

Regional Radiocommunications Seminar 2014

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Future of Satellite Services: Infrastructure, Investment and Innovation



Our vision for success

Satellites today

What is the role of satellites?

- ✓ Provides **regional coverage** (100% reach)
- ✓ Reaches an **unlimited number of end-users**
- ✓ Offers **quality services** to all population, **quickly and affordably**
- ✓ Complement terrestrial infrastructures

Satellites tomorrow

What is needed to succeed?

- ✓ Continue to **innovate**
 - ✓ Not “just” on new satellites
 - ✓ On the entire ecosystem
- ✓ **Spectrum and efficiency**

Satellite is critical infrastructure

In the fixed-satellite service (FSS), satellite spectrum is used ubiquitously



Satellites' Role, Present and Future

- ▲ **Satellites are a basic component of our integrated telecommunications infrastructure**
 - Dispersed communities rely on VSATs for broadband access
 - Enterprises rely on VSATs for broadband access, even in regions where submarine cables, fiber optic lines, and terrestrial infrastructure are broadly deployed
 - Civic functions like civil aviation, weather-monitoring, distance education and disaster relief all rely on satellites
- ▲ **Satellite applications drive communications for across multiple sectors**
 - Satellites provide cellular backhaul, broadband to consumers, and other services that leverage its ubiquity
 - Maritime, oil and gas are a significant customer base

Disaster Recovery and Relief



Emergency.lu

- Luxembourg government-executed consortium of Luxembourg companies: SES TechCom, Hitec, and Luxembourg Air Ambulance, together with Skype, Ericsson, the World Food Programme and the Emergency Telecommunication Cluster (ETC)
- Enables a rapid response solution to re-establish broadband access for disaster relief and humanitarian missions on a global level
- Platform provides a satellite infrastructure and satellite capacity, communication terminals, and rapid deployment logistics

Emergency.lu Team Leader Recaps Disaster Response Lessons Learned in the Philippines (January 6, 2014, Satellite TODAY)

Satellites' Role, Present and Future

▲ Broadcast technologies all rely on satellite

- Satellite platforms allow scalability in deploying networks, with low incremental costs for additional users
- SES's global satellite network carries 44 Direct-to-Home platforms, 6,200 channels, and reaches 291 million TV homes
 - 106m satellite homes
 - 153m cable homes
 - 31m IPTV homes

Live Ultra HD coverage of FIFA World Cup 2014

- ▲ Demand for satellite capacity for sporting events is sky high, especially for FIFA World Cup 2014
- ▲ Largest single sporting event that SES has covered
- ▲ Using at least 10 satellites to deliver the World Cup to every single continent
- ▲ Delivering at least 39,000 coverage hours
- ▲ Eurovision to deliver live Ultra HD matches to their global network using NSS-806 satellite and SES' teleport in Manassas
- ▲ World Cup is first major sporting event to drive Ultra HD uptake
- ▲ Ultra HD channels carried via satellite will surpass 1,000 by 2025



Satellites' Role, Present and Future

▲ Broadcast technologies all rely on satellite

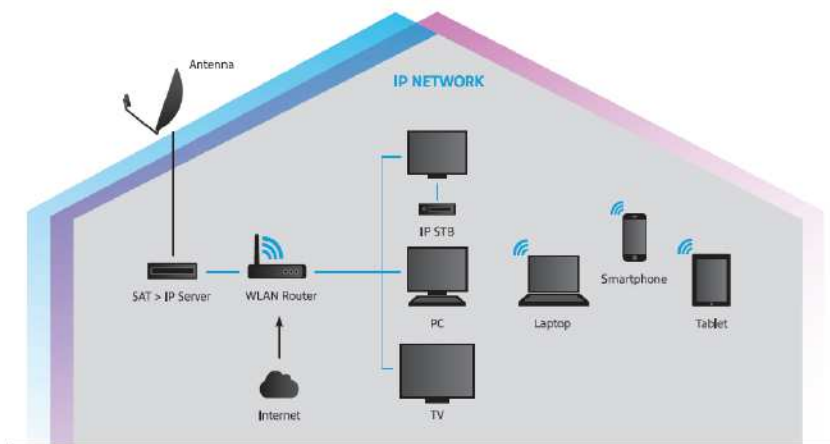
- SES invests in new technology development, like Ultra HD and Sat-IP – a pioneering technology for linking in-home networks via satellite connection

Via Satellite, April 9, 2014 – “SES Working with Over 30 Manufacturers to Create SAT>IP Products”

“[SAT>IP] enables satellite operators to transport live linear satellite television over an in-home IP network via Ethernet, power line or Wi-Fi.

Extending satellite's reach to multi-screen with SAT>IP

- ▲ SAT>IP converts satellite signals for use on internet-based devices in the IP world
- ▲ Open standard and CENELEC certified
- ▲ Next innovation: IP-LNB
- ▲ Panasonic's integrated SAT>IP TVs that will roll out in Germany in 2014



Satellites' Role, Present and Future

- ▲ **Satellite operators and service providers continue to invest in innovation**
 - Satellite spectrum is in active use and the sector continues to invest in efficiency and innovation, for continuous improvement in the use of satellite frequency bands



The game changer..

Low latency, higher throughput, lower cost per Mbps

- ▲ High Bandwidth - Scalable options from 50MB to 1GB
- ▲ High Speed - Fiber like performance
- ▲ Low Latency - Roundtrip latency of less than 150ms enabling:
 - Faster interactivity
 - Superior Voice and Video quality
- ▲ Low Cost - Lower cost per bit
- ▲ Flexibility - Steerable beams can be placed anywhere 45° North/South of the Equator

Satellites' Future - Conclusion

- ▲ Satellites are an integral component of telecommunications infrastructure
- ▲ Satellite sector players continue to invest in efficiency and innovation
- ▲ Regulators play a key role in maintaining this infrastructure, through spectrum and regulatory policies that foster access to satellite services

Thank you!

