



May 23, 2017

Ex Parte

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

Re: USTelecom Ex Parte Notice Connect America Fund, WC Docket No. 10-90

Dear Ms. Dortch:

On Friday, May 19, 2017, Malena Barzilai (Windstream), Alan Buzacott (Verizon), AJ Burton (Frontier), John E. Benedict (CenturyLink), Mary Henze (AT&T), and the undersigned met with Suzanne Yelen, Alec MacDonell, Rodger Woock, Cathy Zima, Alex Minard, and Stephen Wang of the Wireline Competition Bureau (Bureau) of the Federal Communications Commission (Commission) to discuss various issues relating to compliance obligations for recipients of Connect America Fund (CAF) support providing broadband service to fixed locations.

During the meeting, USTelecom urged the Commission to finalize the requirements for broadband speed and latency¹ measurement reporting and compliance (collectively referred to as “broadband measurement”) under the CAF program.² Companies that accepted CAF II support in August 2015 are aggressively deploying broadband facilities to meet the third-year milestone at the end of 2017 and the CAF II auction is on the horizon. The success of both programs depends on all participants knowing what is expected of them and how compliance will be determined. USTelecom believes it is particularly important that the broadband measurement rules are in place before the CAF II auction takes place so that all parties will be bidding based on a common understanding of the program requirements. USTelecom and

¹ The Bureau adopted latency measurement rules in 2013. *Connect America Fund, Report and Order, DA 13-2115, ¶ 23 (WCB 2013) (2013 CAF II State Level Commitment Order)*. However, the USTelecom proposal accommodates both speed and latency measurement and reporting and thus provides a more cost-effective and efficient solution.

² USTelecom intends for this proposal to apply to CAF Phase II (CAF II) recipients (both price cap carriers accepting model-based support and CAF II auction recipients) and, with some minor modifications, to rate of return carriers that receive support pursuant to section 308(a). 47 C.F.R. § 54.308(a).

several of its members have met with staff on a number of occasions to discuss aspects of a potential broadband measurement process. At last Friday's meeting USTelecom presented a comprehensive proposal that could be readily implemented by all CAF II recipients (current and future) and certain rate-of-return carriers and urged the Commission to adopt it as soon as possible.

The USTelecom Proposal is a Reasonable Framework for Reporting and Compliance Under the CAF

During the discussion, USTelecom outlined a proposal for an appropriate and reasonable policy framework for broadband measurement reporting and compliance under the CAF program. USTelecom's proposal consists of a general framework for reporting and compliance that is modeled on existing CAF rules and includes three general categories: 1) establishing the testing group; 2) the methodology and timing for testing; and 3) certification of the testing results. USTelecom discusses, below, the specific recommendations associated with each of these three categories.

A. Establishing the Testing Group

The first component of USTelecom's broadband measurement proposal pertains to the establishment of the testing group. USTelecom recommends that the Bureau implement a framework whereby broadband speed measurement is only conducted at locations with an active subscriber. This aspect of USTelecom's proposal reflects a pragmatic reality for the broadband measurement and reporting envisioned under the CAF, since absent a broadband subscriber there would be no broadband service installed at a specific location for the CAF eligible telecommunications carrier (ETC) to test.³

The testing obligation at active broadband subscriber locations would apply to any broadband measurement approach adopted by a particular ETC. In other words, ETCs would be required to conduct broadband measurements at the subscriber location, regardless of the broadband measurement method they employ (*e.g.*, residential gateway (RG) software, mini-computer attached to the RG, white box).

With the universe of testing locations established (*i.e.*, broadband subscriber locations) an ETC would then select a random group of subscribers from locations it reported in the High Cost Universal Broadband (HUBB) portal for each state. This random group then becomes the

³ A CAF recipient will report locations that are broadband-enabled where it is prepared to offer service meeting the Commission's relevant CAF requirements within ten business days. See, *e.g.*, *Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, FCC 16-33, ¶ 210 (2016). Thus, there may not be subscribers at every location a CAF recipient reports towards its CAF location count requirement.

