David Andres, Business Development Manager at Santander Teleport

Teleports of today

Teleports play a vital role in the global space and satellite industry, delivering vital services that let spacecraft communicate with the ground. In recent years, there's been a significant change in the challenges and opportunities for teleports, as discussed by David Andres, Business Development Manager at Santander Teleport.

Satellites are at the heart of the technological developments shaping our era. They affect the way we live without even realizing it: They make us safer, predict the weather, provide modern conveniences, broadcast entertainment, and ubiquitous communications. Independently of the mission these are designed to achieve (broadband communications, broadcasting, weather monitoring, earth observation, navigation…), we cannot help looking up to the sky and thinking ´that is where everything is happening.´

But those of us who work in this industry know that the overall satellite ecosystem is built as a result of the integration of the space segment (satellites) and the ground segment (teleports, baseband systems, user terminals, and terrestrial networks). A key element of this ground segment is the teleport, also known as the Earth station or ground station.

The teleport facility is the nexus between Earth and space, the hub where data and video traffic are collected, processed and transmitted to the world via satellites, or received from the satellite and distributed via terrestrial networks. It is easy these days to ignore the importance of the teleport as a fundamental piece of the satellite ecosystem. In a new upcoming era of low Earth orbit (LEO) constellations and satellites of all sizes and purposes, where digital processing – once destined to remain in the ground – is conquering the skies to make more efficient use of the radioelectric spectrum and provide higher orders of magnitude of bandwidth, we are more than ever starting to recognize - paradoxically - that development in ground systems is playing catch up with technology flying in space.

Interesting challenges and opportunities

Our industry is getting ready to launch global constellations of communication satellites to connect the undeserved, but we are yet to figure out how we can provide low cost, size, weight and power user terminals that will make mass adoption of truly universal broadband communications a reality. We can design and launch Earth observation satellites on small and nanosatellites with unthinkable capabilities only a decade

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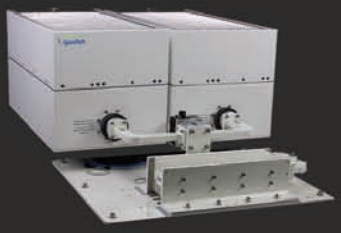

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ago, yet we are still working out how to process the vast amounts of images and data that will be generated and sent back to Earth, to develop compelling applications that to attract the end users by bringing new value and industry growth. It is obviously early days yet and some of these disruptive technologies will catch up; the successes of new ventures originating from them will be determined by successful business cases.

The teleport operators of today face interesting challenges and opportunities. In the past, the supply chain of the satellite communications market was clearly defined with satellite operators providing bandwidth, teleport operators providing the necessary facilities to connect ground with space, and service providers offering managed services to end users in diverse markets branching out of two primary and very differentiated areas: Broadcast and data. As time evolved, teleport operators engaged into more profitable managed service offerings, service providers started to bring their own infrastructure into the teleports (in some case acquiring or building their own teleport facilities), and satellite operators used their own teleports to provide space and teleport services… Or any combination of the above.

Nowadays, satellite operators are taking more control over the value chain, and the once shy to admit a strategy that would bring them to compete face-to-face with their own customers are now openly admitting that offering managed services to specific vertical markets is an intrinsic part on their strategy. Furthermore, the new advent of high and very high throughput satellites, whilst bringing huge amounts of satellite capacity to certain areas, are making it hard for teleport operators and service providers to own their own platforms to efficiently take advantage of the new spacecrafts, and easier for satellite operators to justify their quest to sell Mbps and MHz. Whilst this seems all but good news for teleports operators, the reality of managing the huge amounts of capacity across multiple spot beams is rapidly bringing new opportunities to independent teleport operators, as satellite operators must adopt a less centralised and more disperse ground station architecture to tame the hundredths of Gbps that new spacecrafts are able to process. The ground station serving a communications satellite becomes a network of teleports across vast geographical areas, interconnected by a high-speed terrestrial backbone network, and far more powerful data processing hardware and management platforms.

Verticalization of satellite operators is not a free-ride

In addition to this, verticalization of satellite operators is not a free-ride, but one that requires appropriate commercial channels and business operations for each individual vertical (whether maritime, aviation, broadband, broadcast, etc). It is not a simple matter of offering Mbps versus MHz but involves a full engagement with the issues and needs of individual end customers. Each vertical has its own idiosyncrasy that requires a level of specialization at all commercial technical and operational levels. Satellite operators will only be successful through strong partnerships with existing specialised service providers, effectively going back to the old model of service providers and satellite operators working together and focusing on those areas where each party excels at.

On the other hand, the explosion of new technology and financing in the space sector is bringing new capabilities in communications, Earth observation, GEO positioning and space situational awareness applications. Whether it is GEO, MEO or LEO, teleport operators serving satellite communications markets - as providers of critical mission ground infrastructure and support - have the knowledge and experience to support these fast expanding markets across the whole satellite ecosystems.

Teleport operators need to adapt their strategy

It is easy to keep up with the vertiginous speed of technological advances in the telecommunications industry, satellite not being less affected it its own ways. In a certain sense, whilst teleport operators need to adapt their company strategy considering the current industry transformation, it is also easy to get too distracted by it and lose focus on the most important thing of all: Our customers. Customers relationships are built on trust, and trust is hard to build but easy to lose. Customer excellence must by at the centre of the strategy of any successful long-term company and needs to be endorsed by all departments, commercial or operational, financial or corporate.

Aerial view of Santander Teleport in Spain

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