom, as well as DSL modems from Zoom and Actiontec); Micro Electronics, Inc., Micro Center Computers & Electronics, http://www.microcenter.com/search/search_results.phtml?N=4294966736 (last visited Dec. 19, 2010) (noting that Micro Center offers DOCSIS modems from Zoom, D-Link, and Linksys, as well as DSL modems from Zoom and NetGear); Radio Shack Corp., <http://www.radioshack.com/search/index.jsp?kwCatId=&kw=cable%20modem&origkw=cable%20modem&sr=1> (last visited Dec. 19, 2010) (noting that Radio Shack carries DOCSIS modems from Motorola and Linksys and DSL modems from Actiontec and NetGear); Staples, <http://www.staples.com/office/supplies/StaplesSearch?searchkey=cable+modem&storeId=10001&catalogId=10051&langId=-1&fromUrl=home&autocompleteSearchkey=cable+modem> (last visited Dec. 19, 2010) (noting that Staples carries DOCSIS and DSL modems from Zoom).

⁸⁶ *In re Video Device Competition; Implementation of Section 304 of the Telecommunications Act of 1996; Commercial Availability of Navigation Devices*, Notice of Inquiry, 25 FCC Rcd. 4275, ¶ 20 (2010) (“*AllVid NOI*”); see *id.* ¶ 21 (“One possible reasons for the lack of success in the implementation of Section 629 to date is that it was modeled on the earlier telephone service approach, rather than the second, broadband approach.”).

⁸⁷ National Broadband Plan at 50, Box 4.1.

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manufacturers. As noted above, device manufacturers recognize that Comcast's testing and certification procedures help them identify a number of problems with devices before they are mass produced, and manufacturers have praised Comcast for its testing processes.⁸⁸

48. Consumers agree that Comcast's product testing is beneficial. If DOCSIS devices do not work properly, customers will generally first complain to Comcast, not to the device manufacturer. There is no better proof of this than the fact that Zoom does not offer purchasers a toll-free number for Zoom customer support, and Zoom's support hours are restricted to Monday through Friday from 6 a.m. to 8 p.m. Eastern Time, and excludes numerous holidays.⁸⁹ Nor does Zoom offer a free modem replacement service in the event of device obsolescence that may result from provider speed increases. Therefore, Comcast must do all it can to ensure that DOCSIS devices deployed on its HSI network deliver the high-quality service that the customer expects and pays for, especially because it is Comcast that will have to meet customers' support expectations 24 hours a day, 365 days a year.

49. A number of comments posted to different online forums demonstrate that consumers understand the value of Comcast's testing and certification program:

- "So Comcast has higher standards than CableLabs? Good for them. The real issue is Zoom trying to play this off as a Net Neutrality violation which it isn't."⁹⁰
- "What's the problem here again? Sounds like Comcast is just trying to prevent out of date or crappy modems from being attached to their network and then

⁸⁸ See *supra* notes 30-33 and accompanying text.

⁸⁹ See Zoom Telephonics, *Contacting Zoom's Support Center*, http://www.zoomtel.com/contact/contact_techsupport.html (last visited Dec. 19, 2010).

⁹⁰ Ken, *Broadband DSL Reports, Forums: Zoom Accuses Comcast of Net Neutrality Violation* (Nov. 29, 2010, 18:16 p.m.), <http://www.dslreports.com/shownews/Zune-Accuses-Comcast-Of-Net-Neutrality-Violation-111587>.

