Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
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	)	GN Docket No. 09-137

JOINT COMMENTS OF HUGHES NETWORK SYSTEMS, LLC
AND WILDBLUE COMMUNICATIONS, INC. – NBP PUBLIC NOTICE #1

Hughes Network Systems, LLC
Steven Doiron
Senior Director, Regulatory Affairs
1171 Exploration Lane
Germantown, MD 20876

WildBlue Communications, Inc.
Robert S. Koppel
Vice President, Government Affairs
5970 Greenwood Plaza Blvd., Suite 300
Greenwood Village, CO 80111

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SUMMARY

Hughes Network Systems, LLC ("Hughes") and WildBlue Communications, Inc. ("WildBlue," and together with Hughes, the "Broadband Satellite Commentors") jointly submit these comments in response to the Commission's Public Notice seeking "tailored comment" on defining "broadband" for purposes of the development of a National Broadband Plan and related purposes. Hughes and WildBlue are the largest satellite Internet access providers in North America, providing satellite broadband connectivity to more than 800,000 consumer and small business subscribers.

The Broadband Satellite Commentors urge the Commission to define broadband in a functional manner that focuses on the needs and expectations of residential users and emphasizes consumer choice and cost-effective service. In particular, the Broadband Satellite Commentors recommend that the Commission define broadband as a dedicated Internet access service that enables consumers to easily use core on-line applications – such as e-mail, social networking, healthcare/telemedicine, educational and job-training programs, information dissemination, and the downloading of entertainment materials. These core requirements can be satisfied with dedicated Internet access, at advertised speeds of at least 768 kbps downstream and 200 kbps upstream.

The 768 x 200 kbps metric applies across all broadband delivery platforms (*i.e.*, is assessable on wired systems, satellite and other wireless systems, and on systems that employ a mix of wired and wireless routings), and does not impinge upon the reality that different geographical areas may require different broadband delivery solutions. Since this metric by itself is sufficient to separate broadband from non-broadband, other performance indicators and thresholds are not essential to the regulatory process in a functioning marketplace, and thus should be considered technical details that are best left to the providers.

The Broadband Satellite Commentors note that the Public Notice contains a narrow Commission inquiry on just one of the many elements that will go into the formulation of the National Broadband Plan. It is exceedingly difficult to provide a definition of "broadband" in a vacuum, without context as to how this definition will be used.

The aim of Congress in the Recovery Act and elsewhere is to ensure that all people of the United States have access to broadband service. There is no disagreement whatsoever that satellite broadband systems, which offer ubiquitous, cost-effective coverage of the nation's rural and urban areas today, are and must remain an essential part of any national broadband solution. The functional approach to the definition of broadband that is urged here is fully consistent with the national objectives that Congress has established.

Finally, the Broadband Satellite Commentors observe that the availability and practicability of broadband service cannot be determined without addressing the affordability of service to the end user. In this respect, the Broadband Satellite Commentors urge that the discussion and derivation of a broadband definition not be isolated from the overall role of that definition in the National Broadband Plan, and that consideration be given by the Commission and other Federal agencies to the notion that end-user financial subsidies will promote immediate and effective expansion of broadband usage, and will prevent a situation where limited stimulus dollars are squandered on absurdly expensive per-user costs and extreme time delays associated with the expansion of fiber-optic broadband delivery systems to the nation's 14 million rural households that are unserved by broadband today.

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Hughes Network Systems, LLC ("Hughes") and WildBlue Communications, Inc. ("WildBlue," and together with Hughes, the "Broadband Satellite Commentors")[1] jointly submit these comments in response to the Commission's Public Notice seeking "tailored comment" on defining "broadband" for purposes of the development of a National Broadband Plan and related purposes.[2]

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[1] Hughes and WildBlue are the largest satellite Internet access providers in North America, providing satellite broadband connectivity to more than 800,000 consumer and small business subscribers. The parties jointly filed comments and reply comments in the proceeding concerning development of a National Broadband Plan, GN Docket No. 09-51.

[2] *Comment Sought On Defining "Broadband,"* Public Notice DA 09-1842 (rel. August 20, 2009) ("Public Notice"). Congress directed the Commission to develop a National Broadband Plan through the American Recovery and Reinvestment Act of 2009. *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 at § 6001(k)(2) (2009) ("Recovery Act").