“Annual Test Set” for the ETC. CAF recipients must complete speed testing by the end of the fourth quarter of 2018 on subscribers whose locations were input into the HUBB for the program year 2017.⁴ This process will repeat each year (*i.e.*, new Annual Test Set per year) because ETCs will continue to add locations into the HUBB.

Regarding the number of testing locations, the Bureau’s previous orders/public notices established/recommended a threshold of 50 testing locations per state for each ETC.⁵ USTelecom recommends that the number of subscribers/locations included in each Annual Test Set should be the lesser of: 1) 20% of the HUBB input locations with subscribers; or 2) 50 subscribers per state. Such an approach would ensure that the Commission receives a statistically significant sample of broadband locations for broadband measurement obligations under the CAF, while not overburdening ETCs that may have a smaller universe of potential testing locations. Finally, ETCs should be the entity selecting the Annual Test Set following Commission guidelines, since they have access to most current subscriber information. , Such an approach is both pragmatic and appropriate since subscriber information is not input into the HUBB.

B. The Methodology and Timing for Testing.

With the Annual Test Set for the ETC established, USTelecom proposes the following criteria for the methodology and timing for testing. First, ETCs would conduct speed and latency testing for the Annual Test Set in each state during the hours between 6 am and Midnight (local time of location) over four consecutive weeks of the ETC’s choosing. The Commission should also afford ETCs the flexibility to conduct testing in different states at different times of the year. Such flexibility will permit multi-state ETCs to design measurement programs that are consistent with their own unique capabilities and resources, while still ensuring that the measurement obligations under the CAF are satisfied for each state. Similarly, ETCs should also be encouraged to design their testing schedule in such a way as to reduce or eliminate any consumer impact.

USTelecom agrees with earlier recommendations in this proceeding that the testing period under the CAF should be expanded to 18 hours.⁶ Under this proposal, USTelecom

⁴ CAF II and certain rate of return ETCs are required to upload 2017 locations by March 1, 2018. See 47 C.F.R. § 316.

⁵ 2013 CAF II State Level Commitment Order at ¶ 23; *Wireline Competition Bureau, et al., Seek Comment on Proposed Methodology for Connect America High-Cost Universal Service Support Recipients to Measure and Report Speed and Latency Performance to Fixed Locations*, Public Notice, DA 14-1499, ¶ 9 (rel. Oct. 16, 2014) (*2014 CAF II Performance Public Notice*).

⁶ See, *e.g.*, Letter from Mary L. Henze, Assistant Vice President, Federal Regulatory, AT&T, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, pp. 8 – 9 (June 20, 2016) (*AT&T Ex Parte*).

recommends that for each subscriber location, the ETC should be required to perform four speed tests each day; once during each of the following designated testing windows (local time):

- First Testing Period: 6 am – 10:30am;
- Second Testing Period: 10:30 am – 3:00 pm;
- Third Testing Period: 3:00 pm – 7:30 pm; and
- Fourth Testing Period: 7:30 pm – Midnight.

USTelecom maintains that a longer testing timeframe would mitigate concerns over consumer impact and potential degradation in speed, capacity, and/or functionality that may result from a more compressed testing timeframe like that proposed in the *2014 CAF II Performance Public Notice*. For example, the SamKnows tests consume a total of 1.7GBs per day at 10 Mbps per test subject, which, in a testing footprint of 18 states and 50 tests subjects per state, would equal a total of 1.5TB at a rate of 9 Gbps for 4 hours at the core of the network.⁷

Moreover, USTelecom maintains that an expanded testing window would encompass the multiple usage cycles that are typical of networks serving both business and residential customers and weekday/weekend traffic. As noted in a testing analysis conducted by AT&T, there was not a single peak period, and instead “multiple periods of heavier usage, especially when factoring in usage from business customers and weekend usage patterns.”⁸

Testing should be conducted over the period of time that reflects actual usage periods of both residential and business customers and that would minimize the impact of testing on the overall customer experience. USTelecom maintains that condensing all testing into a four hour period (as proposed in the *2014 CAF II Performance Public Notice*) exacerbates the likelihood of network congestion by forcing carriers to do more simultaneous testing regardless of the customer impact. Moreover, an expanded 18 hour testing timeframe better captures the multiple periods of heavier usage, especially when residential, business, weekday and weekends are all factored in.

