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## Summary

The Petitioners share the goals of the Commission to extend and accelerate fixed and mobile broadband deployment to rural areas through the CAF program. Many of the rules adopted in the *Order* will help ensure an appropriate framework for speed and latency testing under the CAF, including flexibility in the choice of testing methods and the scaled approach to identifying subscribers for testing. The Petitioners support a framework for speed and latency testing that is appropriately balanced between ensuring that CAF recipients meet their obligations, and ensuring that administrative efficiency and overall integrity of the programs are achieved for the both the Commission and support recipients. The Petitioners therefore seek reconsideration and clarification of certain aspects of the *Order*.

***The Speed and Latency Testing Regime are Misaligned.*** The Commission should reconsider the *Order's* establishment of separate testing frameworks for speed and latency for two independent reasons. First, the Commission failed to provide adequate notice on the frequency of latency testing as required under the APA. Second, the approach adopted in the *Order* is inefficient, burdensome, and unnecessary to ensure compliance with CAF obligations, especially with respect to the many small providers that were successful bidders in the recent CAF II auction. In particular, the Commission should reconsider its decision to require substantially more latency testing than speed testing. Under the *Order*, providers are required to collect and submit for a single subscriber 2,520 latency tests per quarter as compared to 42 separate speed test results. Rather than creating two separate testing frameworks for speed and latency, the Commission should instead combine both testing requirements under a single approach to improve the efficiency of testing and limit the burdens placed on CAF recipients, without degrading the integrity or limiting oversight of the CAF program.

***The Speed and Latency Compliance Framework is Too Stringent.*** The Commission also should reconsider the *Order's* creation of a compliance framework that is too stringent, and could impede – rather than advance – broadband deployment in rural CAF-supported areas. Oddly, and without explanation, certain aspects of the framework penalize non-compliance with broadband speed and latency requirements more severely than non-compliance with build-out milestones established in the Commission's Rules. Specifically, the compliance framework would withhold essential CAF funding from CAF recipients for potentially minor and easily correctable discrepancies. A CAF recipient reporting even a minor latency compliance gap of less than 6 percent would be in Tier 1 remediation status (and immediately lose five percent of its CAF funding), but a recipient reporting a 14.9 percent build-out compliance gap would be subject only to a quarterly reporting obligation. The Commission should therefore deem a compliance percentage score of 100 percent as equal to Full Compliance. However, non-compliance of five percent or less should result in only a quarterly reporting obligation and no withholding of funding.

***The Commission Should Clarify the Speed Test Baseline and Reconsider the Order's Exclusion of Test Results Due to Overprovisioning.*** The Commission should also clarify that it intends to measure compliance with the CAF speed requirements based on whether speed test results meet or exceed the applicable CAF-mandated minimum service speed, not by comparing any given test result to the advertised speed for the service the customer purchased. In the

*Order*, the Commission clearly and correctly stated the requirement for support recipients to test compliance against these CAF-mandated minimums, not “advertised speed.” That mandate is straightforward and properly calibrated to ensure that support recipients are deploying service that meets the minimum requirements of the various CAF programs to which it applies. The Commission should also reconsider the *Order’s* decision to exclude from certification calculations any speed measurements with values greater than 150 percent of the advertised speed. That decision introduces unnecessary, unwarranted, and unjustified complications in implementing and executing that straightforward CAF compliance standard.

***Certain Aspects of the Order Require Clarification.*** Finally, certain aspects of the *Order* require clarification by the Commission. The Bureaus should clarify that testing to a remote server may include either an on-net server controlled by the ETC or, in the alternative, an IXP server in an “FCC-designated market.” Furthermore, the *Order* makes a point of designating additional FCC-designated markets but is not clear whether the Bureaus intended to require ETCs to test only at IXPs in FCC-designated markets or whether expanding the list is merely for ETC convenience. Petitioners also believe the Bureaus should clarify that ETCs are still permitted to use “the nearest Internet access point,” which may not be located in one of the Bureaus’ specified locations.”

In addition, the *Order* appears to require CAF recipients to test for speed and latency at different subscriber locations. Such an approach to speed and latency testing is administratively inefficient, highly burdensome for CAF recipients, and unnecessary to ensure appropriate testing for CAF performance compliance. By requiring testing at different subscriber locations for each category (*i.e.*, speed and latency), the Bureaus would be unnecessarily doubling the number of required subscribers for recipients to test. This would be particularly troublesome for smaller recipients, many of whom will be drawing test locations from a small group of subscribers. The Bureaus should therefore clarify that the same subscribers used by recipients for speed testing can also be used for latency testing.

Finally, the *Order* should be clarified to reflect that recipients are afforded certain flexibility in satisfying their obligations to complete hourly tests during the peak period window. In particular, the *Order* requires providers to “start separate download and upload speed tests at the beginning of each test hour window.” It is unclear from the *Order*, however, whether “the beginning” of a test hour window requires a recipient to commence testing at the top of the hour, or whether testing must commence for all test subscribers at exactly the same time. The Bureaus should clarify this language to afford recipients sufficient flexibility to tailor their testing protocols in accordance with their testing tools, while still satisfying the hourly test obligation.

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of )  
 )  
Connect America Fund ) WC Docket No. 10-90

To: Chief, Wireline Competition Bureau  
Chief, Wireless Telecommunications Bureau  
Chief, Office of Engineering and Technology

**USTELECOM – THE BROADBAND ASSOCIATION,  
ITTA - THE VOICE OF AMERICA’S BROADBAND PROVIDERS,  
AND THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION  
PETITION FOR RECONSIDERATION AND CLARIFICATION**

Pursuant to Section 1.429 of the rules of the Federal Communications Commission (Commission),<sup>1</sup> USTelecom – the Broadband Association (USTelecom), ITTA - The Voice Of America’s Broadband Providers (ITTA), and the Wireless Internet Service Providers Association (WISPA) (collectively, the Petitioners) respectfully petition the Commission to reconsider the recent order (*Order*)<sup>2</sup> issued by the Wireline Competition Bureau, the Wireless Telecommunications Bureau, and the Office of Engineering and Technology (collectively, the Bureaus) regarding Connect America Fund (CAF) broadband measurement obligations and remediation processes.<sup>3</sup> The *Order* establishes speed and latency measurement obligations for

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<sup>1</sup> 47 C.F.R. § 1.429.