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having to deal with the fallout. Being the largest cable provider means they have to deal with the most problems from flaky modems being attached to it and they pay for it in customer satisfaction, trouble calls, and money.”⁹¹

- “Allowing bad or old standard modems on their network would cost [Comcast] customer satisfaction when customers get unhappy due to modem problems. Comcast is trying to prevent future modem problems.”⁹²
- “Zoom WANTS Comcast support so they can sell modems in Comcast areas and tell customers it's supported. Zoom could've just ditched the Comcast support, but they won't sell nearly as many modems and will get many more returns. So if Zoom WANTS Comcast to support them, they have to let Comcast test them.”⁹³
- “Coming from a part of the country which has power outages frequently enough . . . , I can certainly sympathize with Comcast rejecting a device that was not robust in the face of power blips. All of those failures are going to be blamed on Comcast, and of course there is plenty of blame to go around, so why would you not try to screen out devices that were going to cause more customer service calls?”⁹⁴

50. This situation contrasts with customer expectations with respect to consumer electronic devices on the customer side of the DOCSIS device or other modem. To the extent that the consumer has issues with the functioning of a PC or an Xbox or an iPad, the consumer will in the normal course raise his or her concerns with the manufacturer of the device, not Comcast. Not so with a DOCSIS device. When a DOCSIS device malfunctions, customers tend to believe that the problem lies with the service, and Comcast routinely gets the call.

⁹¹ *Id.*, Dr. Drew (19:30 p.m.)

⁹² Dr. Drew, Broadband DSL Reports, *Forums: Zoom Accuses Comcast of Net Neutrality Violation* (Nov. 30, 2010, 9:19 a.m.), <http://www.dslreports.com/shownews/Zune-Accuses-Comcast-Of-Net-Neutrality-Violation-111587>.

⁹³ *Id.* (10:56 a.m.) (emphasis in original).

⁹⁴ Vielmetti, Susan Crawford Blog - Comments, <http://scrawford.net/blog/inside-job/1419/> (Nov. 30, 2010, 3:31 a.m.).

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C. Comcast's Program Does Not Restrict Innovation in the DOCSIS Device Marketplace.

51. For the reasons discussed above in Section IV.A, there is similarly no merit to Zoom's claim that Comcast's testing and certification program restricts innovation in the DOCSIS device marketplace.⁹⁵ In any event, Zoom's DOCSIS 2.0 modems can hardly be considered "innovative" modems in a marketplace that is rapidly migrating to DOCSIS 3.0 and ultra-wideband devices and services. More fundamentally, Zoom's insistence that Comcast continue certifying old DOCSIS technology would actually *suppress* broadband innovation by depriving consumers of broadband services at the speeds that the National Broadband Plan has called for.⁹⁶

52. Moreover, Comcast is not holding back deployment of Zoom's devices. Comcast *has* accommodated Zoom's request for testing of its new DOCSIS 2.0 modem, and, contrary to Zoom's claims,⁹⁷ Comcast has not ruled out future testing of Zoom's proposed DOCSIS 2.0 wireless modem. Comcast said that it was reviewing its processes and policies with respect to testing and certifying DOCSIS 2.0 devices and simply explained that it could not commit to testing future devices at the present time.⁹⁸

⁹⁵ See Complaint ¶ 8.

⁹⁶ See National Broadband Plan at 25. Zoom's suggestion that Comcast certify DOCSIS 2.0 modems for the next three years, *see* Complaint at 34, does not address the issue of equipment obsolescence. Three years is a lifetime in the broadband world, and nearly 85% of Comcast's HSI footprint is already upgraded to DOCSIS 3.0.

⁹⁷ See Complaint ¶ 124.

⁹⁸ See *supra* note 49 (quoting correspondence between Comcast and Zoom on testing of wireless modem concept).

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V. ZOOM'S NAVIGATION DEVICE CLAIMS ARE WITHOUT MERIT.

A. DOCSIS Devices Are Not Navigation Devices.

53. The essence of Zoom's legal argument is that its DOCSIS modems are navigation devices subject to Section 629 of the Communications Act and the Commission's rules promulgated thereunder. In support of this view, Zoom relies on a passing reference in the Commission's *1998 Order* and elsewhere to "cable modems" as one possible type of navigation device.⁹⁹ Zoom is mistaken. The DOCSIS devices at issue in this Complaint are not navigation devices.

