

**SES Comments to the  
consultation published by the Info-communications  
Development Agency of Singapore on 'net neutrality'**

15 December 2010

SES would like to thank the Info-communications Development Agency ("IDA") for the opportunity to comment on its consultation regarding net neutrality and Internet access in Singapore. In particular, we note that no mention is made of satellite-based broadband providers.

By way of background, SES is a leading satellite company which provides coverage and connectivity to a broad variety of customers worldwide. SES wholly-owns SES ASTRA ("ASTRA") offering services in Europe and Africa and SES WORLD SKIES ("WORLD SKIES") which offers services in the Europe, the Americas, Africa, the Middle East and Asia. SES also holds interests in Ciel in Canada, in QuetzSat in Mexico, in O3b Networks based in Jersey, Channel Islands, as well as in a number of satellite service providers. SES provides outstanding satellite communications solutions worldwide via its fleet of 44 satellites. Many of the satellites in SES' satellite fleet currently provide or are capable of providing service to Singapore and its neighbors. In particular WORLDSKIES provide satellite-based broadband, data, audio and video broadcasting, satellite news gathering ("SNG"), and telecommunications services to enterprises and governments.

In the context of this consultation, it is essential to remember the critical role that the satellite industry plays in the deployment of important communications services, such as broadband connectivity. We respectfully encourage the IDA to consider these comments as it develops policies and regulations related to the rollout of broadband in Singapore. In particular, we believe it is important for the IDA to consider that:

- Fiber is not the only broadband solution that is available today. Instead, the solution is likely a mix of various technologies accompanied by a pro-competitive, non-discriminatory landscape that allows countries to achieve their ambitious goals quickly and cost-effectively;
- Modern VSAT solutions, especially when combined with high-throughput satellites, are very competitive and are capable of serving a very wide geographic area, covering all areas in any given region, including Singapore with neighboring islands and countries;
- The use of hybrid solutions combining satellite Direct-To-Home ("DTH") for ultra high-speed multi-channel SD/HD/3D video, radio and music streaming with terrestrial wireless or wire-line technologies for other broadband services can provide a highly scalable, competitive and cost-effective consumer experience;

- Satellite is a cost-effective solution for backhauling large amounts of data anywhere within a satellite's footprint thereby enabling fixed and mobile broadband in areas where they would otherwise be unavailable or would be very costly and require inefficient spectrum use;
- Our experience of the multiple roles which satellite plays in bringing broadband to all citizens in all parts of the world exemplifies the critical role our industry can play in helping Singapore to achieve the goals of its NBP.

Satellite provider practices embrace Internet openness today and provide a quality broadband experience consistent with their subscribers' service plans and expectations. To the extent the IDA advances a regulatory regime, it is imperative to do so in a way that ensures that each broadband platform has sufficient flexibility to engage in network management practices that are reasonable to ensure the availability and delivery of the types of services the users of that platform demand and expect.

## **1. Broadband by Satellite**

Satellites are uniquely qualified to contribute to provide high quality, affordable and efficient communications solutions to the most remote and underserved populations of the whole region around Singapore. Satellites can for instance play a key role in any broadband solution that could involve a regional operating centre or a Hub based in, for example, Singapore enabling reliable and affordable connectivity with neighbouring countries such as Indonesia, Malaysia Thailand and the Philippines. It can also provide a platform that is competitive or complementary to other terrestrial systems.

When compared with other technologies including fibre, satellite offers numerous benefits for delivering broadband. For example, existing, in-service satellite capacity is immediately available to serve any region of the world. Using this operational infrastructure based on commercial rather than government funds avoids implementation delay and the need to develop, construct and fund costly terrestrial infrastructure in areas where it may not be geographically or economically feasible or sustainable. Experiences of delivering broadband connectivity by using satellite are showing that satellite can be a cost-effective and reliable solution that is available instantly and across borders.