<sup>2</sup> *Connect America Fund*, Order, 83 Fed. Reg. 42052, DA 18-710 (rel. July 6, 2018) (*Order*).

<sup>3</sup> In referring to the “CAF” recipients or “ETCs” (*i.e.*, eligible telecommunications carriers) throughout this Petition, the Petitioners note that this refers to current and future recipients of CAF high-cost universal service support, including price cap carriers, rate-of-return carriers, rural broadband experiment (RBE) support recipients, Alaska Plan carriers, and CAF Phase II auction winners.

recipients of CAF support providing voice and broadband service to fixed locations and imposes penalties for non-compliance.

The Petitioners seek reconsideration of the *Order*'s (1) testing regimes for speed and latency, (2) compliance framework for CAF broadband measurement, and (3) exclusion of speeds that exceed the performance minimum by more than 150 percent. In adopting certain of these requirements, the *Order* ignored provisions of the Administrative Procedure Act (APA) by failing to provide adequate notice of the proposed rules. In addition to seeking reconsideration, the Petitioners also seek clarification that (1) 'on-net' testing by ETCs is permitted, and (2) the same subscribers used by ETCs for speed testing can also be used for latency testing.

### **The Petitioners**

USTelecom is the premier trade association representing service providers and suppliers for the telecom industry. Its diverse member base ranges from large publicly traded price cap companies to small rate of return providers – all providing advanced communications services to both urban and rural markets. USTelecom and its member companies are heavily invested in the success of the CAF program, and were recipients in both the initial CAF II funding offering, as well as in the more recent CAF II reverse auction. By March 2018, CAF Phase II price cap participants (who are virtually all USTelecom members) reported geolocation information for over 1.4 million high-cost and rural locations where broadband service is now available thanks to CAF support. By this program's end in 2020 or 2021, it will have supported the delivery of broadband to over 3.6 million locations.

WISPA represents the interests of approximately 800 members dedicated to providing fixed wireless broadband service throughout the country, especially rural areas where consumers lack choice. WISPs use a combination of unlicensed, licensed and shared spectrum to deliver

cost-effective broadband service, and many of WISPA's members are also deploying fiber in their networks where it is financially and technically viable. Its members are generally small businesses with 10 or fewer employees. WISPA participated in the proceeding that led to adoption of the *Order*, generally supporting flexibility in testing to reduce burdens on small providers.<sup>4</sup> WISPA's members include RBE recipients and CAF Phase II reverse auction winners. Assuming final approval for funding, fixed wireless providers will be responsible for more than half of the \$1.488 billion in support and for deploying to more than 40 percent of the eligible locations.<sup>5</sup>

ITTA serves as the voice of America's broadband providers before federal policymakers in Washington, DC. The members of ITTA provide a broad range of high-quality broadband, wireline and wireless voice, video, and other communications services on a wholesale and retail basis to residential and business customers in predominantly rural areas across nearly all 50 states. ITTA's price cap carrier members have accepted CAF Phase I support and statewide model-based CAF Phase II support, and have placed winning bids in the CAF Phase II auction. ITTA's rate-of-return carriers receiving model-based support are using such support to deploy broadband to hundreds of thousands of locations. And ITTA's legacy rate-of-return carriers receive high-cost support to serve tens of thousands of consumers in the southeast and in the heartland.

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<sup>4</sup> See WISPA Comments, WC Docket No. 10-90 (filed Dec. 22, 2014); WISPA Comments, WC Docket No. 10-90 (filed Dec. 6, 2017).

<sup>5</sup> *FCC News Release*, "Connect America Fund Auction to Expand Broadband to Over 700,000 Rural Homes and Businesses, Auction Allocates \$1.488 Billion to Close the Digital Divide" (rel. Aug. 28, 2018).

Accordingly, the Petitioners have a strong and continuing interest in ensuring that testing procedures and non-compliance measures are reasonable and appropriate such that they do not impose regulatory burdens that are unnecessary to preserve the integrity of the CAF programs.

### **Discussion**

The Petitioners share the goals of the Commission to extend and accelerate fixed and mobile broadband deployment to rural areas through the CAF program. Many of the rules adopted in the *Order* will help ensure an appropriate framework for speed and latency testing under the CAF, including flexibility in the choice of testing methods and the scaled approach to identifying subscribers for testing. The Petitioners support a framework for speed and latency testing that is appropriately balanced between ensuring that CAF recipients meet their obligations, and ensuring that administrative efficiency and overall integrity of the programs are achieved for the both the Commission and support recipients.

#### **I. The Commission Should Reconsider the Order's Establishment of Misaligned Testing Regimes for Latency and Speed**

The Commission should reconsider the *Order's* establishment of separate testing frameworks for speed and latency for two independent reasons. First, the Commission failed to provide adequate notice on the frequency of latency testing. Second, the approach adopted in the *Order* is inefficient, burdensome, and unnecessary to ensure compliance with CAF obligations, especially with respect to the many small providers that were successful bidders in the recent CAF Phase II auction (Auction 903).<sup>6</sup> Rather than creating two separate testing frameworks for speed and latency, the Commission should instead combine both testing requirements under a

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<sup>6</sup> *Order* at ¶¶ 26 – 27. In addition to CAF Phase II auction winners, small providers who are subject to the measurement obligations may also include rural broadband experiment (RBE) support recipients and potentially some Alaska Plan carriers.



single approach to improve the efficiency of testing and limit the burdens placed on CAF recipients, without degrading the integrity or limiting oversight of the CAF program.

