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January 5, 2010

By e-mail

Mr. Blair Levin
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: NBP Public Notice #19
GN Docket Nos. 09-47, 09-51 & 09-137
Universal Service for Broadband
Ex parte Communication

Dear Blair:

As a follow up to our recent meeting, I am writing to express the views of ViaSat, Inc. ("ViaSat") on certain critical issues regarding the role of the universal service fund ("USF") in the National Broadband Plan, including the proposals to extend the USF program to cover broadband Internet access.

As I mentioned when we spoke, ViaSat has a different approach to broadband service than others in the satellite industry, as well as a different perspective on the universal service problem. We saw the deficiencies of current satellite-delivered broadband and decided to address the root problems — capacity and affordability — by fundamentally changing the design of the satellite and the ground network and improving the performance of the system by an order of magnitude. Similarly, viewing the universal service problem from "outside the box" may yield a different (and better) solution than simply trying to adapt the current voice-based USF framework to broadband.

Below, I offer an approach to broadband universal service that can help achieve the Commission's goals of universality, affordability, and efficiency, while also leveraging competitive market forces. Attached to this letter is an annex that ties that proposal to the specific questions the Commission raised in NBP Public Notice #19. Before turning to those specifics, I'd like to address some new developments in broadband technology, and explain how those developments should frame the universal service policy debate.

I. New Developments in Broadband Technology

ViaSat is investing over $1 Billion in the provision of broadband Internet access services, through its recent acquisition of WildBlue (one of the current providers of satellite-delivered Internet access services), and also through its new ViaSat-1 satellite network, which is scheduled for launch in early 2011. In a little over a year, we expect to begin to address the current deficiencies in satellite-based Internet access services through a combination of launching the ViaSat-1 spacecraft, and implementing improvements to the existing WildBlue service.

ViaSat-1 will have an aggregate capacity of approximately 130 Gbps, representing more than a 15-fold improvement over the satellites that are delivering "broadband" today. In fact, ViaSat-1 will have more available capacity than all other commercial spacecraft currently serving the United States, combined.

With this monumental increase in capacity, ViaSat can provide Internet access service with a quality equivalent to the median level of cable modem service today, and at a competitive monthly service rate. ViaSat-1 will be capable of providing 1.5 million households with true broadband service at downlink speeds ranging from 2 to 10 Mbps and uplink speeds of 1 to 2 Mbps. Additional spacecraft that we are planning will expand the capacity and coverage areas of this system. Our system will support a "provisioned bandwidth" of 30 to 90 kbit/s (downstream) per household served, which is 3 to 10 times the amount of bandwidth provisioned to an average satellite broadband subscriber today, and compares favorably with the bandwidth consumed by cable broadband subscribers across the U.S. today. This satellite service will offer a quality of service that is faster than 80 percent of the DSL services currently available in the United States. The capital cost of the system, including the cost of satellite infrastructure, ground equipment, and the customer premises equipment, will be *less than $800 per household served,* regardless of the location of that household. This makes the ViaSat-1 system extremely capital efficient when compared with terrestrial alternatives in the hardest to reach 25% to 30% of the homes in the U.S.

Although individual users of ViaSat's system normally will access the cable-modem-like quality specified above, ViaSat's technology works by passing each individual terminal with downlink speeds in the hundreds of megabits per second and uplink speeds in the tens of megabits per second. In fact, our system can support fiber-like speeds (*e.g.,* 1 Gbps or more) for periods of time, on demand. As a result, our system can, among other things, (i) distribute content and local video to all terminals in a region at fiber-like speeds; (ii) support new telemedicine and distance learning applications; (iii) provide the high-speed backhaul required for the emergency reconstitution of networks following natural disasters; and (iv) support military and other U.S. Government applications.

Thus, our system will provide affordable broadband Internet access and other broadband services, allowing — in many places for the first time — real high-speed connectivity to homes, local businesses, community anchor institutions (schools, libraries, hospitals and clinics, community centers), public safety entities, critical community organizations, and local governmental agencies. For remote populations, and historically unserved households, businesses, and communities, the Commission has recognized what a lifeline this connectivity would represent. Moreover, our system will employ an open wholesale access model, whereby

capacity will be made available to a wide variety of retail providers offering a choice of service options to end-users. Thus, a competitive environment will exist to win these potential new subscribers.

II. Relevance of Satellite Broadband to the USF Debate

In addressing the role of the USF in broadband services, as well as the role that satellite will play, it is important first to identify the different types of users that are candidates for USF support. We believe those users fall into three main categories:

- *Remote Users:* Those households, businesses and institutions in rural locations that are located remotely from existing terrestrial broadband networks. This is the most common perception of the "unserved" problem.

