



March 18, 2015

**Ex Parte**

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

Dear Ms. Dortch:

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

On Friday, March 13, 2015, Mary Henze (AT&T), Alton Burton, Jr. (Frontier), Jeb Benedict (CenturyLink) and I met with Suzanne Yelen, Alec MacDonnell, Rodger A. Woock, Ph.D., Chris Cook, Alexander Minard and Kathy Zaima of the FCC's Wireline Competition Bureau to discuss speed compliance obligations for recipients of Connect America Fund (CAF) support providing broadband service in fixed locations. Malena Barzilai (Windstream), Hany Fahmy (AT&T), Frank Hiemstra, Dmitriy Soliterman and Kalyan Kidambi (each with Frontier) participated via conference bridge.

During the meeting, the group presented four alternative approaches developed by USTelecom for use by CAF Phase II recipients to measure broadband performance.<sup>1</sup> In developing these approaches, USTelecom ensured that they could be implemented through technologically neutral mechanisms that would be uniform for all CAF Eligible Telecommunications Carriers (ETCs) regardless of the platform over which they provide broadband service. The group presented these solutions as a suite of options, any of which could be utilized by CAF recipients for certification purposes.

The first approach would use software installed on the residential gateway that would regularly initiate speed and latency testing against performance collection servers in the network. As an integral part of the customer premises equipment (CPE) required for the broadband service, the software would 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 more flexibility than a hardware-based solution to measure a variety of routes. USTelecom members believe a software-based measuring method will be an excellent solution but noted that it is not yet widely available. While some commercially available CPE already

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<sup>1</sup> 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 (October 16, 2014) (Notice).

support measuring software, the industry is actively working towards developing and deploying this solution more broadly in the near term. USTelecom urged the Commission to approve a software solution as an option for CAF measuring and to expressly allow CAF recipients to transition to a software-based measurement methodology even if they must first meet this requirement with a hardware method.

The second approach discussed was a hardware based solution that involves the placement of “white boxes” similar to those used in the Measuring Broadband America (MBA) initiative. The placement of the additional hardware would require customer approval and access to the customer premises. As with any hardware solution, performance testing is then limited to the routes where the hardware is placed. The group clarified, however, that their proposed approach would be separate from the Commission’s MBA effort and would be undertaken by each CAF recipient as part of their overall compliance requirements. USTelecom members support the proposal to have a white box program administered by the Universal Service Administrative Company (USAC), with carriers securing white boxes for testing purposes from USAC. However, carriers should also have the option to purchase white boxes and administer their own performance measurement testing to meet this compliance requirement.

The third and fourth approaches are also hardware-based and involve the installation of Raspberry Pi micro-computers that are pre-loaded with the necessary speed testing code on the device.<sup>2</sup> Under the first of these installations, the Raspberry Pi device would be located on the CPE in the customer’s home similar to the white box method. Throughput and latency tests would be started from the specific CAF II customer site all the way through to the performance server. The device can be configured to account for any home network anomalies, such as differing connections to the home router (e.g., WiFi or Ethernet), and the ability to detect cross traffic and user activity.

The fourth and related installation would place the Raspberry Pi micro-computer on the ISP’s digital subscriber line access multiplexer (DSLAM). Rather than a stand-alone option, this additional configuration would serve as a check on measurements to ensure accurate results. A measurement device attached to a client port of the DSLAM will give an accurate reading on the health of the remainder of the DSLAM and its upstream transport (i.e., middle mile) but would not account for any home network anomalies.

The group also discussed various administrative and logistical issues related to broadband metrics testing under the CAF and emphasized the need for every CAF recipient to have the option of selecting the measurement method that best suits their situation. The group agreed that use of CAF funds to enable USAC and/or an individual carrier to establish and administer a testing program (i.e., purchase and placement of performance testing servers) should be approved. The group also requested clarity regarding the number of testing locations that would be required, as well as flexibility should there be issues with certain locations.

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<sup>2</sup> See Raspberry Pi, *Homepage*, (available at: <http://www.raspberrypi.org/>) (last accessed March 16, 2015).

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Finally, the group asked for guidance regarding the entity that will be hosting network-side servers to the extent they are required to be “off-network.”

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 MacDonnell  
Rodger A. Woock, Ph.D.  
Chris Cook  
Alexander Minard  
Kathy Zaima