**A. The Bureaus' Failure to Provide Adequate Notice Violates the APA**

The Bureaus did not provide adequate notice pursuant to Section 553 of the APA that they were considering different CAF testing frequencies for the latency as opposed to the speed measurement framework.<sup>7</sup> The APA mandates that the Commission may promulgate new rules that “create new law, rights, or duties,”<sup>8</sup> but only after following the notice-and-comment procedures set forth in Section 553.<sup>9</sup> No comment was ever sought regarding the substantially different frequency of latency testing ultimately adopted, and the *Order* provides no explanation or justification for this aspect of the latency testing obligation.<sup>10</sup>

The *Order* establishes separate testing regimes for speed and latency testing that would result in carriers having to develop separate processes for each. Specifically, the *Order* requires CAF recipients to test each selected subscriber’s latency *every minute* for six hours a day for seven days each quarter,<sup>11</sup> yet requires them to test for speed performance to each subscriber just once an hour during the six-hour test window.<sup>12</sup> This means that, every quarter, latency must be

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<sup>7</sup> 5 U.S.C. § 553.

<sup>8</sup> *Fertilizer Institute v. EPA*, 935 F.2d 1303, 1307-08 (D.C. Cir. 1991).

<sup>9</sup> *See*, 5 U.S.C. § 553 (providing for general notice of proposed rulemaking to be published in the Federal Register, along with the opportunity for interested parties to participate in the rulemaking through the submission of comments).

<sup>10</sup> *See Citizens Telecommunications Co. of Minn. v. FCC*, No. 17-2296 (8<sup>th</sup> Cir. Aug. 28, 2018), slip op. at 19 (stating that the agency’s notice must be “sufficiently descriptive of the ‘subjects and issues involved’ so that interested parties may offer informed criticism and comments,” quoting *Northwest Airlines, Inc. v. Goldschmidt*, 645 F.2d 1309, 1319 (8<sup>th</sup> Cir. 1981) (internal quotation omitted)); accord. *Missouri Limestone Producers Ass’n, Inc. v. Browner*, 165 F.3d 619, 622 (8<sup>th</sup> Cir. 1999), *Ethyl Corp. v. EPA*, 541 F.2d 1, 48 (D.C. Cir. 1976).

<sup>11</sup> *Order* at ¶ 27.

<sup>12</sup> *Id.* at ¶ 28.

tested sixty times more often than broadband speed – a 5,900 percent increase over the frequency of carriers’ speed testing. The Order makes no attempt to explain why dramatically more latency tests are justified or even necessary to determine compliance with the CAF latency requirements, perhaps because they are not. The Bureaus fail to fully explain or justify either the reason for such frequent latency testing or the wide disparity between speed and latency tests, nor did the Bureaus provide adequate notice that they were considering adopting the far more stringent latency testing obligations they ultimately adopted.

The *Order* also references the Commission’s Measuring Broadband America (MBA) testing program, which combines the testing of speed and latency under a single framework, although results are recorded separately. This sharply contrasts with the testing regimes the Bureaus adopted. Specifically, in the Technical Appendix accompanying the 2016 MBA Report, the Commission noted that the “latency under load test operates for the duration of the 30-second downstream and upstream speed tests, with results for upstream and downstream recorded separately.”<sup>13</sup>

The *Order* provides no justification for departing from the MBA practice, and does not appear to discuss the fact that the Bureaus have set up two separate – and very different – testing programs, one for speed and a substantially more burdensome one for latency. But even if the MBA program did provide some support for the once-every-minute testing, the question must

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<sup>13</sup> 2016 Technical Appendix, Measuring Broadband America, Fixed Broadband, A Report on Consumer Fixed Broadband Performance in the U.S., p. 34, (rel. Dec. 1, 2016) (available at: <http://data.fcc.gov/download/measuring-broadband-america/2016/Technical-Appendix-fixed-2016.pdf>) (last visited July 31, 2018) (*MBA Technical Appendix*). The SamKnows testing documentation also states that latency testing occurs hourly. See, SamKnows, Document Reference: P005-FCC-16, *Testing Schedule for USA (Fixed)*, p. 5, August, 2016 (available at: [https://data.fcc.gov/download/measuring-broadband-america/test\\_schedule.pdf](https://data.fcc.gov/download/measuring-broadband-america/test_schedule.pdf)) (visited September 14, 2018).

still be asked and fully considered as to whether such testing is necessary to determine CAF compliance. The purposes of MBA and CAF are very different and while the former can serve as a guide, the Bureaus should not automatically apply the MBA's methods here without considering the unique needs of the CAF program.

Previous Commission actions have in fact suggested a latency testing program far more consistent with the speed testing obligations established in the *Order*. Specifically, in its 2014 Public Notice (*2014 Public Notice*),<sup>14</sup> the Commission proposed to subject CAF recipients to speed testing obligations “similar to those already adopted for latency for price cap carriers” in the Wireline Competition Bureau's (WCB's) *2013 Price Cap Order*.<sup>15</sup> The *2014 Public Notice* then stated that the Bureaus proposed to “adopt a methodology that would require *measurements to be made once hourly* during peak periods, 7:00 pm to 11:00 pm daily local time, over four consecutive weeks.”<sup>16</sup> In other words, the Bureaus envisioned a speed and latency testing framework that would align both testing parameters to “once hourly.”

In 2017, the Commission sought comment to refresh the record in this proceeding.<sup>17</sup> Again, the Commission made no reference to the frequency of latency testing, and instead made reference to the *2013 Price Cap Order* which – based on the Bureaus' own interpretation from

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<sup>14</sup> 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 (2014) (*2014 Public Notice*).

<sup>15</sup> *Connect America Fund*, Report and Order, 28 FCC Rcd 15060 (WCB 2013) (*2013 Price Cap Order*).

<sup>16</sup> *2014 Public Notice* at ¶ 9 (emphasis added).

