

Title: Satellite in the ecosystem of 5G and beyond

Abstract

ESOA represents 20 global and regional satellite operators as well as supplier companies providing launch, insurance, equipment, regulatory services to the satellite sector. Our vision for 5G is in line with the European Commission, the CEPT & ITU's visions of 5G, which is that 5G is not just the Next G but will be a Network of Networks.

Many people wonder what the difference between 4G/LTE and 5G will be. Only by seeing 5G as a Paradigm Shift in Connectivity, where for the first time there is connectivity based on heterogeneous networks can we see the real differentiator of 5G over previous mobile standalone solutions. By integrating different technologies, the offering in terms of meeting diverse service requirements is huge and can unleash new markets & drive growth for both MNOs and satellite operators

With that 5G vision in mind, satellite operators & their services have evolved over many years: from IGOs to listed companies with diverse private investors; from wholesalers of bandwidth to value-added partners; from being a proprietary, non-interoperable technology to now working on standards for integration with terrestrial networks. Innovation has therefore happened across the value chain from the space segment (more throughput in different orbits) to the ground segment (smaller, flat panel antennae with no moving parts enabling BB on the move for future 5G verticals). Even though there is so much attention on 5G today, it does not & will unlikely ever characterise the future of global connectivity unless we can achieve successful integration of different technologies. The future of connectivity ranges from advanced communications touching AI, IoT, eMBB, etc. to basic connectivity bridging the Digital Divide and delivering on the Sustainable Development Goals. Whether its 5G or the SDGs, satellite has a clear role to play in delivering on all these objectives and in particular to overcoming key obstacles faced by standalone mobile technology. Collaboration & integration is the only way forward. For 5G, we see 4 main use cases where satellite strengths will play a key role & they help provide the framework for concrete work that we do:

- Trunking & head-end feed: which addresses high-speed trunking of video, IoT and other data to a central site with further distribution to local cell sites
- Backhauling and Tower Feed: which is about high-speed backhaul connectivity to individual cells with the ability to multi-case the same content across a large coverage – it could also be aggregated IoT traffic
- Communications on the Move: is about high-speed backhaul connectivity to individual in-motion terminals on planes, vehicles, trains and vessels with the ability to multicast the same content (video/firmware updates OTA/other non-video data) across a large coverage area e.g. for local storage and consumption

- Hybrid Multiplay: which is about high-speed connectivity including backhaul to individual homes and offices, with the ability to multicast the same content across a large coverage area. It also allows for efficient BB connectivity for aggregated IoT data

The satellite involvement is real and ESOA and its members are working within 3GPP to define the standards required to ensure the necessary technology integration takes place. Specific items are under study in relevant 3GPP Task Groups and will become part of 3GPP's Release 17 due in June 2021.