- *Bypassed Users:* Those households, businesses and institutions in geographic pockets that ***are not*** distant from existing terrestrial broadband networks, but who are either not being served at all, or are being served at a level of speed or quality of service that is not deemed sufficient. These users are likely to have been bypassed by the locally dominant service providers because existing providers believe these users will be unprofitable to serve, or because existing network architecture makes serving them economically infeasible.

- *Disadvantaged Users:* Those households, businesses and institutions in areas with low subscriber penetration rates, where the anticipated adoption rate is not consistent with the existing service provider's economic business case. This low adoption rate can be due to an inability to pay for service, lack of computer literacy, unavailability of computers, social factors, lack of subscriber interest, lack of perceived value of broadband service, or similar factors that are wholly unrelated to the existence of broadband infrastructure.

In the next few years, the ViaSat-1 system, will "change the game" in two significant respects that are relevant to these three categories of users and the USF debate.

First, the broad coverage areas of our satellites, and the low cost of connecting individual subscribers, will enable us to provide an affordable, high-quality broadband service to Remote Users and Bypassed Users, whose broadband needs otherwise may remain unmet by terrestrial service providers. Because we can connect those users through the installation of customer premises equipment that costs about $500 installed, and because we do not need to spend that money until the subscriber requests service, our satellite system can serve them much more efficiently than broadband providers who need to construct or extend terrestrial networks. Specifically, the total capital cost per household actually served by our satellite (~$800) is far lower than the thousands (or tens of thousands) of dollars per household that many terrestrial providers estimate are needed to extend service to such users. And our approach avoids the risks and wasted resources associated with extending terrestrial networks (or subsidizing such construction) in the hope that a sufficient number of subscribers can be obtained to justify the construction costs.

Second, because we will offer a "true broadband" experience at a competitive price level, satellite-delivered broadband no longer will be a service of last resort. Rather, by making a competitive broadband pipe available to users who have sub-par DSL, wireless, or cable modem service, we will raise the competitive bar, and stimulate new investment by terrestrial broadband providers — investment that terrestrial providers will need to make to stay competitive, regardless whether USF support is made available for broadband services. An appropriate analogy for this competitive stimulus is how satellite TV has raised the bar for video distribution from terrestrial providers even in the higher density urban and suburban markets where one might otherwise believe that a terrestrial solution should have inherent technical advantages.

III. Broadband USF Support Should Focus on Disadvantaged Users

As I explained above, in a little over a year, both Remote Users and Bypassed Users will in fact be capable of being served by a compelling and competitive broadband service utilizing the ViaSat-1 satellite. This service will be offered broadly on a wholesale basis through a number of competitive retail service providers, including DirecTV, Dish Network, Qwest and AT&T, who will provide a broad competitive dynamic and good consumer choices. We expect competitive dynamics to drive other satellite and wireless based service providers to offer similar services, further expanding this choice. For that reason, the limited amounts of USF funding should not be used to subsidize the construction, upgrade, or operation of broadband infrastructure (whether new infrastructure, or existing infrastructure) in "high cost" areas where users can afford the next generation of satellite and wireless services. In the cases of Remote Users and Bypassed Users, there no longer will be a market failure; thus, there will be no broadband deployment problem to solve with USF funds for those areas that may be considered "high cost" in terms of terrestrial deployment. In fact, any use of USF funds to subsidize broadband deployment or operation in areas that actually can receive broadband service in an affordable way as described above could distort or significantly inhibit new forms of competition from innovative technologies that are not currently anticipated.

This means that the limited USF funds should be focused on the last category of users identified above — Disadvantaged Users. We propose that USF funding for broadband be focused on adoption-based programs, including making broadband service affordable for Disadvantaged Users. Specifically, achieving universal availability of broadband should be viewed as a question of reaching those Disadvantaged Users who cannot afford service at market rates, and providing a median broadband service at subsidized rates that are affordable for that segment of the population. The Commission should define minimum standards that better define this "median" service level for broadband and develop a target price so that an affordable solution can be developed, in a competitive marketplace, for every American. The broadband USF fund should provide subsidies to individual users who qualify under an objective standard, enabling those users to receive a quality broadband service from the provider of their choice.

Specifically, the Commission should develop nationwide price benchmarks for broadband installation, user education, and monthly service, and based on those levels choose a federal level of support ("Broadband Adoption Support" or "BAS") that can be targeted to those customers who meet state eligibility requirements (similar to Lifeline/Link-Up eligibility). Next,

the Commission should determine a fixed amount of support per user that will be compensated through interstate BAS — say $450 for installation (or capital investment recovery) and $30 per month for service. The states would determine qualifying households based on need, using criteria similar to the Lifeline/Link-Up model, and may choose to contribute an additional amount of support.