<sup>17</sup> Public Notice, *Comment Sought on Performance Measures for Connect America Fund High-Cost Universal Service Support Recipients*, 32 FCC Rcd 9321 (2017) (*2017 Public Notice*).

the *2014 Public Notice* – envisioned latency testing “once hourly” during peak periods.<sup>18</sup>

Although the Commission did seek comment on the “Number of Tests” under the CAF framework, that inquiry was limited to testing for speed, not latency, and asked whether “four speed tests per day over the course of the testing period” would be sufficient.<sup>19</sup> In addition, although the Final Regulatory Flexibility Analysis included with the *Order* notes the accommodations made to small businesses on the number of test *locations*, it does not reflect any consideration of the burdens imposed by the *frequency* of latency testing on small businesses.<sup>20</sup>

Over the course of five years, the Bureaus consistently signaled that they would harmonize speed and latency testing rules, and never offered a hint that they would adopt such radically different testing regimes nor that they would fail to consider the burdens such testing parameters would place on small CAF recipients. On reconsideration, the Bureaus should reduce the frequency of latency testing so it matches the frequency of speed testing established in the *Order* and thereby address the inadequacy of their APA notice compliance.

**B. The Bureaus Should Reconsider Their Decision to Require Substantially More Latency Testing than Speed Testing**

The *Order* requires a recipient to collect and submit for a single subscriber 2,520 latency tests per quarter as compared to 42 separate speed test results. The *Order* makes no reference to the record for the once-every-minute decision. Nor could it. The *2013 Price Cap Order* included no requirements or criteria for the frequency with which ETCs must conduct latency tests. Rather, it merely established the overall obligation for latency testing, and allowed ETCs to “rely on existing network management systems, ping tests, or other commonly available

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<sup>18</sup> *Id.* at ¶ 7.

<sup>19</sup> *Id.* at 5 – 6.

<sup>20</sup> *See Order*, Appendix B at ¶ 29.

network measurement tools,”<sup>21</sup> as well as the Commission’s MBA program.<sup>22</sup>

Indeed, the *2013 Price Cap Order* references an Internet Engineering Task Force (IETF) proposal regarding standards for measuring latency. In this document, the IETF notes that the automated system “instructs one or more [Measurement Agents] and communicates the set of Measurement Tasks a [Measurement Agent] should perform *and when*. For example, it may instruct [a Measurement Agent] at a home gateway: ‘Measure the ‘UDP latency’ with [www.example.org](http://www.example.org); *repeat every hour* at xx.05’.”<sup>23</sup>

Unless reconsidered, the significant disparity in the number of quarterly tests for speed and latency will make it difficult for CAF recipients to combine the instructions for testing into a single process. Testing every minute may also overload some testing methods and cause testing to be disrupted. The Commission acknowledged as much in its *2017 Public Notice*, when it cited concerns that a compressed testing timeframe “could result in an additional 9 Gbps of traffic at some point during the four-hour test window at the core of the network.”<sup>24</sup>

Finally, the Bureaus offer no reason to require such extensive latency testing to prove that a recipient has met its CAF requirement. If significantly less testing is appropriate for speed testing, it should also be appropriate for latency testing. Nothing in the record suggests a different conclusion.

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<sup>21</sup> *2013 Price Cap Order* at ¶ 24.

<sup>22</sup> *Id.* at ¶ 25.

<sup>23</sup> IETF Request for Comments, *A Framework for Large-Scale Measurement of Broadband Performance (LMAP)*, p. 4 (September, 2015) (available at: [https://datatracker.ietf.org/doc/rfc7594/?include\\_text=1](https://datatracker.ietf.org/doc/rfc7594/?include_text=1)) (visited September 11, 2018) (emphasis added). *See also 2013 Price Cap Order*, at n. 57 (referencing IETF LMAP).

<sup>24</sup> *2017 Public Notice* at 5.

### C. The Commission Should Conform Latency Compliance Thresholds to Speed Compliance Thresholds

There is also a significant disparity in compliance thresholds for speed and latency. The *Order* maintains the higher 95 percent compliance threshold for latency established in 2013, which stands in stark contrast to the 80/80 threshold for speed.<sup>25</sup> The *Order* uses the lack of a challenge to the *2013 Price Cap Order* as justification for maintaining the 95 percent standard without acknowledging that virtually no other CAF rules had been established in 2013 – almost two full years before price cap carriers accepted CAF Phase II support and five years before the Commission conducted the Phase II reverse auction – and thus no future recipient could have been expected to assess the appropriateness of this prematurely adopted requirement. Since that time the full Commission has adopted reasonable CAF obligations that enable many types of broadband providers to participate and succeed in deploying broadband. For example, after initially requiring providers to complete 85 percent of their broadband build-out in three years, in 2014 the Commission adopted a six-year deployment framework with milestones that better reflect the reality of major network builds. The Bureaus were appropriately concerned about the burdens associated with overly stringent thresholds for speed testing, but did not express the same concerns for latency testing. Specifically, in adopting the 80/80 standard for speed, the Bureaus explain that this standard “allows sufficient leeway to providers so that they will meet performance standards as long as they have reasonable backhaul arrangements.”<sup>26</sup> There is no similar “leeway” given or explained for the *Order*’s adoption of a substantially higher compliance threshold for latency testing.

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<sup>25</sup> See *Order* at ¶ 4 (establishing a 95 percent threshold for latency); *id.* at ¶ 51 (establishing an 80 percent threshold for download and upload speeds).

<sup>26</sup> *Id.* at ¶ 53.