54. The navigation device rules are limited to devices that can "access multichannel video programming and other services offered over multichannel video programming systems."¹⁰⁰ A multichannel video programming system is defined as "a distribution system that makes available for purchase, by customers or subscribers, multiple channels of video programming."¹⁰¹ In the cable context, the Commission consistently and repeatedly has applied the rules to devices, such as cable set-top boxes, that are used to access Title VI cable services that are made available by a cable operator.¹⁰² This approach fully comports with the plain

⁹⁹ See, e.g., Complaint ¶¶ 21, 28. In the *1998 Order*, "cable modems" were included in a long list with certain other devices, such as TVs, VCRs, and PCs, that were not addressed in the Commission's implementing rules. See *In re Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Report and Order, 13 FCC Rcd. 14775, ¶ 25 (1998) ("*1998 Order*").

¹⁰⁰ 47 C.F.R. § 76.1200(c).

¹⁰¹ *Id.* § 76.1200(a).

¹⁰² See, e.g., *1998 Order*; *In re Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Order on Reconsideration, 14 FCC Rcd. 7596 (1999); *In re Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Further Notice of Proposed Rulemaking and Declaratory Ruling, 15 FCC Rcd. 18199 (2000); *In re Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices*, Second Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd. 20885 (2003) ("*2003 Plug-and-Play Order*"); *In re Implementation of Section 304 of the Telecommunications Act of 1996*:
(footnote continued...)

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language of the rule. These cable services include “multichannel video programming services,” such as linear cable channels, as well as “other services,” such as an operator’s program guide and interactive TV services.

55. In contrast, the Commission has never held that the navigation device rules cover devices, such as the DOCSIS modems at issue in the Complaint, that are used to access *broadband Internet services*. These services are *not* delivered as part of an operator’s “multichannel video distribution systems.” Rather, they are delivered on a separate broadband Internet network, and are governed by an entirely separate regulatory structure from cable services or other MVPD services. Where the Commission has imposed rules on broadband Internet services, it has done so explicitly, such as with its CALEA rules¹⁰³ or as it is expected to do with its Open Internet rules.¹⁰⁴ The Commission has never applied its navigation device rules in this way to DOCSIS devices that are used to access Title I broadband Internet services.

(...footnote continued)

Commercial Availability of Navigation Devices, Second Report and Order, 20 FCC Rcd. 6794 (2005); *In re 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) (“*2010 CableCARD Order*”). Likewise, the Media Bureau has issued dozens of waivers over the years relating to the Commission’s ban on set-top boxes with integrated security. See, e.g., *In re Consolidated Requests for Waiver of Section 76.1204(a)(1) of the Commission’s Rules*, Memorandum Opinion and Order, 22 FCC Rcd. 11780 (MB 2007); *In re James Cable, LLC et al Requests for Waiver of Section 76.1204(a)(1) of the Commission’s Rules*, Memorandum Opinion and Order, 23 FCC Rcd. 10592 (MB 2008); *In re Cablevision Sys. Corporation’s Request for Waiver of Section 76.1204(a)(1) of the Commission’s Rules*, Memorandum Opinion and Order, 24 FCC Rcd. 393 (MB 2009).

¹⁰³ See, e.g., *In re Communications Assistance for Law Enforcement Act and Broadband Access and Services*, First Report and Order and Further Notice of Proposed Rulemaking, 20 FCC Rcd. 14989 (2005). Furthermore, when the Commission applied CALEA requirements to broadband Internet services, it did so under the separate CALEA statute, not under the Communications Act.

¹⁰⁴ News Release, FCC, *FCC Announces Tentative Agenda for December 21st Open Meeting* (Nov. 30, 2010) (including on the meeting agenda an “Order adopting basic rules of the road to preserve the open Internet as a platform for innovation, investment, competition, and free expression”).