In the view of the Broadband Satellite Commentors, the level of broadband service that is demanded by corporate, governmental or the most sophisticated residential or small business users inevitably far exceeds the level of broadband service that will accommodate the needs and expectations most users have at their homes or in their workplaces. It would be wasteful of limited taxpayer resources and counterproductive to the aims of the Recovery Act for the Commission to develop a National Broadband Plan which assures that all people of the United States have access to a broadband capability that is desired or required only by a few. The better approach is to define broadband in forward-looking terms that assure that users' core requirements for on-line Internet access are accommodated, and adopt measures that assure that this basic level of service is available and affordable to all.

As detailed below, the Broadband Satellite Commentors urge the Commission to define broadband in a functional manner that focuses on the needs and expectations of residential users and emphasizes consumer choice and cost-effective service. In particular, the Broadband Satellite Commentors recommend that the Commission define broadband as a dedicated Internet access service that enables consumers to easily use core on-line applications – such as e-mail, social networking, healthcare/telemedicine, educational and job-training programs, information dissemination, and the downloading of entertainment materials. These core requirements can be satisfied with dedicated Internet access, at advertised speeds of at least 768 kbps downstream and 200 kbps upstream. Faster speeds are still broadband, of course, but slower speeds (especially 56 kbps dial-up service) will not enable most users to have the on-line access level that is required for a satisfactory broadband experience. The 768 x 200 kbps metric applies across all broadband delivery platforms (*i.e.*, is assessable on wired systems, satellite and other wireless systems, and on systems that employ a mix of wired and wireless routings), and does not impinge upon the reality that different geographical areas may require different broadband delivery solutions. Since this metric by itself is sufficient to separate broadband from non-broadband, other performance

indicators and thresholds are not essential to the regulatory process in a functioning marketplace, and thus should be considered technical details that are best left to the providers.

The Public Notice contains a narrow Commission inquiry on just one of the many elements that will go into the formulation of the National Broadband Plan. Although the Broadband Satellite Commentors respond here to the Commission's inquiry, they must emphasize that it is exceedingly difficult to provide a definition of "broadband" in a vacuum, without context as to how this definition will be used. It is one thing to define "broadband" for reporting and information gathering purposes, as the Commission has done with its recent revisions to Form 477. It is quite another thing to define "broadband" for eligibility or gating purposes – for example, eligibility for broadband stimulus or universal service funds. In defining broadband for eligibility purposes, the Commission must be careful not to interfere with consumer choice, marketplace developments, and the rapid evolution of technology.

The aim of Congress in the Recovery Act and elsewhere is to ensure that all people of the United States have access to broadband service. There is no disagreement whatsoever that satellite broadband systems, which offer ubiquitous, cost-effective coverage of the nation's rural and urban areas today, are and must remain an essential part of any national broadband solution. The functional approach to the definition of broadband that is urged here is fully consistent with the national objectives that Congress has established.

I. Broadband Should Be Defined In A Functional Manner That Establishes A Realistic Baseline That Takes Into Consideration The Core Requirements Consumers Everywhere Have For Access To On-Line Applications.

A. Form, Characteristics, And Performance Indicators.

The Commission first seeks comment on the general form, characteristics and performance indicators that should define broadband.[3] This inquiry must begin with, and should never lose sight

[3] Public Notice at 2.

of, the overarching goal of the National Broadband Plan, which is "to ensure that *all* people of the United States have access to broadband capability."[4]

In defining broadband, the Commission must focus on the needs of actual and prospective broadband users. Doing so requires a functional approach, and the Broadband Satellite Commentors recommend that the Commission define broadband as a dedicated Internet access service that enables consumers to easily use core on-line applications – such as e-mail, social networking, healthcare/telemedicine, educational and job-training programs, information dissemination, and the downloading of entertainment materials, including music, photographs and videos. Cost-effectiveness is also an important element, and this functional definition will enable the National Broadband Plan's focus to be where it should be – on affordably meeting the real world needs and expectations of end users without regard to location, income, or other potential obstacles to universal broadband access.