The Bureaus reasonably determined that achieving 80 percent performance of the speed requirement 80 percent of the time balances network reality with the need for compliance, but then maintains a standard for latency that counts anything other than 100 percent of the 100 ms requirement as a violation, and provides only a five percent buffer for compliance, or a 95/100 standard. In its *2013 Price Cap Order*, the WCB, based its 100 ms round-trip latency standard on the ITU G.114 standard that found that consumers were “very satisfied” with the quality of VoIP calls at up to a way mouth-to-ear latency of 200 ms.<sup>27</sup>

Although not discussed in the *2013 Price Cap Order*, that same analysis also found that consumers continue to be “satisfied” with speech quality at a one-way mouth-to-ear latency of 275 ms or a provider round-trip latency of 175 ms.<sup>28</sup> By treating a latency result that is even one millisecond above 100 ms as a violation, the Bureaus are penalizing recipients for providing users with voice quality with which they are fully satisfied. But as is the case with the significantly higher frequency of latency testing, the Bureaus provide no explanation of why a higher standard of compliance is necessary for latency.

The *Order* similarly observes that the 80/80 standard for speed also meets the Commission’s “statutory requirement to ensure that high-cost-supported broadband deployments provide reasonably comparable service as those available in urban areas.”<sup>29</sup> There is, however, no similar justification for the 95 percent latency compliance benchmark. Comparability as far as voice quality must certainly include both levels that consumers are “satisfied” with as well as those that they are “very satisfied.” By moving the latency compliance standard to one more

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<sup>27</sup>*2013 Price Cap Order* at ¶ 20 & n.55.

<sup>28</sup> *Id.*

<sup>29</sup> *Order* at ¶ 52.

aligned with the compliance standard for speed, the Commission can achieve a more harmonized testing framework for ETCs and a more efficient compliance and enforcement process for USAC and the Commission. Petitioners recommend that the Bureaus modify the latency standard to 95/175 (*i.e.*, ETCs must meet 175 percent of the latency standard at least 95 percent of the time), which more accurately reflects the range of latency that consumers find satisfactory.

## **II. The Commission Should Reconsider the *Order's* Creation of a Speed and Latency Compliance Framework That is Too Stringent and Contrary to Public Policy Objectives**

The Bureaus also should reconsider the *Order's* creation of a compliance framework that is too stringent and could impede – rather than advance – broadband deployment in rural CAF-supported areas. Oddly, and without explanation, certain aspects of the framework penalize non-compliance with broadband speed and latency requirements more severely than non-compliance with build-out milestones established in Section 54.320(d) of the Commission's Rules.<sup>30</sup>

Specifically, the compliance framework would withhold essential CAF funding from CAF recipients for potentially minor and easily correctable discrepancies. A CAF recipient reporting even a minor latency compliance gap of less than six percent would be in Tier 1 remediation status (and immediately lose five percent of its CAF funding), but a recipient reporting a 14.9 percent build-out compliance gap would be subject only to a quarterly reporting obligation pursuant to Section 54.320(d). In other words, a recipient that provides, say, 1 Gbps broadband service to 100 percent of its location milestone at 80/80 speed but with minor latency shortfalls would be subject to stricter remediation procedures (*i.e.*, five percent withholding of CAF funding) than a recipient that provides identical broadband service to just 85 percent of

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<sup>30</sup> *Connect America Fund*, Report and Order, 29 FCC Rcd 15644, ¶ 150 (2014) (*CAF Milestone Order*).



eligible locations (*i.e.*, quarterly reporting obligation).<sup>31</sup> The withholding of CAF funds for such minor and easily correctable disparities – in already challenging high-cost areas – could hinder a provider’s ability to come into full compliance. Moreover, the withholding of a significant amount of CAF support for a minor discrepancy undermines the statutory goal in Section 254 of ensuring that consumers in rural and high-cost areas of the country have access to advanced telecommunications and information services.<sup>32</sup>

The Bureaus should instead follow the precedent the Commission established for the deployment milestone framework where the first tier of non-compliance triggers simply a reporting requirement. In its *CAF Milestone Order* establishing the deployment framework for price cap providers, the Commission declined to even impose reporting obligations if an ETC missed an interim milestone “by less than 5% of the required number of locations for that interim milestone.”<sup>33</sup> In doing so, the Commission concluded that “a shortfall of less than 5% of locations for a given interim milestone should not be a concern warranting additional monitoring.”<sup>34</sup> Moreover, with respect to the final build-out milestone, the Commission afforded ETCs twelve months to cure non-compliance before USAC initiates recovery action, since the Commission’s “overriding objective is to create a framework that incents full performance.”<sup>35</sup>

The *Order* departs from these principles without explanation for Tier 1 non-compliance for speed and latency. For Tier 2 - 4 non-compliance, however, the Bureaus appropriately recognized that a recipient that fails to meet minimum speed and latency obligations would be

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<sup>31</sup> *Id.* at ¶ 150.

<sup>32</sup> 47 U.S.C. § 254.

<sup>33</sup> *CAF Milestone Order* at n. 323.

<sup>34</sup> *Id.*

<sup>35</sup> *Id.* at n. 328.

subject to a lesser support reduction than a recipient that fails to meet a build-out milestone. The Bureaus did not explain this discrepancy, either, or why it chose to adopt harsher penalties for Tier 1 than it did for Tiers 2 - 4.

The Commission should apply a similar rationale and objective in this instance with respect to its framework for speed and latency. The Commission can best “incent full performance” from recipients by providing them with a reasonable opportunity to cure any non-compliance issues, not by withholding crucial CAF funds for a tiny shortfall from a standard that arguably goes beyond the “comparability” mandate.

The Bureaus should therefore adjust the *Order’s* “Compliance Levels and Support Reductions” to deem a compliance percentage score (*i.e.*, the percentage of a provider’s reported measurements meeting the 100 ms or 750 ms standard, as applicable, divided by 95 percent)<sup>36</sup> of 100 percent as equal to Full Compliance.<sup>37</sup> However, non-compliance of five percent or less should result in only a quarterly reporting obligation and no withholding of funding. Non-compliance of 5-15 percent should result in withholding of five percent of funding. Such an approach would thereby enable the ETC to address and correct what is likely a minor network issue.