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56. The Commission's policies in this area are consistent with congressional intent in enacting Section 629. The legislative history accompanying Section 629 demonstrates that, in drafting the Telecommunications Act of 1996,¹⁰⁵ Congress intended to limit the scope of Section 629 to devices used to access services delivered by an MVPD, rather than any "voice, video, or data services" delivered by the MVPD.¹⁰⁶ The original House version of the navigation device provision covered devices used to access "telecommunications subscription service," which was defined to mean "the provision directly to subscribers of *video, voice, or data* services for which a subscriber charge is made."¹⁰⁷ The House report further directed that: "The Commission shall adopt regulations to assure competitive availability, to *consumers of telecommunications subscription services*, of converter boxes, interactive communications devices, and other customer premises equipment from manufacturers, retailers and other vendors not affiliated with any telecommunications system operator."¹⁰⁸

57. However, the House-Senate conferees "narrowed [the scope of the regulations] to include only equipment used to access services provided by multichannel video programming distributors."¹⁰⁹ Accordingly, instead of applying to equipment used by consumers of "telecommunications subscription service," Section 629 was revised only to apply to equipment

¹⁰⁵ Pub. L. No. 104-104, 110 Stat. 56.

¹⁰⁶ See H.R. Rep. No. 104-548, at 181 (1996) (Conf. Rep.); H.R. Rep. No. 104-204, pt. 1, at 37 (1995).

¹⁰⁷ H.R. Rep. No. 104-204, pt. 1, at 37 (1995) (emphasis added).

¹⁰⁸ *Id.* (emphasis added). By way of explanation, the House Report described the type of devices as follows: "These devices will connect consumers to the network of communications and entertainment services that will be provided by telecommunications providers." *Id.* at 112.

¹⁰⁹ H.R. Rep. No. 104-548, at 181 (1996).

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used by consumers of MVPD services.¹¹⁰ Zoom's proposed reading of the statute and rules ignores clear congressional intent that Section 629 *not* apply to devices used to access data and other non-MVPD services.

58. DOCSIS devices are distinguishable in another respect from set-top boxes and other navigation devices covered by the rules. The Commission's navigation device rules currently are premised on the division of network-specific functions between the CableCARD and the set-top box. The CableCARD performs conditional access functions and is supplied exclusively by the cable operator.¹¹¹ Unidirectional Digital Cable Ready Products ("UDCPs") and other CableCARD-compatible devices that may be sold at retail may perform other network functions, but not conditional access. In fact, the navigation device rules specifically limit the consumer's right to attach retail navigation devices to an operator's network to those devices that do *not* perform conditional access or security functions.¹¹²

59. This essential distinction has never existed in the modem context. As the Commission explained in its *AllVid NOI*, the modem and other similar DOCSIS devices are "interface device[s] [that] perform[] *all* network-specific functions," including security

¹¹⁰ *Id.*

¹¹¹ 47 C.F.R. § 76.640(b); 47 U.S.C. § 549(b).

¹¹² See 47 C.F.R. § 76.1202 ("No multichannel video programming distributor shall by contract, agreement, patent right, intellectual property right or otherwise prevent navigation devices *that do not perform conditional access or security functions* from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with such owner or operator, subject to § 76.1209." (emphasis added)); see also 1998 Order ¶ 30 ("The rules (§76.1202) thus additionally enforce the right to attach by precluding contractual or other arrangements, *other than those involving equipment performing conditional access or security functions*, that prevent navigation devices from being made available to subscribers from retailers, manufacturers, or other vendors that are unaffiliated with that such service provider." (emphasis added)).

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functions.¹¹³ The “multitude of competitively provided customer-premises devices” that connect to the modem via Ethernet and WiFi, such as computers, tablets, games consoles, and routers, do not perform any network-specific functions.¹¹⁴

60. In short, the navigation device rules were written to apply to cable set-top boxes and other devices used to access multichannel video services to address a specific perceived need to promote device competition. If, as Zoom contends, the Commission intended the rules to apply to DOCSIS devices, it is curious that the Commission has never provided any guidance as to how the rules could be made to work for modems given their unique characteristics -- in contrast to the numerous and extensive requirements relating to CableCARD devices. Separate security modules have been required for retail set-top boxes for many years. No separate security module has been designed for DOCSIS devices such as modems, and that fact has been accepted without comment by the Commission, modem manufacturers, or anyone else.¹¹⁵

61. Marketplace practices also reflect the reality that the navigation device rules do not apply to modems. Comcast and some other broadband ISPs support modems purchased at retail on their broadband Internet networks, but other broadband ISPs do not. For example, Verizon tells its FiOS Internet customers that they must “use the broadband routers provided by Verizon that have been approved to work specifically with Verizon FiOS Internet Service.