As the comments and reply comments filed in response to the National Broadband Plan Notice of Inquiry make plain, there are a significant number of factors with the potential to influence how broadband is defined, as well as significant disagreement as to how those factors should be applied. While the Commission could conceivably establish a multifaceted and highly quantitative broadband definition to account for these variables, the better approach is to adopt a functional, largely qualitative threshold definition that allows consumers to choose their Internet access providers based on a balancing of the factors – such as throughput, traffic loading, reliability, mobility, and, of course, cost – that are the most salient to them.[5]

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[4] Recovery Act § 6001(k)(2) (emphasis added).

[5] The Broadband Satellite Commentors emphasized in their National Broadband Plan comments that "performance" factors not mentioned in the Public Notice, such as ease of installation, date of availability, and cost of equipment (both to the home and in the home), are relevant considerations for consumers. Joint Comments of Hughes Network Systems, LLC and WildBlue Communications, Inc., GN Docket No. 09-51 at 7.

The only core requirement in terms of performance indicators that is needed for this purpose is downstream and upstream data speeds. To simplify the Commission's role in assessing whether this indicator is met, and to minimize the need for difficult comparisons and case-by-case consideration of waiver requests or claims of mitigating circumstances that result from difficulties associated with end-to-end assessments involving multiple interconnected networks, data speeds should be taken at service providers' advertised speeds. As the Broadband Satellite Commentors explain in Section I.B below, a broadband platform that provides data to its users at advertised downstream minimum speeds of 768 kbps and upstream minimum speeds of 200 kbps will be more than capable of meeting the functional baseline requirements for broadband service. With the adoption of this data speed metric as part of a functional, bottom-up approach to broadband, there is but a single definition, and no need for the complication of multiple or tiered definitions.

The best role for other performance indicators in the regulatory scheme in a functioning marketplace is as data points that should, where relevant to the user during the provider selection process, be disclosed to end users making a selection among available broadband options. The indicators themselves, as potentially regulated elements, are multidimensional variables that are inherently difficult to isolate and standardize, and have no direct bearing on actual consumer on-line access needs or the extent to which those needs are satisfied.

One performance indicator that is mentioned in the Public Notice requires special comment from the Satellite Broadband Commentors. "Latency" is a technical term that has often been used pejoratively by terrestrial competitors to satellite, particularly with respect to Internet access service. They have suggested that satellite service suffers from a time delay due to the distance the satellite signal must traverse between the ground and the satellite that renders it deficient from a broadband service standpoint. While this view of latency is greatly misleading, it highlights the danger of having the Commission rely upon technical performance indicators as a means of defining broadband.

All Internet access technologies have limitations.[6] A packet originating on a terrestrial network will face delays as it is processed by a number of separate routers before it can reach the edge of the terrestrial ISP's network. Because satellite networks streamline the infrastructure and reduce the number of handoffs by using a link that simultaneously serves as the middle-mile and final-mile legs, the impact of the satellite signal-path distance is significantly reduced. Many core on-line applications provided over satellite networks, such as e-mail, file transfers, and entertainment downloading, are not affected by latency. For the applications that are impacted by latency, satellite broadband providers are rapidly improving their own software so as to minimize transmission delays.

B. Thresholds.

The Commission next seeks comments to help it identify the acceptable thresholds for performance indicators that are to be included in the definition of broadband. As noted above, the Broadband Satellite Commentors recommend that the sole quantitative element of an otherwise functional definition of broadband is advertised downstream and upstream minimum data speeds. To qualify as broadband, a platform should offer Internet access to its customers at advertised speeds of at least 768 kbps downstream and 200 kbps upstream.

At these speeds, consumers can easily access the core on-line applications they need. Because the threshold is targeted at the minimum data speed necessary to provide access to core on-line applications, faster data speeds are encompassed within the definition. Using the minimum speed ensures that all broadband delivery platforms – from the fastest wired systems used in urban

[6] For instance, terrestrial wireless technologies such as WiMAX face issues of multipath interference and terrain blockage, especially in an urban environment. DSL deployments face limitations depending on the quality of the twisted pair networks (*e.g.*, poor splices, water infiltration into cables) that can lead to reductions in data rates or periodic reductions in signal-to-noise levels. All internet service providers ("ISPs") using terrestrial-based deployments must continuously deal with the deterioration of their infrastructure, exposing pockets where customers have diminished broadband capacity until maintenance issues can be resolved.

cores, to the satellite and other wireless platforms that are necessary to deliver broadband to the millions of people who live and work in the nation's rural areas – are treated fairly. The adoption of a minimum data speed requirement of 768 x 200 kbps is thus both a meaningful threshold for separating broadband from non-broadband Internet access, and one that encompasses both wireless and wireline platforms.