In addition, the Bureaus should make clear that, when a CAF recipient suffers a shortfall of both a build-out milestone and speed/latency, it will not be subject to “double jeopardy.” Rather, the Bureaus should reduce the support by the greater of the two amounts but not the combined percentage of the two amounts. This will avoid over-penalizing recipients and provide appropriate remediation incentives.

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<sup>36</sup> *Order* at ¶¶ 60 – 61.

<sup>37</sup> *Id.*

### **III. The Commission Should Clarify the Speed Test Baseline and Reconsider the *Order's* Exclusion of Test Results Due to Overprovisioning**

The Commission should clarify that it intends to measure compliance with the speed requirements based on whether speed test results meet or exceed the applicable CAF-mandated minimum service speed,<sup>38</sup> not by comparing any given test result to the advertised speed for the service the customer purchased. In the *Order*, the Bureaus clearly and correctly stated the requirement for support recipients to test compliance against CAF-mandated minimums, not “advertised speed.”<sup>39</sup> That mandate is straightforward and properly calibrated to ensure that support recipients are deploying service that meets the minimum requirements of the various CAF programs to which it applies. The purpose of this testing framework is to establish compliance with the conditions imposed on recipients of CAF support, and no other compliance baseline achieves that purpose.

Nevertheless, other references in the *Order* to testing by “speed tier,” “service tier,” or “performance tier,” without contemporaneous reference to CAF-mandated minimums,<sup>40</sup> as well as the *Order's* directive to exclude certain speed test results based on their relationship to “advertised speed,” introduce uncertainty into this aspect of the compliance framework. The Bureaus should take this opportunity to clarify that the sole relevant metric in determining

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<sup>38</sup> The CAF Phase II price-cap model-based requirement, including with respect to price-cap carriers that elected frozen support levels, is to deploy a network capable of meeting “a minimum speed standard of 10 Mbps downstream and 1 Mbps upstream.” *Order* at ¶ 3. Similarly, for rural broadband experiment and CAF Phase II reverse auction recipients, the speeds in the various performance tiers are minimum speeds.

<sup>39</sup> *Order* at n.146 (stating unequivocally that, “[t]he speed for which the provider should be testing is the speed required by the relevant CAF rules, not the advertised speed”).

<sup>40</sup> *See, e.g., Order* at ¶¶ 33, 36, 37, 38, 39, 40, n.118.

whether actual service speed complies with CAF requirements is whether the speed test result meets or exceeds the CAF-required minimum.

In conjunction with that clarification, the Bureaus should reconsider the *Order's* decision to exclude from certification calculations any speed measurements with values greater than 150 percent of the advertised speed<sup>41</sup> because that decision introduces unnecessary, unwarranted, and unjustified complications in implementing and executing that straightforward CAF compliance standard.

First, the exclusion of speed measurements with values greater than 150 percent of the advertised speed impermissibly extends beyond the Commission's delegation of authority to the Bureaus by introducing "truth-in-advertising" issues that are well beyond the scope of this proceeding.

The *Order* derives from the Commission's original delegation of authority in the *2011 Transformation Order* to adopt performance standards that advance the Commission's broadband universal service goals articulated in the *2011 Transformation Order*<sup>42</sup> and to refine the Commission's compliance testing methodology adopted therein.<sup>43</sup> In the *2011 Transformation Order*, however, the Commission established deployment goals and CAF performance standards to expand availability and affordability of voice and broadband services, advance reasonable comparability of services and rates between urban and rural areas, and ensure responsible stewardship of universal service funds.<sup>44</sup> The *2011 Transformation Order* did not seek to regulate advertising practices for broadband services or evaluate the accuracy of

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<sup>41</sup> *Id.* at n.145.

<sup>42</sup> *Id.* at n.5 (citing *2011 Transformation Order* ¶ 48).

<sup>43</sup> *Id.* at n. 5 (citing *2011 Transformation Order* at ¶ 112).

<sup>44</sup> *2011 Transformation Order* at ¶ 48.

“advertised” speeds.

Second, the *Order* is incorrect in concluding that “such values [*i.e.*, test results that are more than 150 percent of the advertised speed] are likely invalid.”<sup>45</sup> Many providers design their networks to overprovision service and a high speed test result does not therefore necessarily reflect a problem with the testing infrastructure. There are a variety of business methods, technologies, and network design practices that may lead broadband providers to regularly deliver speeds greater than the CAF required speed, including designing broadband networks to minimize stalling or congestion, allow for scaling beyond initial low demand on newly deployed facilities, and network management efficiencies. In addition, CAF recipients are free to meet their deployment requirements using multiple technologies which could impact the speeds seen across a testing sample of 50 subscribers. A policy excluding test results that exceed advertised service speeds would be inconsistent with the Commission’s desire to continually improve broadband speeds nationwide, and contrary to the public interest. A provider that faces the risk that test results in excess of 150 percent of its advertised speed will face a strong *disincentive* to deploy or test service improvements that might be rolled out on an unannounced or “soft launch” basis before being advertised or commercially marketed. If left in place, such a policy essentially will strangely penalize any provider that in fact does better than required for its customers.

Third, neither the Commission nor the Bureaus have offered guidance on how they would propose to compare test results to the “advertised speed” since there is no requirement to report advertised speed, nor should there be. All CAF providers are free to advertise service in a variety of ways that may vary, both across providers and indeed within a single provider from

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<sup>45</sup> *Order* at n. 145.

one marketing campaign or region or technology to another. For the reasons identified above, actual observed broadband speeds may vary based on network, atmospheric, or other conditions. As a result, advertised speeds may not be guaranteed, or a broadband service may be marketed as offering “up to” a given speed.

