

# POSITION PAPER / SPACE POLICY

**Science and knowledge are of no value if they do not ultimately serve to improve the quality of human life. This is particularly true for Space Policy, which should put the user at its centre and ensure that space services and technology are truly exploited for the benefit of humanity.**

Space is already an integral part of the Digital Society. Satellites enable a host of high quality digital services that bring live news, sports and entertainment to millions of homes but also enable safety-of-life services for example for ships at sea or for first responders at times of disaster. From effective 24/7 border control to backhauling voice, data and broadband services from rural areas, satellite communications (satcoms) play an undeniably important role in today's society. Still the benefits of satcoms for different segments of society are not fully understood and therefore remain unexploited. The effect of this is that the efficiencies that come from using a single global network which only satellites can provide remain untapped. People and businesses that could be connected remain unconnected. Lives that could be saved are lost.

**SPACE : ALREADY PART OF THE DIGITAL SOCIETY**

**All three space service segments are relevant to digitized verticals:**  
 ▶ Earth observation ▶ Navigation ▶ Communications



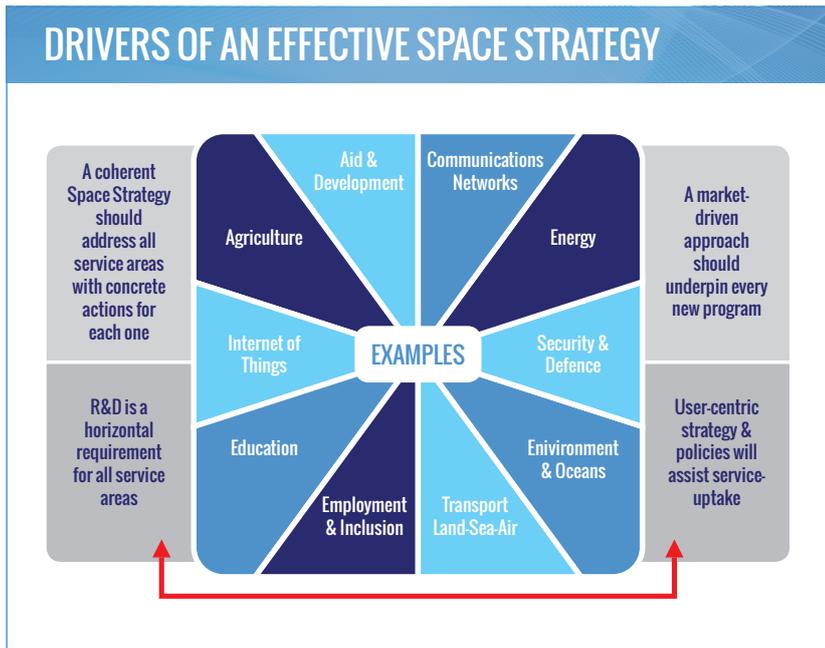
While innovative and exciting stories about connecting new users and business segments can be found within all of ESOA's member companies, most initiatives remain the result of considerable investment and dedicated business development activities by private operators and less in response to a call to action by policymakers. Yet governments still strive to meet important objectives such as overcoming a persistent Digital Divide in both developed and emerging economies; making Smart Cities a reality and fostering the emergence of the Internet of Things; ensuring minimal losses and the cyber-resilience of critical infrastructures such

as smart grids or energy plants; and finding ways to drive down the cost of investment in next generation communications infrastructures.

In short there are a myriad of areas in which satellite communications and space services more generally can help drive efficiencies or bring enhanced, sustainable, connectivity solutions.

Space Policy often tends to focus on enhancing space capabilities within individual countries or regions in terms of manufacturing hardware and fostering national or regional space programs. This drives a focus on R&D programs rather than on user-centric policies that will drive the uptake of beneficial services and contribute to wellbeing and growth in local economies.





Another trend is to focus on the benefits of earth observation or navigation services while ignoring satellite communications. Today's shift to a world of 'uber'-connectivity is however driving change at an unprecedented rate and bringing with it concerns about security, resilience and a new Digital Divide where the 'urban elite' may see 5G networks emerging while isolated communities with little or no connectivity at all are forgotten.

Satcoms are already an integral component of the infrastructure behind 'uber'-connectivity, and only satcoms can transform the Internet of Everything into the Internet of Everywhere.

Terrestrial telecoms infrastructure, while it will always be a core component of connectivity,

has a number of practical limitations. The most obvious is the inability of terrestrial networks to deliver universal coverage. Satellite telecoms has the ability to reach the most remote locations, where it is simply uneconomic to build and maintain terrestrial infrastructure, including in the air and on the oceans.

Another unique attribute of satcoms is reliability. Relying solely on a ground-based infrastructure leaves us exposed as we can see from the numerous natural disasters occurring across the world. Originally conceived for government use, satellite networks are Physical Private Networks in space with far fewer entry points than terrestrial networks. They provide an invisible and resilient overlay for terrestrial networks that guarantee constant connectivity, even if a terrestrial connection fails. Because of their inherent security, satcoms are often the network of choice for critical infrastructures such as smart grids, even where adequate terrestrial coverage exists.

Satcoms also provide special capabilities, which cannot be achieved through terrestrial networks. Global Navigation Satellite Systems (GNSS), which deliver vital capabilities such as GPS, are one of many examples where only satellite can deliver. And, in a world where both physical and cyber threats are ever present, satcoms have two intrinsic advantages: greater inherent resilience to cyber security breaches and the ability to be deployed anywhere at a moment's notice. Global IoT networks delivered via satellite are already providing effective border control solutions and can even support initiatives to collect biometric data to give forgotten citizens in developing countries an identity.

Right now, satcoms are being deployed alongside terrestrial networks to support the development of the first smart cities; enabling the secure management of a city's assets. Satellite-delivered services are also playing an important role in the development of smart transport networks and initiatives such as the Connected Car. Smart agriculture is considered one of the most important initiatives in a world where, by 2050, the human population is forecast to reach 9.3 billion. Satcoms are helping farmers increase production through the use of 'sensing' technology, turning traditional farms into 'intelligent farms' and by using automated agricultural vehicles, capable of ploughing or harvesting without a human driver at the wheel.

## Conclusions

**Rather than being considered a solution for niche services, satellite communications have now boldly entered the mainstream where even traditional telcos are using satcoms to make their networks more efficient and extend their reach. Governments and regulators need to nurture this industry and allow it to contribute to vital economic growth while using it to protect society against the vulnerabilities emerging from the universal reliance on connectivity.**