C. Certifying the Test Results

Once testing is complete, USTelecom recommends that ETCs utilize a modified Form 481 to report and certify the results of their broadband testing conducted for each state. ETCs would submit the Form 481 and certify, by checking the appropriate selection, that it meets one of five levels of compliance for that state for both download and upload speed (two separate certifications) and latency. The certifications for each state would be part of the ETC’s

⁷ *Id.* Attachment, p. 9.

⁸ *Id.*, Attachment, p. 8.

public filing, and would fall into one of the following five categories: 1) Full Compliance; 2) Tier 1 Compliance; 3) Tier 2 Compliance; 4) Tier 3 Compliance; and 5) Tier 4 Compliance (collectively the “Compliance Tiers”). The methodology and procedures for each of the Compliance Tiers is described below and Exhibit A of this *ex parte* notice provides a general overview of the framework in both cases using speed testing as the example.

1. Full Compliance.

Under the proposed Full Compliance scenario, if 95% to 100% of all measurements taken during by the ETC during the test period in a state meet the required speed that ETC would be considered in full compliance. An ETC certifying that it is in the Full Compliance tier would have no further obligations, until the subsequent year when it would be required to conduct its annual test and once again submit the Form 481.

2. Tier 1 Compliance.

Under the Tier 1 Compliance scenario, if 80 – 94% of all measurements taken by the ETC during the test period in a state meet the required speed, the ETC would be deemed to have a Tier 1 Compliance gap. An ETC certifying to a Tier 1 compliance gap should be required to include in its Form 481 filing as a confidential attachment: a) speed test results for each subscriber location (identified by latitude/longitude) indicating the date and time of the testing and the methodology used and b) steps that will be taken to resolve the compliance gap, up to and including removing the subscriber locations from the HUBB (collectively, these two obligations are referred to as the “Compliance Gap Remediation Measures”).

Tier 1 ETCs would then be required to identify and retest the subscriber locations that triggered the compliance gap and report the results every quarter after the initial Tier 1 certification or until the locations are in compliance, whichever is earlier. ETCs may elect to remove a location from the HUBB and thus its Annual Test Set in order to come into compliance if a network issue cannot be readily resolved. When the locations that triggered the compliance gap combined with the remainder of the original Annual Test Set qualify the Annual Test Set for Full Compliance, the ETC would then be relieved of its Tier 1 status (these measures are referred to as the “Compliance Gap Reporting Measures”). Finally, an ETC whose Annual Test Set remains in Tier 1 status for four quarterly reports (12 months) would automatically be downgraded to Tier 2 status.

3. Tier 2 Compliance

Under the Tier 2 Compliance scenario, if 70 – 79% of all measurements taken during the test period in a state meet the required speed, the ETC would be deemed to have a Tier 2 Compliance Gap. Under this scenario, ETCs certifying to Tier 2 Compliance would be subject to both the Compliance Gap Remediation Measures, and the Compliance Gap Reporting Measures. In addition, USAC would be instructed to withhold 15 percent of the ETCs monthly

support for that state until the ETC's submission shows that the Annual Test Set comes into Tier 1 Compliance at which point USAC will return the withheld funds.

4. Tier 3 Compliance

Under the Tier 3 Compliance scenario, if 60 – 69% of all measurements taken by the ETC during the test period in a state meet the required speed, the ETC would be deemed to have a Tier 3 Compliance gap. ETCs certifying to Tier 3 Compliance would be subject to the Compliance Gap Remediation Measures and the Compliance Gap Reporting Measures. USAC would be instructed to withhold 25% of the ETCs monthly support for that state until the ETC's submission shows that this Annual Test Set comes into Tier 2 compliance. At that point, Tier 2 requirements would apply to the ETC, and USAC would be instructed to return withheld funds up to an amount that reflects the difference between Tier 3 Compliance and Tier 2 Compliance withholding.