Fourth, the *Order*'s decision to automatically exclude speed measurements above a particular threshold is inconsistent with its simultaneous decision to include speeds below given thresholds. Specifically, the *Order* states that the Bureaus will “not automatically exclude test results that are ‘too slow,’ because those results likely reflect poor performance or network congestion, rather than fundamental problems with the testing infrastructure.”<sup>46</sup> Thus, paradoxically, if a provider deploys 25/3 Mbps broadband service to a customer in an area where 10/1 Mbps is the CAF requirement, a speed test showing that actual performance fell short at 15/2 Mbps would be deemed a “pass,” *i.e.*, greater than 10/1, Mbps while a test result showing the customer received an overachieving speed of 40/5 Mbps would be thrown out.

Given that the speed obligation for CAF recipients is to provide a minimum speed, the sole inquiry should be on whether the speed test result exceeds the CAF-required minimum speed associated with the support the provider received. Moreover, there is no policy or mathematical rationale for excluding speed measurements that exceed an “advertised speed” threshold by any specific percentage, where each test result will be counted on a pass/fail basis and where test results are not averaged. And, the Commission’s stated purpose of the testing is to establish compliance with the CAF speed minimum performance standard and monitor achievement of its broadband universal service goals, not to regulate or interpret provider advertising practices.

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<sup>46</sup> *Id.*

Finally, the *Order's* exclusion of speed results exceeding 150 percent suffers from the same APA flaws referenced earlier.<sup>47</sup> Neither the *2014 Public Notice* nor the *2017 Public Notice* sought comment on the exclusion of such data. The *2017 Public Notice* focused much of its inquiry on issues unrelated to any analysis of the specific test results, focusing instead on the daily test window,<sup>48</sup> the number of tests,<sup>49</sup> and equipment that was suitable for testing.<sup>50</sup> The *2014 Public Notice* sought comment on general issues relating to speed and latency testing, but never made reference to the actual collection – and treatment – of the collected data itself. Although the *2014 Public Notice* made vague reference to “testing parameters,”<sup>51</sup> such generic phrasing hardly constitutes sufficient notice regarding the *Order's* exclusion of speed testing results above a specific threshold.

#### **IV. The Commission Should Clarify Certain Aspects of the *Order* Regarding ‘On-Net’ Testing, and Use of the Same Subscribers for Speed and Latency Testing**

##### **A. The Commission Should Clarify That ‘On-Net’ Testing is Permitted**

The *Order* requires CAF recipients to test speed and latency from the premises of an active subscriber to a remote test server located at or reached by “passing through an FCC-designated IXP.”<sup>52</sup> It is unclear from the *Order*, however, whether an “FCC-designated IXP” includes testing to on-net servers controlled by the ETC or whether the use of specific “FCC-designated” IXPs are required. The Bureaus should therefore clarify that testing to a remote server may include either an on-net server controlled by the ETC or, in the alternative, an IXP

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<sup>47</sup> *Infra*, at 5 – 8.

<sup>48</sup> *2017 Public Notice*, at 4 – 5.

<sup>49</sup> *Id.*, at 5 – 6.

<sup>50</sup> *Id.*, at 6.

<sup>51</sup> See e.g., *2014 Public Notice* at ¶¶ 7 – 9.

<sup>52</sup> *Order* at ¶ 18.

server in an “FCC-designated market.”

Furthermore, the *Order* makes a point of designating additional FCC-designated markets but is not clear whether the Bureaus intended to require ETCs to test only at IXPs in FCC-designated markets or whether expanding the list is merely for ETC convenience. Because the Commission determined in its *2011 USF/ICC Transformation Order* that testing should be “measured on each ETC’s access network from the end-user interface *to the nearest Internet access point*,”<sup>53</sup> Petitioners also believe the Bureaus should clarify that ETCs are still permitted to use “the nearest Internet access point,” which may not be located in one of the Bureaus’ specified locations.

There is precedent for this requested flexibility. Testing under the Commission’s MBA program includes testing to both on-net and off-net servers.<sup>54</sup> The MBA’s Technical Appendix notes that test nodes for that program include both “Off-Net and On-Net” servers, the former of which included “measurement points located on the networks of some of the ISPs participating in this study.”<sup>55</sup>

In addition, allowing ETCs the flexibility to test to the nearest IXP of their choice also ensures that test results will best reflect the service delivered to their CAF customers. ETCs will of course make every effort to “influence the quality of transport purchased” and “negotiate with the transport provider for a level of service that will enable it to meet the Commission’s performance requirements,” and provide quality broadband service to their customers. However, the areas eligible for CAF support often remain unserved because of a lack of high-speed

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<sup>53</sup> *2011 Transformation Order* at ¶ 111 (emphasis added).

<sup>54</sup> *MBA Technical Appendix*, at 25 – 27.

<sup>55</sup> *Id.* at 25.



backhaul options. Fixed wireless providers serving the most remote areas, for example, may rely on multiple wireless backhaul hops using TDD unlicensed radios because there is no high-speed fiber in certain rural areas. It makes little sense to require such providers to test to a specified IXP that is up to 500 miles away and generate artificial results rather than to the “nearest” IXP (at which actual customer traffic is routed to the Internet), as expressly allowed by the Commission in 2011.

In stark contrast to the Commission’s MBA testing framework, the CAF testing framework is conducted and controlled entirely by individual ETCs. The Bureaus should therefore clarify that on-net servers are suitable for testing and compliance purposes, “FCC-designated IXP” includes any IXP operating in metropolitan areas identified in the *Order*, and, consistent with the Commission’s 2011 holding, carriers are also permitted to test to “the nearest internet access point.”

**B. The Bureaus Should Clarify That Recipients Can Use the Same Subscribers for Both Speed Testing and Latency Testing**

The *Order* appears to require CAF recipients to test for speed and latency at different subscriber locations. Such an approach to speed and latency testing is administratively inefficient, highly burdensome for CAF recipients, and unnecessary to ensure appropriate testing for CAF performance compliance. By requiring testing at different subscriber locations for each category (*i.e.*, speed and latency), the Bureaus would be unnecessarily doubling the number of required subscribers for recipients to test. This would be particularly troublesome for smaller recipients, many of whom will be drawing test locations from a small group of subscribers. The Bureaus should therefore clarify that the same subscribers used by recipients for speed testing can also be used for latency testing.