¹¹³ *AllVid NOI* ¶ 20; *see also* National Broadband Plan at n.24 & Box 4-1. As the Commission noted in the *AllVid NOI*, “because each operator terminates its service in an interface device that it can swap out as needed to accommodate innovations in delivery technologies, this approach has freed service providers to innovate in their networks without changing the Ethernet connection to which customers attach their devices.” *AllVid NOI* ¶ 20.

¹¹⁴ *AllVid NOI* ¶ 20.

¹¹⁵ Even if the integration ban did apply, DOCSIS modems should be exempt given their widespread availability at retail outlets. *See* 47 C.F.R. § 76.1204(a)(2).

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These routers contain special diagnostic software that can help us troubleshoot and correct problems should you experience trouble with your Internet connection.”¹¹⁶ AT&T also requires customers to use operator-supplied equipment to access the U-verse high-speed Internet service.¹¹⁷ The Commission has never indicated that there is anything wrong with these different marketplace practices.¹¹⁸

B. The Testing and Certification That Comcast Requires Would Be Entirely Permissible Under the Commission’s Navigation Device Rules.

62. In any event, Comcast’s certification program would be fully consistent with the Commission’s navigation device rules. Zoom contends that the Commission’s rules strictly limit certification and testing to prevention of physical harm to the network and theft of service, and that any testing requirements that actually ensure that the devices deliver services to customers

¹¹⁶ See Verizon FiOS Internet, Frequently Asked Questions -- Equipment Questions, <http://www22.verizon.com/residential/fiosinternet/faq/faq.html#top> (last visited Dec. 19, 2010).

¹¹⁷ See AT&T, AT&T U-verse Terms of Service: AT&T U-verse High-Speed Internet - Equipment & Software, <http://www.att.com/u-verse/att-terms-of-service.jsp#internet> (last visited Dec. 19, 2010) (“AT&T will make available to you certain equipment (including a gateway, or Optical Network terminal (‘ONT’), all of which is herein collectively referred to as ‘U-verse Equipment’), required for your Service. If you do not purchase U-verse Equipment from AT&T, then you agree to *rent* the U-verse Equipment, as part of your purchase of the Service.... Tampering with the U-verse equipment, or attempting to connect the equipment to other hardware, will be treated as damage due to your intentional acts or negligence.” (emphasis added)); see also Broadband DSL Reports, *Forums: Using a 3rd Party VDSL Modem*, <http://www.broadbandreports.com/forum/r22423850-Using-a-3rd-party-VDSL-modem> (posted May 21, 2009) (“Bottom line is a 3rd party VDSL modem will not work, U-Verse authentication is certificate based. There would be no way for your modem to authenticate because there would be no certificate for it.”).

¹¹⁸ The reference in the Commission’s 1998 Order to “cable modems” suggests that, to the extent a modem is used to access Title VI services, it might be covered by the rules. See 1998 Order ¶ 26 (“The expansive nature of the language of Section 629 is a recognition that the future convergence of various types of equipment and services may result in technical innovations not foreseeable at this time.”). However, even in this regard, as noted, the Commission has never provided guidance as to how the rules would be applied to modems -- in contrast to the detailed and repeated guidances it has provided over the years with respect to CableCARD-enabled devices.

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and that the modems perform reliably and safely are off limits.¹¹⁹ There is no basis for such a claim.