5. Tier 4 Compliance

Under the Tier 4 Compliance scenario, if 50 – 59% or less of all measurements taken during the test period in a state meet the required speed, the ETC has a Tier 4 Compliance gap. ETCs certifying to Tier 4 Compliance would be subject to the Compliance Gap Remediation Measures and the Compliance Gap Reporting Measures. USAC would be instructed to withhold 50% of the ETCs monthly support for that state until the ETC's submission shows that this Annual Test Set comes into Tier 3 Compliance. At that point, Tier 3 requirements would apply to the ETC.

In the event an ETC's annual test set remains in Tier 4 Compliance for 6 months (two quarterly reporting periods), USAC will be instructed to withhold 100% of the ETC's support for that state and will commence recovery action for a percentage of support that is equal to the ETC's compliance gap plus ten percent of the ETC's support that has been paid to that point.

The Commission Should Adopt the Following Technological Principles When Instituting any Broadband Measurement Proposal Under the CAF

During the meeting, USTelecom noted that it has consistently supported certain principles relating to the manner in which the Commission should approve broadband testing under the CAF,⁹ including that the Commission should ensure flexibility for ETCs in their implementation of CAF broadband measurement obligations.¹⁰ As discussed by USTelecom,

⁹ See, Letter from Kevin G. Rupy, Vice President, USTelecom, to Marlene H. Dortch, Secretary, Federal Communications Commission, WC Docket No. 10-90, pp. 1 – 4 (June 5, 2015) (*USTelecom June 2015 Ex Parte*).

¹⁰ See, *USTelecom June 2015 Ex Parte*, pp. 1 – 2. See also, Letter from Kevin G. Rupy, Vice President, USTelecom, to Marlene H. Dortch, Secretary, Federal Communications Commission,

Ms. Marlene Dortch
May 23, 2017

determinations are best made by individual ETCs, given the broad range of factors they must assess, which can include the cost of individual solutions and their ease of implementation. USTelecom has also previously identified a range of proposals reflecting this principle.¹¹

On June 18, 2016, representatives of AT&T Services, Inc. (AT&T), met with staff from the Bureau to discuss an additional proposal for conducting CAF broadband performance testing.¹² That proposal entailed use of a software tool installed on the RG that is an integral part of receiving Internet access service (RG Software Proposal). Similarly, USTelecom noted that other of its members anticipate using equipment attached to the RG with software installed on that equipment rather than directly on the RG (RG Attachment Proposal). The only functional difference is whether the software is loaded directly on the RG or on a microcomputer directly attached to the RG.

The RG Software Proposal and the RG Attachment Proposal meet the framework of the Commission's October 2014 Public Notice.¹³ The RG Software and RG Attachment Proposals measure performance on the network path from the customer premises to testing servers at the Internet edge. Both proposals can also be used to test all types of broadband technologies (e.g., FTTH, FTTP, fixed wireless).

As to the RG Software Proposal, AT&T has explained that it uses software that functions on any RG using a Broadcom chipset, but it has noted that since similar software is available for other types of RGs and according to standards recommendations, the RG Software Proposal could in many cases be readily replicated by other carriers or made available to smaller providers via the Universal Service Administrative Company (USAC). Software-based solutions for an RG also do not require any affirmative action on the consumer's part or additional access to the customer's location to set up the testing platform. In addition, because every residential gateway would be equipped with testing software, this approach would allow carriers to measure a variety of routes. Moreover, since USTelecom's last discussion of software-based measuring approaches, such solutions are increasingly available.

WC Docket No. 10-90 (March 18, 2015) (*USTelecom March 2015 Ex Parte*) (discussing four alternative approaches developed by USTelecom for use by CAF Phase II recipients to measure broadband performance).

¹¹ *USTelecom March 2015 Ex Parte*, pp. 1 - 3.

¹² *See, AT&T Ex Parte*.