The Commission should allow the low-income consumer to decide which qualifying broadband service to purchase with that BAS support. Presumably, the consumer will choose the provider that offers the best service for the fixed amount of BAS available — in other words, the most efficient and most competitive provider of broadband services. Moreover, because the USF subsidy could be "portable" by the consumer — not tied to any particular service provider — providing the customer the right to choose where to spend her BAS dollars will spur *continued* competition and innovation.

IV. Appropriate Threshold Broadband Metrics Are Critical

Broadband services should qualify for BAS only if they meet some combination of technology-neutral metrics relevant to the consumer experience, such as availability, peak or "surge" speed (upstream and downstream), typical speed (upstream and downstream), volume of service offered (measured in GBytes per unit of time in both directions), and reliability. Separate standards should be adopted for mobile and fixed offerings, because consumers may have different purposes in mind for a home service versus a mobile or nomadic one.

In determining what broadband services are eligible for USF support, it is important to identify certain performance metrics, to ensure that USF-eligible broadband service is of adequate quality. In doing so, however, it is important to recognize that broadband is not a "monolithic," or a "one size fits all," value proposition. While we support the development of objective minimum criteria for the broadband services that will be USF eligible, we urge the Commission to consider that there are multiple dimensions to broadband, and that different subscribers place different values on those dimensions, and on different combinations of those dimensions. Moreover, subscribers will trade off one dimension for another they deem more important.

Many factors may affect the tradeoffs that consumers make among different broadband offerings, such as portability (ability to re-locate the service), latency (including the extent to which a broadband application valued by a consumer is or is not affected by latency),[1] and specific service types and plan characteristics, including upstream and downstream speeds,

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[1] Latency affects only a small fraction of broadband applications (*e.g.* voice). Because applications affected by latency may or may not be very important to individual subscribers, USF policy should not *a priori* eliminate services that score very high in other dimensions, merely because latency is relatively high compared to other alternatives.

volume limit policies, off peak service offerings, temporary, short term, and pre-paid service plans, and the availability of back-up or restoral services. In this respect, it bears emphasis that satellite service providers (with nationwide footprints) may be better suited to offer flexible service plans that take these different factors and consumer tradeoffs into account.

Moreover, future broadband services may be differentiated in other (and entirely unexpected) ways, including the type of network security offered, the physical survivability of the network in emergency or disaster scenarios, privacy policies, value added service offerings, the degree of "openness" in service offerings and configurations, and the degree of integration with network services.

In addition to adopting appropriate performance metrics, the Commission should promote standards for measuring and describing to potential subscribers these types of dimensions deemed important to making an informed selection of a broadband service.

V. Retaining Technological Flexibility and Neutrality Is Critical

We believe that broadband USF issues can be simplified and investment efficiency optimized by allowing subscribers to leverage telecommunications services that may already exist, so that a household may pick separate voice, video and broadband service providers, without being forced to purchase a bundle of services from a single service provider. Indeed, all households may not want the same service or the same bundle of services. Thus, there is no reason that USF policy should require that a "broadband" provider, in order to be USF eligible, be able to provide an integrated bundle of video, broadband and voice services. To the contrary, in cases where a household prefers a satellite–delivered broadband service, but requires a low latency solution for voice, the satellite broadband provider should be able to create a multi-technology bundle (using existing landline, wireless, video, or even low-latency mobile satellite service) that is transparent to the end user, but that delivers an equivalent or superior functionality at a lower cost when compared to a single technology solution.

Thus, universal service policy should be targeted to supported services — basic voice-grade service and broadband as defined by the Commission. One provider of each type of service per market should be supported *for each eligible subscriber*. The customer should have the right to choose his provider of each supported service.[2]

As with today's USF program, the broadband USF program should be technology neutral and service provider neutral, and should not inhibit the development of promising new technologies that can provide high quality broadband to the different types of Remote, Underserved and Disadvantaged Users. Rather, broadband USF policies should promote and foster the development of promising new technologies to those users. More particularly, those

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2 We take no position on how the FCC should transition support from multiple CETCs in a market, but we urge the Commission to winnow down support to one voice provider and one broadband provider per customer at any given time, chosen by the customer using a portable BAS credit.

policies should favor the development of services and technologies that provide subscribers with the lowest cost approach that meets minimum standards and/or each subscriber's preferences and needs. In this respect, competitive choice does not require a common carrier framework. I believe that the BAS proposal described above achieves all of these goals.