63. In the CableCARD context, the Commission has endorsed and codified testing requirements for UDCPs that extend beyond testing for physical harm to the network and theft of service. The current CableLabs' testing regimes for UDCPs -- which the Commission recently affirmed and updated -- require, among other things, that UDCPs:

- (i) can tune and display encrypted digital channels via the CableCARD;
- (ii) will not technically disrupt, impede, or impair delivery of services to cable subscribers;
- (iii) will not cause physical harm to the cable network or the CableCARD;
- (iv) will not facilitate theft of service or otherwise interfere with reasonable actions taken by cable operators to prevent theft of service;
- (v) will not jeopardize the security of any services offered over the cable system;
- (vi) will not 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; and,
- (vii) will not impede or impair control of content protection.¹²⁰

In its recent *CableCARD Order*, the Commission modified these CableCARD rules to reflect updated testing procedures at CableLabs. In adopting these changes, the Commission noted that CableLabs' device testing "is important to ensure that CableCARD devices *work properly*."¹²¹

The Commission did not suggest in this order or its prior orders that the scope of the CableLabs'

¹¹⁹ See, e.g., Complaint ¶¶ 12, 78-80, 86-87.

¹²⁰ See *2003 Plug-and-Play Order* ¶ 38; see also 47 C.F.R. § 15.123 (establishing requirements for devices to be labeled as digital cable ready).

¹²¹ *2010 CableCARD Order* ¶ 37 (emphasis added).

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testing regime is overbroad and should be confined to “harm to the network” or “theft of service.”

64. As with these CableCARD tests, Comcast’s testing and certification program for DOCSIS devices is intended to ensure that devices used to access its HSI service “work properly.” In conjunction with the CableLabs’ testing for modems, Comcast’s DOCSIS and P&E testing require that DOCSIS devices protect against electronic and physical harm caused by modems, guard against theft of service, and ensure that the devices will not disrupt, impede, or impair delivery of services to HSI subscribers, among other things.¹²²

65. It also bears noting that Zoom raises no objections to CableLabs’ testing of DOCSIS devices. Indeed, it has demanded that Comcast approve devices that have been certified by CableLabs.¹²³ Yet CableLabs’ testing also involves more than just harm to the network and theft of service.¹²⁴ If Zoom’s logic were followed all the way through, CableLabs’ testing would have to be stripped down to a bare minimum. At that point, it would almost be

¹²² See *supra* Section II.B. The Commission’s rules also specifically state that service providers may establish and enforce their own reasonable standards to define harm to their facilities. *1998 Order* ¶ 36. Comcast’s certification program fits squarely within this requirement. Comcast makes its test requirements available to manufacturers who ask for them, consistent with the Commission’s guidance in its *1998 Order*. See *id.* ¶ 34. That is precisely what Comcast did with respect to Zoom. When Zoom requested the documents, Comcast supplied Zoom with all relevant testing documents. See Ex. 14 (reflecting an October 12, 2010 e-mail from Norman Baker to Hume Vance at 9:55 a.m. that attached Comcast’s P&E Testing Plan and SCTE40 Testing Plan); Ex. 16 (reflecting an e-mail from Earle Iveson, Comcast, to Hume Vance, Zoom (Oct. 29, 2010, 1:07 p.m.)) (attaching Comcast’s DOCSIS Testing Plan). Comcast does not make its test requirements publicly available because they include confidential information about Comcast’s network.

¹²³ See Ex. 17.

¹²⁴ See CableLabs Letter, Ex. 2, at 1 (“CableLabs’ cable modem testing, therefore, is for conformance to CableLabs’ DOCSIS specification and basic performance issues, such as the ability for a device to power on, to communicate with the network, to send the appropriate radio frequency signals, and to interoperate with modem-connected devices in the home.”). In fact, Zoom concedes that the CableLabs’ test suite addresses performance-related issues, such as “how the cable modem handles large data flows over extended periods” and “interoperability with other DOCSIS equipment in its laboratories.” Complaint ¶ 42.