The *Order* stipulates that latency testing must be conducted on 50 subscribers, whereby

subscribers for speed testing may vary based on the ETC's respective subscribership levels. Specifically, under the *Order's* requirements for speed testing, an ETC may be required to test between 5 and 50 total subscribers.<sup>56</sup> However, it is unclear from the *Order* whether this same standard applies to latency subscribers, since the table outlining the number of subscribers is labeled "Required Test Locations for *Speed*."<sup>57</sup> Adding to this uncertainty, the *Order's* Appendix A summary describes the requirement as "a maximum of 50 randomly-selected subscribers per state per speed tier for speed testing and 50 randomly-selected subscribers per state for latency."<sup>58</sup>

There is no reason that the number of subscribers required for both speed and latency should not be identical, and ETCs should be permitted to utilize the same subscribers to test for both. The Bureaus should therefore clarify language in both the *Order* and its Appendix A summary to make clear that the same subscribers can be used for speed and latency testing. Specifically, the table outlining the number of subscribers should be revised from "Required Test Locations for Speed," to instead read "Required Test Locations for Speed and Latency."<sup>59</sup>

In addition, the *Order's* Appendix A summary should be revised to describe the requirement as, "a maximum of 50 randomly-selected subscribers per state per speed tier for speed and latency testing ~~and 50 randomly-selected subscribers per state for latency~~."<sup>60</sup> These minor revisions will provide much needed clarity to ETCs, and will also make administration of

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<sup>56</sup> *See id.* at ¶ 36.

<sup>57</sup> *Id.* at 14 (emphasis added).

<sup>58</sup> *Id.* at Appendix A.

<sup>59</sup> *Order* at 14 (proposed language underlined).

<sup>60</sup> *Id.* at Appendix A, p. 28 (proposed language underlined, and removed language reflected with a strikethrough).

CAF broadband compliance obligations more efficient.

**C. The Bureaus Should Clarify That Recipients are Afforded Certain Flexibility in Commencing Hourly Tests**

Finally, the *Order* should be clarified to reflect that recipients are afforded certain flexibility in satisfying their obligations to complete hourly tests during the peak period window. In particular, the *Order* requires providers to “start separate download and upload speed tests at the beginning of each test hour window.”<sup>61</sup> It is unclear from the *Order*, however, whether “the beginning” of a test hour window requires a recipient to commence testing at the top of the hour, or whether testing must commence for all test subscribers at exactly the same time. The Bureaus should therefore clarify this language to afford recipients sufficient flexibility to tailor their testing protocols in accordance with their testing tools, while still satisfying the hourly test obligation.

Read literally, the *Order* could suggest that a particular recipient must conduct speed testing for all of their required subscribers (*e.g.*, up to fifty) during the first minute of each hour. Certain testing infrastructures, however, can only run a limited number of speed tests simultaneously. The Bureaus should therefore clarify that “the beginning” of a test window means that a recipient should start its testing as early as possible within the given hour, with the understanding that testing of the required number of subscribers may occur at a staggered pace. Clarifying the testing obligation in this manner will ensure that recipients can efficiently administer their testing programs, without harming the integrity of the CAF testing process.

Even with a staggered commencement time, recipients would still be under an obligation to complete one successful test per subscriber each hour. As noted in the *Order*, “a significant

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<sup>61</sup> *Id.* at ¶ 28.

majority of MBA speed tests are completed within their designated 1-hour window despite consumer load.”<sup>62</sup> Moreover, the *Order* also notes that the MBA “only requires 5 re-tries, while our requirements call for retries once per minute until successful or the one-hour window is finished.”<sup>63</sup>

The Bureau gives no explanation for why specifying that retries occur “once per minute” is necessary in the CAF context and not for the MBA. Establishing such a firm standard for the timing of retries does not improve the testing process; instead, it exposes companies to to being found in violation of the rules if retries occur at two or three minute intervals instead. This would be an absurd result and a waste of compliance effort on both the part of carriers and USAC. The only relevant goal is to complete a test within the hour, and carriers should be able to retry as frequently as their systems allow until a successful test is administered. The Bureaus should therefore issue the requested clarification in order to afford recipients sufficient flexibility to tailor their testing protocols in accordance with their testing tools, while still satisfying the hourly test obligation.

## **V. Conclusion**

For the foregoing reasons, the Bureaus should grant this petition for reconsideration and clarification.

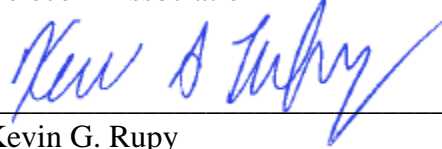
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<sup>62</sup> *Order* at n. 86.

<sup>63</sup> *Id.*

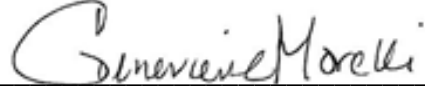
Respectfully submitted,

The USTelecom Association

By:   
Kevin G. Rupy

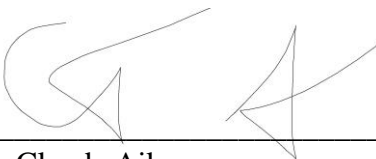
601 New Jersey Avenue, NW  
Suite 600  
Washington, D.C. 20001  
(202) 326-7300

ITTA – The Voice of America’s Broadband Providers

By:   
Genevieve Morelli

Genevieve Morelli  
President  
ITTA  
1101 Vermont Ave., NW  
Suite 501  
Washington, D.C. 20005  
(202) 898-1520

Wireless Internet Service Providers Association

By:   
Claude Aiken

President & CEO  
4417 13<sup>th</sup> Street #317  
Saint Cloud, Florida 34769  
(800) 317-2851

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