



June 2, 2015

Via ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Subject: *Written ex parte presentation – WC Docket No. 10-90
Latency standards in Connect America Fund Phase II competitive bidding*

Dear Ms. Dortch:

With this filing, Hughes Network Systems, Inc. (“Hughes”) provides specific values for the latency tests that the Commission should adopt to implement Hughes’s proposal¹ for public interest obligations for Connect America Fund (“CAF”) Phase II recipients that will ensure that winning bidders “offer sufficiently low latency to enable use of real-time applications, such as VoIP,” as such recipients are required to do, while remaining consistent with the Commission’s commitment to technological neutrality.²

As Hughes previously has pointed out, satellite broadband providers use advanced technological features to provide consumers with an excellent broadband experience.³ In Hughes’s case, these include SmartFetch, which reduces the number of round trips needed to retrieve all the content in a website, and SmartCompression, which reduces the amount of data that must be transferred for a webpage to load.⁴ These and other SmartTechnologies built into Hughes’s service allow Hughes to provide a quicker and more responsive Internet browsing experience for consumers – even with the inherent round-trip time to the satellites – than terrestrial providers that do not optimize their delivery of Internet content. In short, there is much more to the consumer experience than the simple time that it takes the electrons to travel from point A to point B.

Hughes’s March 27, 2015 ex parte submission proposed measures that would reflect this reality better than a simple numeric latency measurement – specifically, a web page loading time test for web browsing and an R-Factor test using the E-Model for voice in order to ensure that these “real-time applications” provide a satisfactory consumer experience consistent with the public interest standard adopted in the *USF/ICC Transformation Order*.⁵

In this filing, Hughes proposes specific values for each of these tests that would form the latency standards for participants in CAF Phase II competitive bidding.

¹ Letter from Jennifer A. Manner, EchoStar, to Marlene H. Dortch, FCC, WC Docket No. 10-90 (filed March 27, 2015) (“Hughes March 27 Ex Parte”).

² *Connect America Fund, et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17698 ¶ 96 (2011), *aff’d sub nom. In re: FCC 11-161*, 753 F.3d 1015 (10th Cir. 2014) (“*USF/ICC Transformation Order*”).

³ See, e.g., Hughes News Release, “New HughesNet Gen4 Plans Boost Speed and Efficiency with Innovative SmartTechnologies,” attached to Letter from Letter from Jesse T. Jachman, Hughes, to Marlene H. Dortch, FCC, WC Docket No. 10-90 (filed January 23, 2010) (“Hughes SmartTechnologies Announcement”).

⁴ *Id.*

⁵ Hughes March 27 Ex Parte at 2-4.

Web Page Loading Test. Hughes proposes a web page loading time standard of 5 seconds (5,000 ms). This proposal is based on data on web page loading times from the Commission's most recent Measuring Broadband America ("MBA") report,⁶ data submitted for the next MBA report, and projections based on increasing website security and complexity over time. Hughes further proposes that the web page loading time standard be reviewed periodically to ensure it remains consistent with these data.

The 2014 MBA report – based on data that is now two years old – shows web page loading times for services in the 6-10 Mbps and 12-15 Mbps categories ranging from 0.9 seconds to 3.2 seconds.⁷ In addition, Hughes's proposal takes account of the fact that increases in the complexity and security of websites are driving loading times up for all types of providers over time.⁸ More and more websites are adding secure sockets layer (SSL) security that delays loading times, and websites are also increasingly complex, requiring Internet service providers to fetch different objects and files from different locations to completely load a page. As a result of this evolution of the Internet, the data that Hughes has seen for the forthcoming MBA report will show slower web page loading times for all technologies at all speed thresholds. The 5 second figure was selected to ensure that all technologies providing speeds at or above CAF Phase II requirements are able to meet the requirement, consistent with the Commission's commitment to competitive neutrality.⁹

Given that this value appropriately should be set based on public data about page loading times for broadband services providing service at CAF-qualifying speeds, the threshold should be revisited periodically to ensure that it continues to reflect marketplace performance.

R-Factor Test for Voice. Hughes recommends a threshold R-factor value of 52, computed with an allocation of 0 (zero) for the Advantage Factor (A) specified by the ITU formula. The Advantage Factor is an optional, subjective value intended to raise the score of certain technology (including satellite or mobile operators) to allow for some intrinsic advantage that the technology provides – for example satellite's ability to serve the most remote locations or mobile wireless operators' ability to provide mobility. By setting the Advantage Factor (A) to zero, the proposed threshold of 52 measures only the network performance of the service provider. A threshold of 52 will allow competition by providers using the current terrestrial technologies (such as fiber, cable, and high speed DSL) as well as other technologies (such as LTE or fixed satellite services).

Conclusion. Adopting a web-page loading time test and a R-factor test for voice using the E-model, with the values discussed herein, as latency standards for CAF Phase II competitive bidding participants will meet the Commission's requirement that such participants be required to provide sufficiently low latency to deliver real-time applications such as VoIP. Unlike other standards, this approach has the advantage of also allowing the Commission also to comply with its competitive neutrality rule. Hughes urges the Commission to adopt these standards without further delay.

Sincerely,

/s/

Jennifer A. Manner
Vice President, Regulatory Affairs

cc (email): Carol Matthey
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⁶ MEASURING BROADBAND AMERICA – 2014: A report on Consumer Wireline Broadband Performance in the U.S., FCC OET/CGB (2015) at Charts 15.2-15.3, available at <https://www.fcc.gov/reports/measuring-broadband-america-2014>.

⁷ *Id.*

⁸ Based on data submitted for the 2015 MBA, Hughes believes that the next report will show higher loading times across all technologies.

⁹ *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776, 8801 ¶ 47 (1997) (subsequent history omitted).