With its ASTRA2Connect platform in Europe,<sup>1</sup> for instance, SES has acquired the potential to address millions of households and businesses with affordable offers for high-speed connectivity. Similarly, Hughes Network Systems and Wildblue in the US have thrived in providing high-speed connectivity everywhere in the US.<sup>2</sup>

In addition, satellite services are vital for public safety and homeland security, and demand remains as strong as ever. Satellites are used for critical public safety

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<sup>1</sup> See [www.ses-astra.com/business/en/solutions/enterprise/astra2connect/index.php](http://www.ses-astra.com/business/en/solutions/enterprise/astra2connect/index.php)

<sup>2</sup> All details available from [www.wildblue.com](http://www.wildblue.com)

services on a day-to-day basis by governments all over the world, public safety agencies and commercial entities.<sup>3</sup> Indeed, in times when disaster recovery is needed, satellites are often the only means to establish communication links, as demonstrated by the crisis unfolding in Haiti or in Chili following the devastating earthquakes there.

Satellite-delivered broadband service is reliable and effective – and is becoming more so with continuing technological advances. Satellites now deliver broadband via fixed-satellite service at download speeds of up to 5 Mbps. Upload speeds via fixed-satellite service are also increasing, and now are approaching 1 Mbps on some systems. These speeds allow for the full range of broadband capabilities, including full email, large file transfers and complete Internet access. Satellites also deliver mobile-satellite broadband user speeds equivalent to DSL levels that enable broadband capabilities including Internet access and streaming video, both on the download and upload links.

Even faster speeds allowing for an even more extensive menu of services soon will be possible with the deployment of improved satellites now under construction in both the fixed satellite and mobile-satellite services. For example, next generation mobile satellite services will be capable of providing both full-time, stand-alone service and ubiquitous roaming and backup service where terrestrial wireless networks are unavailable, all through devices that cost about the same as terrestrial-only models.

Satellites also serve emerging niche markets of users that need broadband service when traveling. A full range of satellite-delivered broadband services is becoming available to passengers and crew on airplanes in flight, on ships at sea, and now on in-motion motorized vehicles. These new markets are expanding rapidly, and demonstrate the growing reach of satellite-delivered broadband.

SES submits these comments to emphasize the role of satellite systems in the nation's broadband delivery ecosystem and to highlight that satellite broadband network providers – like operators of all shared access platforms – must rely on platform specific network management practices to ensure that all of their users receive the appropriate quality of service for the subscription plan of their choosing.

## **2. Network Management on Satellite Platforms**

Providers of fixed, terrestrial wireless, and satellite shared broadband access platforms must engage in sound network management practices in order to address the dramatic growth in and ever-changing nature of broadband traffic, to deal with congestion issues and ensure that their users receive the quality of service that meets the subscription plan of their choosing, and to avoid harm to the network and users. Ultimately, all shared network providers – regardless of platform – must

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<sup>3</sup> Satellite Industry Association, *First Responder's Guide to Satellite Communications*, available [www.sia.org/frg\\_files/FirstResponder%27sGuidetoSatelliteCommunications.pdf](http://www.sia.org/frg_files/FirstResponder%27sGuidetoSatelliteCommunications.pdf)

engage in traffic shaping practices and quality of service techniques to deliver a quality broadband experience for as many users as possible.

SES commend the IDA for their recognition that (section 21):

*“In order to maintain a reasonable quality of service to all its subscribers, the ISP or telecom network operator may have to perform traffic shaping or prioritisation techniques to manage the high traffic load or maintain the integrity of the network. Hence, there are legitimate technical reasons for ISPs and telecom network operators to carry out network management practices.”*

SES would further invite the IDA to recognize the general need for such network management, asserting that an Internet access provider may be justified in taking reasonable steps to reduce or mitigate the adverse effects of that congestion or to address quality-of-service concerns.

Any rule and policy must, in SES view, preserve the ability of broadband providers – with appropriate disclosure and transparency, of course – to utilize these techniques and others that may be developed or required over time to manage congestion, protect the integrity of their networks and the overall broadband experience.

In the context of the current generation of satellite broadband systems, for example, it is possible that a small percentage of subscribers that concurrently run applications utilizing many simultaneous network connections could consume 90 percent or even more of the available satellite resources. This would slow or delay access to all other subscribers and diminish the broadband experience for all network users. Satellite network providers should have the ability to preemptively address this situation by assigning a download threshold to each service plan that limits the amount of data that may be continuously downloaded within specified time periods and establishing in disclosure materials that any subscribers who exceed this limit will experience a temporary reduction of speed until the data download rate falls back below the threshold.

An approach like this does not involve discrimination against high-bandwidth users or targeting of specific applications; instead, there is only recognition that it is reasonable for satellite providers to provide the maximum availability of network resources to all users.

