

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )  
 )  
Inquiry Concerning the Deployment of Advanced ) GN Docket No. 14-126  
Telecommunications Capability to All Americans )  
In a Reasonable and Timely Fashion, and Possible )  
Steps to Accelerate Such Deployment Pursuant to )  
Section 706 of the Telecommunications Act of )  
1996, as Amended by the Broadband Data )  
Improvement Act )

To: The Commission

**COMMENTS OF O3B LIMITED**

O3b Limited (“O3b”) welcomes the opportunity to submit these comments in response to the Commission’s Tenth Broadband Progress Notice of Inquiry (“NOI”).

**I. BACKGROUND**

O3b is a global broadband satellite system in medium Earth orbit (“MEO”) that has launched a constellation of eight non-geostationary (“NGSO”) satellites that offers satellite capacity and high speed connectivity to Internet Service Providers, telecom operators, large enterprises and governments, to enable fast, flexible and affordable broadband connectivity in locations unserved or underserved by other broadband services. O3b does not sell directly to consumers and instead provides middle mile capacity to large service providers that use O3b’s satellite capacity to provide service to end users. O3b’s MEO orbital altitude<sup>1</sup> and high power, spot-beam design allows the satellite system to deliver very high-speed, low-latency broadband connectivity to large service providers and entities. In fact, the latency and data speeds provided over the O3b satellite system are comparable to terrestrial fiber services. O3b has commenced worldwide commercial service around the globe.

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<sup>1</sup> O3b’s satellites orbit the Earth at 8062 km while geosynchronous satellite systems orbit at 36000 km. This lower altitude enables the O3b system to provide high speed, low latency services.

## **II. O3B'S SYSTEM PROVIDES DATA RATES THAT MEET THE COMMISSION'S CURRENT AND PROPOSED BROADBAND SPEED BENCHMARKS**

O3b supports a broadband benchmark speed that will enable users to utilize high-quality voice, data, graphics and video telecommunications applications. The O3b system is capable of providing data rates up to 1.6 Gbps<sup>2</sup> per beam. As a result, O3b's high throughput satellite system allows service providers to offer broadband service at both the Commission's current benchmark of 4 Mbps up and 1 Mbps down, and at the benchmark proffered in the NOI, of 10 Mbps up and 1 Mbps down.

O3b's current customers are already experiencing the reliable and consistent level of advanced broadband capabilities that the Commission seeks to roll out in the NOI. For example, Telecom Cook Islands, O3b's first customer, is offering broadband speeds of up to 12 Mbps to customers.<sup>3</sup> In Papua New Guinea, an island with a tropical climate and a large rainforest, O3b provides a local mobile wireless operator with high speed trunking capacity, at speeds of over 450 Mbps.

## **III. THE COMMISSION'S LATENCY BENCHMARK SHOULD BE BASED ON THE ACTUAL REQUIREMENTS OF REAL TIME BROADBAND APPLICATIONS**

The Commission asks for comment on whether it should establish a 100 millisecond ("ms") latency threshold for the definition of "advanced telecommunications capability."<sup>4</sup> In O3b's view, the Commission would be in error if it established 100 ms latency as the benchmark when higher latencies are fully capable of supporting advanced telecommunications capability. In its NOI, the Commission cites to an ITU study that states that consumers are very satisfied with the quality of VOIP calls with a mouth-

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<sup>2</sup> Each beam provides 800 Mbps up and 800 Mbps down. O3b's satellites have ten customer beams on each spacecraft. O3b's satellite system consists of eight satellites today. Four more satellites are under construction for launch in early 2015.

<sup>3</sup> <http://www.telecom.co.ck/content/page/internet-broadband-plans/m/2/>. The Cook Islands do not have a fiber cable connected to the island and their only access to the internet is through satellite. See <http://www.submarinecablenet.com/>.

<sup>4</sup> *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, Tenth Broadband Progress Notice of Inquiry ("NOI"), GN Docket No. 14-126, FCC 14-113, ¶ 26.

to-ear latency of approximately 200 ms, and satisfied with latencies of up to 300 ms.<sup>5</sup> However, the Commission does not provide any sources indicating that high-quality voice, data, graphics, and video telecommunications applications require a latency of 100 ms or less.

With O3b's lower orbital altitude and high power, spot-beam design, O3b reliably provides latency between 120 ms and 150 ms.<sup>6</sup> With this latency level O3b's customers have demonstrated high customer satisfaction for key real-time broadband applications, including cloud-based services, video and voice conferencing, video streaming, and real-time multiplayer video games.<sup>7</sup> It is thus clear that higher latency thresholds than proposed by the Commission already enable "advanced telecommunications capabilities."

Therefore, O3b suggests that if the Commission decides to establish a latency benchmark, it should establish one that is higher than 100 ms and one based on the real world needs of advanced telecommunications applications. Systems with latencies higher than 100 ms can support real time advanced telecommunications applications and the Commission should not impede the provision of quality service in order to impose an artificial threshold. The Commission is right to consider the effects of latency for the purpose of benchmarking advanced telecommunications capability but the Commission should not exclude systems that can support real time broadband applications by imposing latency thresholds that are not truly necessary to enable high quality service to end users.

#### **IV. O3B CAN DEPLOY BROADBAND SERVICES TO UNDERSERVED RURAL AND TRIBAL COMMUNITIES**

O3b agrees with the Commission that the pronounced lack of broadband access for Americans living in rural areas and on Tribal lands should be addressed. It is O3b's mission to bridge the digital divide and

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<sup>5</sup> See *NOI* at n. 62.

<sup>6</sup> See "What is Network Latency and Why Does It Matter?", [http://www.o3bnetworks.com/media/40980/white%20paper\\_latency%20matters.pdf](http://www.o3bnetworks.com/media/40980/white%20paper_latency%20matters.pdf).

<sup>7</sup> O3b customers have successfully demonstrated that the O3b satellite system supports cloud-based services such as Citrix and Sharepoint, video and voice conferencing services such as Skype and Blue Jeans, video streaming services such as Netflix and YouTube, and multi-player video games such as Halo and Call of Duty.

to provide access to high speed internet service where it is not already available. O3b's system is uniquely equipped to provide connectivity where terrestrial wireline and wireless providers have not built out their infrastructure and to facilitate increased competition in regions where there may be few high speed internet service providers. O3b's low latency broadband satellite system works collaboratively and cost-effectively with terrestrial operators to provide high speed internet connectivity to remote and isolated regions and could facilitate broadband deployment to many American rural and Tribal communities.

## **V. CONCLUSION**

The O3b satellite system is capable of enhancing the deployment of advanced telecommunications capabilities to Americans. O3b's network provides very high speed connectivity that serves both the Commission's current, as well as the new, benchmark for advanced broadband speeds proposed in the NOI. O3b's orbital altitude allows it to provide a low latency service (as low as 120 ms) that has been demonstrated to support broadband applications and advanced telecommunications capabilities. O3b encourages the Commission to contemplate innovative new telecommunications systems, such as O3b's satellite network, when developing policies and strategies for resolving the disparity between broadband deployment to urban and to rural and tribal communities. O3b appreciates the Commission's efforts to determine whether advanced telecommunications capability is being deployed to Americans in a reasonable and timely fashion.

Respectfully submitted,

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September 4, 2014