Importantly, the minimum data speed requirement of 768 x 200 kbps endorsed here also matches the broadband threshold recently adopted by the Rural Utilities Service of the Department of Agriculture and the National Telecommunications and Information Administration of the Department of Commerce in their Notice of Funds Availability ("NOFA").[7] By including this requirement in its own definition of broadband, the Commission will foster an important sense of consistency across federal broadband policies.

Invariably, some parties filing comments in this proceeding will seek to convince the Commission that the definition of broadband must involve minimum throughput speeds fast enough to accommodate all of the latest cutting edge applications. The Commission should reject this approach as counterproductive to the aims of Congress and contrary to the overall public interest. Consumers do not necessarily need or, as real-world experience bears out, want to pay the price premium associated with on-line access at the highest bandwidths. For example, the majority of customers of the Broadband Satellite Commentors opt for lower-cost, slower-speed service when offered a choice of broadband service plans. The large number of Americans who continue to subscribe to DSL despite current access to faster broadband alternatives such as cable and/or fiber offers further evidence that considerations such as cost can, and often do, outweigh performance considerations. The ultimate definition of broadband, therefore, should reflect actual consumer

[7] Broadband Initiatives Program; Broadband Technologies Opportunities Program, 74 Fed. Red. 33104, 33108-09 (July 9, 2009).

preferences through a minimum threshold that enables consumers to easily use core on-line applications.[8]

The Broadband Satellite Commentors cannot envision how the concept of multiple, escalating tiers of minimum thresholds (*see* Public Notice at 3) will meaningfully contribute to the provision of affordable broadband service to all end users in this country who desire such service, or avoid the pitfalls associated with unnecessary intrusion by the Commission into the consumer choice between available services.[9] First of all, there is no reliable way today to set meaningful regulatory thresholds that would be appropriate for future core on-line applications. The development of broadband technical capabilities and standards occurs in parallel with – and generally slightly to moderately ahead in time of – the development of the appropriate regulatory regime. Second, regulatory intervention into the technical track should, as a rule of thumb, be limited as long as broadband providers are able to enter the field and are properly incentivized by market forces to strive to improve technical performance to meet and anticipate rising consumer expectations, and as long as the resulting technical standards are not developed in a manner that allows particular innovators to distort the marketplace in ways that are either anticompetitive or have a negative impact on end users.

C. Updates.

The Commission lastly requests comment on how the definition of broadband should be reevaluated over time given the rapid changes that mark the Internet and broadband generally.[10] In

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[8] If a service is sufficiently reliable and is priced fairly, for example, end users will subscribe to that service and ensure its viability. A service that is insufficiently reliable or is reliable but not affordable will suffer the opposite fate.

[9] That said, the Broadband Satellite Commentors have no objection to the current reporting requirements relating to Form 477 regarding different tiers of broadband, so long as such tiers are used only for informational purposes.

[10] Public Notice at 3.

the National Broadband Plan proceeding, the Broadband Satellite Commentors explained that a broadband definition that relies too heavily on static performance metrics invites obsolescence because that definition would invariably fail to keep up with technological improvements and evolving consumer needs.[11] In contrast, a functional broadband definition, such as the one advocated here, generally avoids obsolescence by eschewing artificial and potentially limiting preclusive thresholds. At the same time, such a definitional approach provides sufficient regulatory certainty to providers and consumers alike, and promotes administrative efficiency by minimizing the need for burdensome Commission factual determinations and assessments. The Commission can, and should, sidestep the problems associated with reevaluating what broadband is by adopting a definition that accommodates all technologies that can provide to consumers access to the core on-line applications they desire.

II. The Definition Of Broadband In The National Plan Must Be Considered In The Context Of How Cost-Effective Broadband Service Will be Made Available And Affordable To All People Of The United States.