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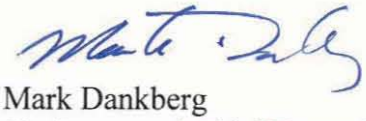
In conclusion , targeting support to consumers who otherwise could not afford broadband will ensure that choice is in the consumers' hands, and that the total USF fund size is limited to the amount of support necessary to reach only those users who have no affordable alternative. Thus, doing so ensures that the universal service fund is both technology-neutral and efficiently allocated. Moreover, using universal service funding to help the economically disadvantaged would provide the most impact, help avoid funding the construction of facilities that are not really needed (or used), and also would avoid subsidizing broadband providers for infrastructure that they have constructed on the mere hope that they eventually will use it to provide service.

We believe that a broadband universal service fund targeted on adoption by economically disadvantaged users would do more to advance universal broadband availability, penetration, and utilization than any other step the Commission could take.

I would welcome the chance to discuss these ideas with you further. Attached is an annex that ties these proposals to the specific questions raised in Public Notice No. 19.

Sincerely yours,



Mark Dankberg
Chairman and Chief Executive Officer

cc: Priya Aiyar (Office of Chairman Genachowski)
John Giusti (Office of Commissioner Copps)
Jennifer Schneider (Office of Commissioner Copps)
Angela Giancarlo (Office of Commissioner McDowell)
Christine Kurth (Office of Commissioner McDowell)
Rick Kaplan (Office of Commissioner Clyburn)
Angela Kronenberg (Office of Commissioner Clyburn)
Christi Shewman (Office of Commissioner Baker)
Marlene H. Dortch, Secretary

ANNEX

The following discussion relates the proposals made in ViaSat's December 28, 2009 broadband USF proposal to the specific questions raised in NBP Public Notice No. 19.

1. **Size of the Universal Service Fund**. Many argue that capping USF growth should be a priority, yet few offer concrete proposals for achieving the statutory objectives of ubiquitous, affordable communications and information services for all Americans. ViaSat believes that universal broadband deployment in this country can be realized without a substantial increase in the high-cost fund. As detailed below, the forthcoming generation of satellite-delivered broadband services will provide a true broadband option for all Americans. ViaSat thus recommends that the Commission target broadband support to increasing *penetration and utilization* among low-income subscribers. Thus, for example, the Commission could greatly reduce the size of the current fund by allowing each qualifying household one subsidy for voice-grade service and one subsidy for service meeting the Commission's broadband criteria. This subsidy would cover (i) the one-time cost of installing customer premises-based equipment (or capital investment recovery), (ii) related training and consumer education, (iii) a portion of the monthly recurring costs of the covered service. The states would determine qualifying households based on need, using criteria similar to the Lifeline/Link-Up model. The Commission would determine the size of the voice and broadband subsidies based on market-driven prices, using nationwide averages. Service providers would compete for the consumer, and the consumer would apply her portable Broadband Adoption Support ("BAS") to the provider of her choice. This solution will achieve the greatest benefit for the consumer at the lowest cost to USF contributors. As described below, ViaSat believes that providing USF subsidies in this limited respect is a critical element to preventing excessive growth of the overall size of the fund.

2. **Contribution Methodology**. If the Commission changes the method for assessing USF contributions to a connections-based methodology, it should exempt customers eligible for Lifeline/Link-Up and BAS programs.

3. **Transitioning the Current Universal Service High-Cost Support Mechanism to Support Advanced Broadband Deployment**. ViaSat supports targeting broadband funding to increase broadband *adoption* by low-income subscribers. The Commission should do so by putting the choice of provider in the consumer's hands. Next-generation satellite broadband services will be commercially available nationwide over the next year. Over the course of the next few years, therefore, the Commission should adopt nationwide benchmarks for the price of the initial connection and the monthly price of service meeting the Commission's minimum criteria for supported broadband service. For example, the Commission might find that $500 per household is an average cost for the initiating service (installation and/or capital investment recovery), and $40 per month is the average nationwide price for a 5 Mbps broadband connection to the home. Next, the Commission should determine a fixed amount of support per household that will be compensated through interstate BAS – say $450 and $30 per month. The state may choose to contribute an additional amount of support. The Commission should allow the low-income consumer (identified by the state) to designate which qualifying broadband service to purchase with that BAS support. By targeting support to the

consumer who cannot purchase affordable broadband without it, the Commission will eliminate unnecessary subsidies and increase consumer choice. Presumably, the consumer will choose the provider that offers the best service for the fixed amount of BAS support available. Market stimulation will not only drive greater penetration and utilization of broadband among consumers, but also will drive additional supply of competitive broadband options.

