ITU Open Consultation "Building an Enabling Environment for Access to the Internet" - 22 September 2016

This response is submitted by the EMEA Satellite Operators' Association, on behalf of 21 satellite operators providing satellite communications services across the world including Internet access for citizens, businesses, governments and other public and private users. These operators between them operate both geostationary (GEO) and medium-earth-orbit (MEO) satellite networks.

Satellite broadband has traditionally been based on GEO satellite systems. These systems have evolved in recent years to deliver higher capacity and make increasing use of high-throughput satellites and MEO satellite systems that are nearer to the earth and therefore bring with them lower latency (delay). As a result satellite broadband offerings have been transformed over the last decade hailing increasing performance and lower costs that today enable it to compete on a par with terrestrial technologies. In rural America alone, over 1 million domestic users are now connected to the Internet via satellite, often in circumstances where no other technology is available to them.

In a world characterized by severe income disparity (difference between rich and poor) and subject to an increasing natural and manmade disasters, policymakers must focus on bringing equal opportunities to all, in the most effective and efficient manner. Given its unique ability to cover almost the entire globe and its inherent resilience as a space-based infrastructure, satellite technology has a fundamental role to play in enabling Internet connectivity to bridge the Digital Divide before it becomes a Digital Chasm with the eventual emergence of 5G in high density, developed, urban areas.

ESOA asbl
Bastion Tower, 20th floor,
5 Place de Champ de Mars, B-1050 Brussels
Tel. : +32 (0)2 550 3575 – Fax : +32 (0)2 550 3535 – email : sg@esoa.net
TVA : BE 477 480 817

Q1 - What are the elements of an enabling environment to **promote** Internet connectivity?

Regional and national policies that pro-actively foster a **mix of technologies** are key to promoting Internet connectivity. Pro-active means favorable policy-making and funding support for different technological solutions on an equal basis.

Nearly every country has important differences within its borders: terrains that are difficult to reach or areas with lower population densities than others. Different countries and regions also represent different economies that impact the purchasing power of their citizens.

These differences imply that appropriate and diverse solutions will respond to different needs. **A one-size-fits all approach that focuses primarily on the rollout of one technology will result in sub-optimal promotion of Internet connectivity and the persistence of the Digital Divide.**

Fibre is the ideal solution for high speeds and high capacity. Mobile networks can bring additional coverage. But both are costly to rollout in the absence of accompanying public works. While governments and operators should strive to rollout fibre and mobile networks as wide as possible, **satellite** solutions should also be included to connect users where terrestrial technologies do not and will not reach for many years to come.

The benefits of combined solutions should not be underestimated, such as creating a WiFi or mobile network that relies on a satellite connection to the Internet backbone. Only a level playing field in terms of policy and funding support for different technological solutions and their combinations will enable maximum promotion and a ubiquitous uptake of Internet connectivity.

In addition to being part of the terrestrial communications system, satellites can provide services where other technologies struggle or fail, such as decongesting airwaves for air-traffic management in complex and dense air-space, or providing broadband access to aerial or maritime users. We therefore envision a future communications ecosystem leveraging all terrestrial wired and wireless and satellite technologies based on their respective key capabilities.

Connectivity is also fundamental to achieving the Sustainable Development Goals (SDG's). Governments in emerging markets must therefore use specific funding and actions to bring fast, effective solutions to towns/villages everywhere. Time-to-deploy is a key criteria in evaluating connectivity solutions in developing nations.

Q2 - What are the elements of an enabling environment to promote an **affordable** Internet?

The affordability issue has different aspects:

i. **Funding infrastructure (fibre/mobile networks) versus *access to* infrastructure (satellite dish/modem)**

Governments typically subsidize the rollout of fixed broadband infrastructure such as fibre. Satellite broadband does not require the infrastructure (satellite) to be funded but rather the ***access to*** the infrastructure: i.e. purchase and installation of a dish and modem before users have a service. This initial cost is often perceived as high and can be a barrier to accessing the Internet, even if it is often the **only solution** with which to do so.