A consumer's choice among broadband service providers is inextricably linked to the cost of that service. In the view of the Broadband Satellite Commentors, it is within the responsibility of the Commission and associated regulators to include in the National Broadband Plan measures that account for a technology's cost-effectiveness and ensure that end users have affordable access to broadband services they want or need but cannot directly afford.

In regard to cost effectiveness, a sensible definition of broadband should encompass and embrace cost-efficient solutions like satellite whose low cost per household passed and fixed cost per user do not increase with the remoteness of the user. The functional definition of broadband proposed here meets this test. In regard to affordability of access, the optimal way to ensure that available and desired services are provided is through a program that provides financial incentives

[11] Joint Reply Comments of Hughes Network Systems, LLC and WildBlue Communications, Inc., GN Docket No. 09-51 at 7.

for end users to purchase or acquire the customer premises equipment they need to access broadband services, and to pay for the services themselves. A fixed subsidy that allows end users to immediately access any broadband service that is available and desirable to them is non-discriminatory, will not distort the marketplace, and will not result in billions of dollars in expenditures being made to develop and expand urban-centric technologies that are ill-suited for deployment in rural areas and many unserved and underserved areas.[12]

III. Conclusion.

In sum, the Commission should adopt a definition of broadband that accommodates whichever available or practicably-provided technology a consumer or end user, without regard to his or her location, deems best suited to his or her needs and expectations. The only performance indicator that should be included is the definition of the minimum data speed required to provide access to such core on-line applications as e-mail, social networking, healthcare/telemedicine, educational and job-training programs, information dissemination, and the downloading of entertainment materials.

The NOFA definition that focuses upon advertised speeds of at least 768 kbps downstream and at least 200 kbps upstream to end users serves this purpose without requiring intrusion by the Commission into the technical standards realm. Other performance indicators and thresholds are

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[12] The Commission must be careful not to adopt a National Broadband Plan that promotes the expensive build-out of broadband infrastructure in areas with very low population densities where end users already can access existing broadband services for only a few hundred dollars in equipment and a reasonable monthly service charge. There is no question that the cost of wireline network construction in very low population density areas exceeds any reasonable benefit to be derived by consumers or the taxpayers who will fund that construction. For example, it reportedly costs Verizon $2,500 per home to deploy fiber in high and moderate density areas. *See Communications Daily*, Vol. 29, No. 155 (Aug. 13, 2009) at 1. In rural areas, such deployments costs would be even higher, would not be made but for government subsidies, and even with such subsidies that will run into the hundreds of millions of dollars, meaningful rural deployment would take decades to achieve and would be significantly less than complete deployment. Subsidies for wireline network construction in low population density areas, in other words, would be an ill-advised use of the limited resources available to achieve truly universal broadband service.

not essential to the regulatory process in a functioning marketplace, and thus should be considered technical details that are best left to the providers.

The availability and practicability of broadband service cannot be determined without addressing the affordability of service to the end user. In this respect, the Broadband Satellite Commentors urge that the discussion and derivation of a broadband definition not be isolated from the overall role of that definition in the National Broadband Plan, and that consideration be given by the Commission and other Federal agencies to the notion that end-user financial subsidies will promote immediate and effective expansion of broadband usage, and will prevent a situation where limited stimulus dollars are squandered on absurdly expensive per-user costs and extreme time delays associated with the expansion of fiber-optic broadband delivery systems to the nation's 14 million rural households that are unserved by broadband today.

Respectfully submitted,

Hughes Network Systems, LLC

By: /s/ *Steven Doiron*
Steven Doiron
Senior Director, Regulatory Affairs
1171 Exploration Lane
Germantown, MD 20876

WildBlue Communications, Inc.

By: /s/ *Robert S. Koppel*
Robert S. Koppel
Vice President, Government Affairs
5970 Greenwood Plaza Blvd., Suite 300
Greenwood Village, CO 80111

Of Counsel for Hughes Network Systems, LLC

Stephen D. Baruch
Philip A. Bonomo
Lerman Senter PLLC
2000 K Street, NW, Suite 600
Washington, DC 20006-1809
(202) 429-8970

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