Internet access providers, including satellite broadband providers, engage in other network management practices to ensure the quality of latency-sensitive traffic such as web browsing, VoIP, and video conferencing. They use algorithms and other software techniques to optimize quality of service for such traffic, without causing undue delay to the delivery of non latency- sensitive traffic such as email. These techniques enhance the overall broadband experience users enjoy.

Some providers offering service in a shared access environment (including spectrum based services) may offer users a higher quality of service experience that would seek to ensure enhanced performance by a variety of techniques, such as dedicating

additional spectrum to this service offering, prioritizing certain kinds of traffic, or other traffic management techniques.

Provided this class of service is explained in advance in disclosure materials made available to users, this sort of managed traffic offering should be allowed. Of course, these are merely examples of reasonable network management techniques – many more are currently employed and other targeted network management innovations are under development.

In summary, network providers must have the ability to choose the network management alternatives that best meet their abilities to satisfy subscribers' broadband needs and should be able to change, discontinue, or adopt new techniques as needed to improve traffic flow and protect the integrity of the network. These techniques or their application, moreover, may vary among broadband platforms, depending on the service providers' objectives and the needs of its subscribers.

### **3. Key Issues Addressed in the Consultation**

#### Maximum Flexibility

In relation with the IDA's concerns that legitimate Internet content is not blocked, and national competition and interconnection rules are fully respected, SES supports retaining the broadest flexibility for providers of managed or specialized services to employ network management techniques that provide users with the level and type of service which they demand and expect. The customers of managed or specialized satellite services typically are sophisticated entities fully capable of pursuing a service package with the quality of service terms they require.

In some cases, for example, government and enterprise customers negotiate per-bit pricing arrangements for mobile satellite broadband services; and, they demand that the satellite provider block or limit access to certain bandwidth-intensive traffic or certain social networking or entertainment web sites in order to avoid congestion on their service, to limit service fees, and to assist in maintaining compliance with the employer's general workplace policies. Other government or enterprise users might seek dedicated capacity to ensure they have guaranteed access when they need it, or ask for prioritization of emergency communications.

Any IDA rules that would restrict a broadband provider's ability to accommodate such market place demands would be counterproductive to their goals of encouraging innovation, investment, competition and consumer choice. Therefore, we welcome IDA's statement that (para 20):

*"While IDA supports the policy that all Internet access users must be able to access all legitimate content on the Internet, IDA also believes that for new service innovations to flourish, ISPs, telecom network operators and Internet companies or content providers must have the flexibility to develop new business models and service delivery methods to meet the needs of the market."*

### Transparency

SES fully agrees that transparency serves an important function in protecting and empowering users and notes that the marketplace already has embraced this principle. Many broadband Internet service providers, including satellite providers, voluntarily disclose key congestion management practices to users and the public generally. SES endorses the principle of transparency, but we urge the IDA to move cautiously in the event it adopts a rule in this context.

The IDA also should proceed with caution with respect to the nature and extent of any required disclosures on network management techniques. As noted previously, Government and large corporate users are a significant customer base for satellite services, and many satellite providers offer managed broadband service to such users via the same infrastructure used to provide service to other commercial customers.

The IDA should be careful not to require a level of disclosure for network management practices for Government or other managed or specialized services that would reveal information that could compromise the integrity of those services.

### Being pragmatic

As noted by the IDA, Europe has closely looked at the net neutrality issue during the year 2010, and some countries like France and the UK have already designed national policies. Although European markets are not the same as in Asia, it is of interest to note that in a country like France, where the net neutrality issue has been regarded as critical, the regulator ARCEP has opted for a pragmatic approach and taken the view that traffic management and restrictions on Internet users' access to content, services or applications are permissible when they are "relevant, proportional, efficient, transparent and non-discriminatory."

## **4. Conclusion**

For the reasons discussed above, satellite broadband is an essential component of broadband communications nowadays. To the extent the IDA intends to draft a regulatory regime, it is imperative to do so in a way that ensures that each broadband platform has sufficient flexibility to engage in network management practices that are reasonable to ensure the availability and delivery of the types of services the users of that platform demand and expect. The IDA should also recognize the importance of managed services and flexibility within the principle of transparency.

SES would be pleased to further discuss the matters raised in this document with the IDA. Further, we would be happy to respond to any questions that the IDA staff might have related to this submission.