Targeting support to low-income users will address current problems of insufficient demand among low-income populations. The Commission has recognized that broadband availability lags among low-income households. As detailed above, any perception that broadband service will not be available to these households should be dispelled by the forthcoming new satellite broadband services. More likely, the issue will become the fact that residents cannot afford the service at the offered prices. Commission policy can make a critical difference by providing targeted universal service funding to enable broadband adoption by financially disadvantaged consumers. Programs also could be developed to address other barriers to adoption, such as lack of computer literacy, unavailability of computers, social factors, lack of subscriber interest, lack of perceived value of broadband service, and similar factors that are wholly unrelated to the existence of broadband infrastructure.

Targeting support to low-income users will drive supply to underserved populations. Many service providers make a business decision not to serve low-income populations. Commission policy can significantly influence that calculus by providing deserving end users a fixed amount of subsidy to defray the cost of a broadband connection. Consumers are more likely to subscribe to a service when they see it deployed in their community centers, at their neighbors' homes, and in their work places. Moreover, as penetration increases, service providers are less likely to view a community as an unattractive market. In other words, the availability and adoption of an affordable satellite offering will likely attract other providers to the market. ViaSat believes that the quality and reliability of the next generation of satellite broadband will raise performance standards for the whole country, as more and more communities sample these new services that are coming to the market. In much the same way that satellite TV provides a competitive offering to cable TV — encouraging the cable providers to offer a more competitive service in both rural and urban markets — satellite broadband also will provide the competitive stimulus to terrestrial providers to drive more attractive broadband offerings in all markets.

By targeting broadband support to end-users, USF can be competitively neutral. Current requirements for eligible telecommunications carriers ("ETCs"), focusing on voice-grade service offered on a common carrier basis, favor traditional telephone service providers over alternative providers, such as cable and satellite operators. ViaSat does not support the application of carrier-of-last-resort ("COLR") requirements and ETC qualifications to a broadband fund targeting low-income and unserved Americans.[3] The qualifications for supported broadband services should be defined by the Commission based on key factors, such

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3 Our open wholesale access business model, which is market-driven, will facilitate competition among service providers to end users. We do not believe it appropriate to impose common carrier-type regulation on new market entrants such as ViaSat.

as peak speed, average speed, upstream and downstream provisioned capacity, service availability and reliability, but should also include non-traditional metrics such as portability (ability to re-locate the service), specific service types and plan characteristics, including volume limit policies, off peak service offerings, temporary, short term, and pre-paid service plans, and the availability of back-up or restoral services. USF policies should not favor any particular service providers or technologies, but rather should encourage the development of services and technologies that can serve subscribers with the lowest cost approach that meets minimum standards and/or each subscriber's preferences and needs. Whether a provider is a common carrier or offers service on a contractual basis should not be dispositive.

4. **Impact of Changes in Current Revenue Flows**. [No comment]

5. **Competitive Landscape**. Next-generation satellite services represent a true "third pipe" that will be available to consumers throughout the country within the next year.[4] Providing another broadband pipe available to users who have sub-par DSL or cable modem service will raise the competitive bar, and stimulate new investment by terrestrial broadband providers — investment that terrestrial providers will need to make to stay competitive, regardless whether USF support is made available for broadband services. Moreover, because ViaSat's business model includes wholesale offerings that will allow multiple retail service providers to sell competing satellite-based broadband offerings to consumers, multiple retail offerings will be available by satellite throughout the country.[5]

6. **High-Cost Funding Oversight**. As detailed above, in a little over a year, all Americans will in fact be capable of being served a median quality broadband offering by satellite-based broadband service providers. For that reason, the limited amounts of USF funding should not be used to subsidize the construction, upgrade, or operation of broadband infrastructure (whether new infrastructure, or existing infrastructure) in "high cost" areas. There no longer will be a market failure; thus, there will be no broadband deployment problem to solve with USF funds for those areas that may be considered "high cost" in terms of terrestrial deployment. In fact, any use of USF funds to subsidize broadband deployment or operation in areas that actually can receive broadband service could distort competition. Only if these market forces fail to operate as we expect they will in the next few years should government subsidies be used to spur the deployment of broadband to such areas.

7. **Lifeline/Link-Up**. As discussed above, ViaSat supports the creation of a funding mechanism for broadband service to low-income subscribers akin to the Lifeline/Link-Up program. In fact, supporting economically disadvantaged subscribers should be the main focus of any USF broadband program.

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4 Satellite not only is the most efficient alternative, but also provides critical infrastructure that may be necessary in an emergency, such as a natural disaster or national security crisis – where ground facilities are affected, satellite can still function.

5 COLR obligations always may be imposed in the event of actual market failure.