Public investment in fibre infrastructure costs millions, but the public support required to cover the cost of a satellite dish and modem is nominal by comparison (EU prices: between 200€-400€). Therefore to promote an affordable Internet, especially for those in difficult to reach or low-density areas where rollout of terrestrial technologies is not commercially viable, funding support must remove these relatively minor barriers to access and the purchase / installation of satellite dishes/modems must be eligible for public funding. Note they already are in the European Union. Furthermore unlike terrestrial networks, the cost of delivering satellite broadband is the same to any location since satellite characteristics maintain the same pricing and is not dependent on distance from terrestrial infrastructure.

ii. **Connectivity programs for public facilities**

Governments should also develop regional and national programs to connect schools, post offices, government offices and other public facilities, putting the user at the center of connectivity policy. This also allows the connectivity to then be opened up to local citizens at lower cost by installing a primary satellite connection to the Internet backbone and creating a WiFi network for the surrounding area.

iii. **Funding monthly subscription charges in certain countries/regions**

In addition governments should consider Digital Programs for disadvantaged citizens in rural areas. This should cover not only the initial connection to the Internet but also support the monthly subscription charge for unemployed or low-income users - such Programs are particularly appropriate in less developed countries.

iv. Excessive license and customs fees applied to satellite terminals

In some countries high licenses fees and customs fees can triple the price of satellite terminals. In some markets other regulatory obstacles such as the obligation to install a satellite hub in the country discriminates against satellite and prevents the cost-efficient deployment of satellite solutions. Fees on imports of satellite equipment / technology and type approval should be minimal in order to facilitate the roll out of equipment to customers. Harmonized and favorable regulatory/business environments are key. ESOA would suggest that regulatory policies be put in place that exempts all equipment dedicated to schools and hospitals or other public facilities from licenses and customs taxes.

Q3 - What are the elements of an enabling environment to promote the **quality of access** to the Internet?

Two factors affect the quality of access to Internet. The first is the quality of the broadband infrastructure used to access the Internet or quite simply, the lack of it. The second is the number of users accessing the infrastructure at any one time and the amount of traffic they consume.

As we know insufficient investment is being made by private operators to support the ubiquitous or even wide-scale roll out of fibre that is necessary to support the broadband consumption patterns that we see today. Data consumption, especially of video content, has increased enormously over the last few years and is resulting in network congestion, a reduced user experience and disrupting the business models of telecoms operators active in very competitive markets.

It is imperative that future business models be found, based on hybrid solutions. By playing different technologies to their strengths, for instance using satellite to deliver the most popular video content to the network edge for onward distribution via terrestrial means, terrestrial broadband networks can be offloaded to enable a better user experience. This requires proper interworking of satellite and terrestrial technologies in order to tap the unique ability of satellite to multicast content to the greatest majority of people in most cost-effective & spectrum-efficient manner. It is therefore in policymakers' interests to provide financial and other incentives to encourage cooperation and innovation amongst different technology providers.

Q4 - What are the elements of an enabling environment to build confidence and security in the use of the Internet?

N/A

Q5 - What is the **role of governments** in building an enabling environment?

The role of governments in building an enabling environment for Access to Internet is:

1. First to fully **recognize and acknowledge the diverse needs within their territory** and to ensure adequate measures are taken to address them all in parallel. In other words, governments should not prioritize the interests of some of its citizens over the interests of the others.

2. In addition to taking measures to make solutions available across their territory, governments must also **inform and educate both regional and local authorities and citizens about the availability, capability and cost of new, innovative solutions such as access to next generation satellite** broadband networks, of which many, if not most, are still unaware.

3. Thirdly, governments must adopt policies instruments at national level that **ensure a level playing field between different technological solutions** while still allowing the most appropriate technology to be made available for a particular need/region. This is particularly critical in the area of universal service, where often different technologies are required to provide cost-effective coverage of unserved areas.

About ESOA

ESOA is the world's only CEO-driven satellite trade association whose membership brings together 21 European, Middle-East and African satellite operators and supporting members including service providers, manufacturers and launch service providers. Set up in 2002, the association's mission is to provide a unified voice and a platform for collaboration for satellite operators to ensure the continued success of the sector and to broaden the opportunities for policymakers to leverage satellite services to fulfill their objectives. www.esoa.net