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April 11, 2019

**VIA ELECTRONIC FILING**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: *Connect America Fund*, WC Docket No. 10-90  
Notice of *ex parte* presentation

Dear Ms. Dortch:

On April 9, 2019, the undersigned, along with Christopher Murphy, Jason Sophinos, Eric Baulesh, Krystal Lewis, and Xiao Wu of Viasat, Inc. (“Viasat”), as well as Michael Donahue of Marshlian & Donahue, PLLC, had a telephone discussion with Suzanne Yelen, Cathy Zima, Stephen Wang, and Alec MacDonell of the Wireline Competition Bureau regarding approaches for measuring voice service quality for supported services and systems to be implemented in the future by Viasat and other support recipients under the Commission’s high-cost support programs.

At the meeting, we reiterated Viasat’s support for a testing regime that ensures that supported services deliver voice services to consumers in accordance with existing Commission requirements. We further explained that the Commission can accomplish this goal and maximize transparency to consumers—without subjecting satellite VoIP providers to undue costs or violating principles of competitive and technological neutrality—by making modest clarifications or modifications to the testing framework adopted in last year’s *Performance Metrics Order* in the above-referenced proceeding.<sup>1</sup> We emphasized that Viasat is not seeking fundamental changes to the Commission’s testing regime and, in particular, continues to support a service quality benchmark of a mean opinion score (“MOS”) of four for satellite VoIP. In keeping with this approach, Viasat set forth a proposal for a clarified framework that takes its lead from the *Performance Metrics Order* and includes features aimed at accurately measuring voice quality in a transparent manner without creating unwarranted burdens.

We began by recommending that high-cost support recipients conduct MOS testing with a frequency and at such time as to permit reporting test results for the prior calendar year with the

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<sup>1</sup> *Connect America Fund*, Order, 33 FCC Rcd 6509 (WCB, WTB, & OET 2018) (“*Performance Metrics Order*”).

recipient's annual performance certification. We voiced our support for conducting such MOS testing using the main characteristics of a conversation-opinion test, and noted our agreement with the conversation-opinion-based testing in the *Performance Metrics Order*.<sup>2</sup>

We further recommended that the Commission clarify that this conversation-opinion testing should be conducted consistent with industry standards and subject to the following guidelines:

- *First*, testing should be performed using the operational network infrastructure used to deliver the supported service (rather than relying on laboratory-based simulations)—as already required under the *Performance Metrics Order*.<sup>3</sup>
- *Second*, testing should be conducted using the equipment, systems, and processes that are used in provisioning the supported service to awarded locations—which the *Performance Metrics Order* also already indicates.<sup>4</sup>
- *Third*, live interviews should be conducted in a transparent manner to determine the MOS. We noted that we concur with the *Performance Metrics Order*'s prohibition on the use of “[s]urvey forms, mail-in documentation, automated phone calls, or other non-interactive and non-person-to-person interviews.”<sup>5</sup> We also urged the Commission to allow satellite VoIP providers to engage in self-testing for purposes of making annual certifications, as other support recipients are permitted to do, so long as providers conduct such testing in a transparent manner. We suggested that, to ensure transparency, the Commission could require satellite VoIP providers to submit the results of their annual certification-related tests for the prior period with their annual performance certifications. We also suggested requiring satellite VoIP providers to furnish, upon request by the Commission, the underlying documentation for the prior year's certification-related testing—which could include the testing methodology, survey questions or scripts, details about the sampling tool or methodology used to select participants, and recordings or transcripts of customer responses. Additionally, we recommended that the Commission could look to the relevant ITU-T specifications<sup>6</sup> in providing more guidance on testing procedures and scoring methodology, and for

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<sup>2</sup> See *id.* ¶ 44.

<sup>3</sup> See *id.* ¶ 45.

<sup>4</sup> See *id.*

<sup>5</sup> *Id.*

<sup>6</sup> See International Telecommunications Union, P.800 Series P: Telephone Transmission Quality; International Telecommunications Union, P.805 Series P: Telephone Transmission Quality, Telephone Installations, Local Line Networks.

developing a standard script that could form the basis for each support recipient's conversation-opinion testing.<sup>7</sup>

- *Fourth*, as an initial matter, consistent with the *Performance Metrics Order*, testing is to be conducted over a “single hop” satellite connection with at least one endpoint at an active subscriber location using the subscriber's end-user equipment.<sup>8</sup> When that testing occurs, to correct for the potential effects of end-user equipment, background noise at the subscriber's location, or other “real-world” factors that could affect the conversation but are outside the provider's control, we suggested that the Commission clarify that support recipients are required to demonstrate a MOS of four or higher for at least 80 percent of the participants. We noted that such an approach is analogous to the 80 percent rule applicable to broadband speed testing,<sup>9</sup> and represents one way in which the Commission could bridge the gap between the laboratory testing procedures specified in ITU-T Recommendation P.800 and the real-world testing approach contemplated in the *Performance Metrics Order*.
- *Fifth*, the second endpoint for testing may be a centralized location from which the live interviews with the subscriber are conducted to determine the subscriber's MOS evaluation—an approach that likewise tracks the *Performance Metrics Order*.<sup>10</sup> To the extent that one of the scenarios contemplated in ITU-T Recommendation P.800 involves two subjects conversing with each other while a third-party reviewer listens in, such an approach plainly would be ill-suited to real-world testing. Indeed, the *Performance Metrics Order* implicitly acknowledges the difficulties posed by such an approach, as it instead contemplates a two-party call in which “the Reviewer conducts live interviews with the subscriber to determine the subscriber's MOS evaluation.”<sup>11</sup>
- *Finally*, consistent with the *Performance Metrics Order*, each covered support recipient should identify a population of voice subscribers across the recipient's nationwide CAF subscriber base and test 100 participants across the nation if it has 3,500 or fewer subscribers or 370 participants if it has more than 3,500 subscribers.<sup>12</sup>

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<sup>7</sup> The Commission also could specify that actual testing questions must reasonably align with the standard script to be considered compliant, while non-material variations from the script will not be considered to invalidate a support recipient's MOS score. The Commission could review any variations from the script using the recorded conversations or transcripts obtained during an audit.

<sup>8</sup> See *Performance Metrics Order* ¶ 45.

<sup>9</sup> See *id.* ¶ 51.

<sup>10</sup> See *id.* ¶ 45.

<sup>11</sup> *Id.* ¶ 45.

<sup>12</sup> See *id.* ¶ 46. The Commission could consider specifying that support recipients must use a random sampling statistical tool when selecting potential subscriber participants.

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Viasat believes that testing approach set forth above, which tracks the *Performance Metrics Order* but includes important clarifications for the reasons set forth herein, represents a promising path forward in addressing the issues raised in Viasat's petition for reconsideration<sup>13</sup> and structuring additional support programs in the future.

Please contact the undersigned with any questions regarding this submission.

Respectfully submitted,

/s/

Matthew T. Murchison  
*Counsel for Viasat, Inc.*

cc: Alec MacDonell  
Stephen Wang  
Suzanne Yelen  
Cathy Zima

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<sup>13</sup> See Petition for Reconsideration of Viasat, Inc., WC Docket No. 10-90 (filed Sept. 19, 2018).