¹³ *See, Public Notice, Wireline Competition Bureau, Wireless Telecommunications Bureau, and the Office of Engineering and Technology Seek Comment on Proposed Methodology for Connect America High-Cost Universal Service Support Recipients to Measure and Report Speed and Latency Performance to Fixed Locations*, 29 FCC Rcd 12623 DA 14-1499 (released October 16, 2014).

Ms. Marlene Dortch
May 23, 2017

At the same time, not all carriers' RGs allow for a simple software update to the RG to measure broadband performance. Carriers, however, can achieve similar functionality simply by attaching a microcomputer, such as a Raspberry Pi, to the RGs. Although the RG Attachment Proposal may require marginally more work for the carrier to distribute the equipment, this solution is backwards compatible with existing RGs and allows carriers to continue with current equipment plans while still achieving all CAF performance testing goals.

USTelecom therefore urged the Commission to approve the RG Software and RG Attachment Solutions, in addition to any similar solutions, as options for CAF performance testing. Additionally, USTelecom urged to the Commission to expressly allow CAF recipients to transition between approaches as RG capabilities change.

USTelecom believes that its comprehensive broadband measurement proposal meets the needs of the Commission to monitor all CAF programs. It allows flexibility in selection of testing solutions to accommodate ETCs of different sizes, it establishes a rationale testing methodology and timeframe that provides the Commission with ample data to assess compliance, it reduces customer impact while reflecting the usage trends of rural areas, and it adopts a compliance framework that differentiates between levels of non-compliance and encourages ETCs to resolve any service issues. USTelecom respectfully urges the Commission to promptly adopt its comprehensive proposal in full.

Pursuant to Commission rules, please include this ex parte letter in the above identified proceeding.

Sincerely,



Kevin G. Rupy
Vice President, Law & Policy

cc: Suzanne Yelen
Alec MacDonell
Rodger Woock
Cathy Zima
Alex Minard
Stephen Wang

Exhibit A

Compliance Tier	Speed Test Results	Additional Form 481 Submission Obligations	Additional Broadband Testing Obligations	%'Age of CAF Funds Withheld	ETC Remediation Status
Full Compliance	95% – 100%	None	None	0%	None
Tier 1 Compliance	80% – 94%	Compliance Gap Remediation Measures ¹⁴	Compliance Gap Reporting Measures ¹⁵	0%	If no change after 12 months, ETC downgraded to Tier 2 Compliance status.
Tier 2 Compliance	70% – 79%	Compliance Gap Remediation Measures	Compliance Gap Reporting Measures	15%	When ETC shows that its annual test set comes into Tier 1 Compliance, USAC will return the withheld funds.
Tier 3 Compliance	60% – 69%	Compliance Gap Remediation Measures	Compliance Gap Reporting Measures	25%	When ETC shows that its annual test set comes into Tier 2 Compliance, Tier 2 requirements will apply. USAC will return the withheld funds up to amount reflecting difference between Tier 3 and Tier 2 withholding.
Tier 4 Compliance	50% – 59%	Compliance Gap Remediation Measures	Compliance Gap Reporting Measures	50%	When ETC shows that its annual test set comes into Tier 3 Compliance, Tier 3 requirements will apply. If an ETC's annual test set remains in Tier 4 for 6 months (two quarterly reporting periods), USAC will withhold 100% of ETCs support for that state. USAC will also commence recovery action for a percentage of support that is equal to the ETC's compliance gap plus ten percent of the ETC's support that has been paid to that point.

¹⁴ Compliance Gap Remediation Measures require the ETC to include with its Form 481 filing as a confidential attachment: a) speed test results for each subscriber location (identified by latitude/longitude)) indicating the date and time of the testing and the methodology used; and b) steps that will be taken to resolve the compliance gap, up to and including removing the subscriber locations from the HUBB.

¹⁵ Compliance Gap Reporting Measures would require the ETC to identify and retest the subscriber locations that triggered the compliance gap and report the results every quarter after the initial certification for their respective Compliance Tier. When the results of the retested locations (which may include removal from the HUBB and thus from the test set), combined with the remainder of the original annual test set qualifies the annual test set for Full Compliance, the ETC would then be relieved of its current Compliance Tier status.