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certain that *no* DOCSIS device would work on *any* provider's DOCSIS network.¹²⁵ In other words, a harm-to-the-network/theft-of-service-only testing rule would make no sense and serve no public interest at all. It would not even advance *Zoom's* interest in selling retail modems.¹²⁶

66. Zoom also asks the Commission to interpret its rules to limit Comcast's ability to request changes to CableLabs' certification program.¹²⁷ This proposal would result in public interest harms and should be rejected. CableLabs has an established Engineering Change Request ("ECR") process that is specifically designed to refine and improve the DOCSIS testing process to account for real-world performance issues that are observed in the field. Indeed, the process of operators working closely with CableLabs to regularly update the core DOCSIS specifications has contributed to the enormous success of the DOCSIS specifications,¹²⁸ in the very same way that engineers continue to work to improve upon standards in organizations ranging from ATIS to the IETF, UPnP Forum, Broadband Forum, and countless others.¹²⁹ The

¹²⁵ Zoom's proposed narrow interpretation would have other harmful spill-over effects since it would raise questions about the permissibility of any and all testing and certification that other broadband ISPs perform on modems.

¹²⁶ Zoom also alleges that Comcast's certification program undermines Congress's and the Commission's commercial availability goals. *See* Complaint ¶¶ 7-8. As noted above, Comcast's program has been *praised by Zoom* as well as other manufacturers, and has *facilitated* a competitive retail marketplace for DOCSIS modems by helping to give consumers confidence that the modems they purchase at retail will work properly to receive the HSI services they purchase from Comcast. P&E Testing will further improve the customer experience with retail modems, much as it has done for modems that Comcast leases or sells to customers.

¹²⁷ *See* Complaint at 33-34.

¹²⁸ *See* CableLabs Letter, Ex. 2, at 2 ("In addition, CableLabs has implemented an Engineering Change Request ('ECR') process whereby cable operators, vendors, and other stakeholders can submit proposed changes to our specifications based on their real-world experiences. This input from industry experts and stakeholders is critical to CableLabs' testing, as testing is an iterative process. This feedback about different and changing network and device requirements helps ensure a basic level of interoperability between CableLabs Certified modems and other DOCSIS equipment deployed across the cable industry.").

¹²⁹ *See, e.g.,* Alliance for Telecommunications Industry Solution, *About Us*, <http://www.atis.org/about/> (last visited Dec. 18, 2010) (providing background on ATIS); UPnP Forum, *About UPnP Forum*, <http://upnp.org/about/what-is-upnp/> (last visited Dec. 19, 2010) (discussing work of UPnP Forum); Internet
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suggestion that CableLabs terminate this essential feedback loop, that Comcast not submit suggestions to the ECR process or work with CableLabs in other ways to continuously improve the DOCSIS Specifications, or that the innovation and improvement in broadband standards not be allowed to continue unfettered, would deprive customers of improvements to their Internet experience and to the performance, safety, and reliability of their DOCSIS modems. That is not something Zoom or any vendor could responsibly advocate.

VI. DOCSIS DEVICE CERTIFICATION REQUIREMENTS DO NOT IMPLICATE OPEN INTERNET PRINCIPLES

67. Zoom's claims that Comcast's testing and certification programs "violate the Commission's open Internet principles" are baseless.¹³⁰ The Internet Policy Statement sets forth principles, not rules, and accordingly there is nothing for the Commission to enforce or for Comcast to "violate."¹³¹ In any event, Comcast's testing and certification requirements do not conflict with these principles.

68. The Commission's open Internet principles, as adopted in the Commission's 2005 Internet Policy Statement, include the principle that "consumers are entitled to connect their choice of legal devices that do not harm the network."¹³² But Comcast's customers *can* attach

(...footnote continued)

Engineering Task Force, *Getting Started in the IETF*, <http://www.ietf.org/newcomers.html> (last visited Dec. 19, 2010) (providing background information on IETF).

¹³⁰ See Complaint ¶ 9.

¹³¹ See *In re Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 FCC Rcd. 14986 ¶ 3 (2005) ("*Internet Policy Statement*") (noting that the *Internet Policy Statement* provided "guidance and insight in [the Commission's] approach to the Internet and broadband"); FCC, News Release, *Chairman Kevin J. Martin Comments on Commission Policy Statement* (Aug. 5, 2005) (stating that "policy statements do not establish rules nor are they enforceable"), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-260435A2.pdf.

¹³² *Internet Policy Statement* ¶ 4.