SES

CASE STUDY

ENABLING A DIGITAL CHAMPIONSHIP

Resilient Cloud Access for an Exceptional Event Experience

Industry
Cloud

Location
Qatar

NEW DIGITAL TECHNOLOGIES FOR ATHLETES & FANS

Cloud computing is transforming the way sporting events are played by athletes and experienced by fans.

As one of the leading emerging countries in technology innovation, Qatar wanted to ensure it could support advanced technologies when hosting a major sporting event

Wearable electrochemical sensors that send data about athletes' sweat and saliva to the cloud for analysis can improve performance and reduce the risk of injury. Digital badges can simplify identity and access control, creating a better experience for ticketholders. Cloud-based streaming video that provides augmented graphical overlays and the option to switch among different camera angles can let fans at home feel just as much a part of the action as those in the stands.

As one of the leading emerging countries in technology innovation, Qatar wanted to ensure it could support these advanced technologies when it hosted a recent major sporting event. Microsoft has invested heavily in Qatar over the last few years, including launching a new data centre region in Doha in the summer of 2022, and this significant event provided Microsoft with an opportunity to help Qatar create a truly exceptional experience for athletes and attendees alike.

ENSURING CLOUD ACCESS WITH SATCOM-BASED BACKUP

SES ensured network availability by providing satellite-based connectivity in the event of a fibre failure.

A robust architecture is critical to the success of cloud-based digital services. Microsoft ensured that quality of architecture for this mission-critical event by opting to run parallel workloads both in-country and in their data centre in Amsterdam. The cloud service provider then further bolstered network availability by working with SES to provide satellite-based connectivity in the event of a fibre failure.

Microsoft's specific requirements included the following:

- 10 Gbps of satellite bandwidth
- Connectivity from its operations nodes in Qatar directly to its data centre in Amsterdam
- Service for a three-month period to meet the specific requirements of the event

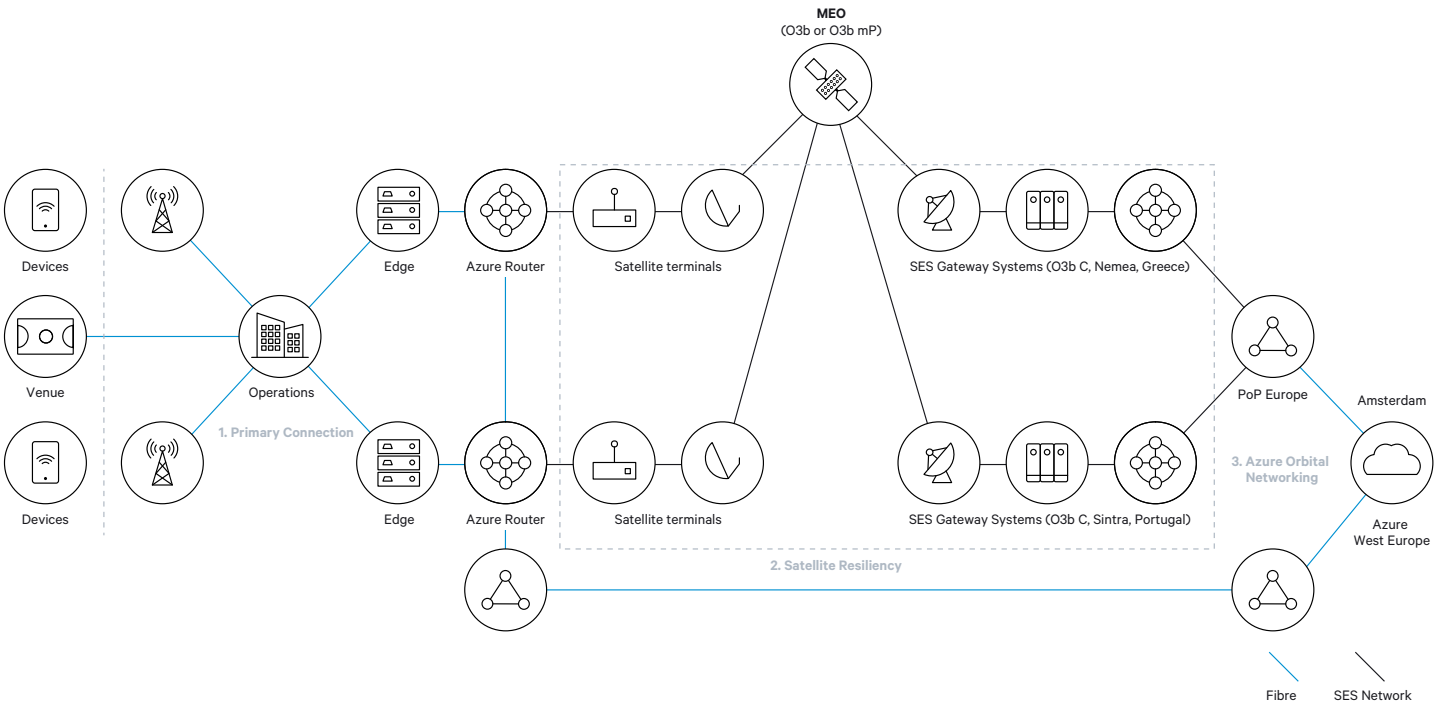
AUTO FAILOVER FOR SEAMLESS CLOUD CONNECTIVITY

After evaluating Qatar's existing fibre networks, Microsoft opted to add satellite-based connectivity to its architecture to ensure the architecture was robust enough to support the cloud workloads generated by the event.

Mission-critical events where high-value workloads are being run in multiple geographies require specific levels of network availability.

Microsoft asked SES to provide connectivity via its O3b Medium Earth Orbit (MEO) network as a full end-to-end service, creating two separate paths to deliver an extra layer of satcom resilience. Leveraging teleports from local partners Ooredoo and Es'hailSat, SES connected two MEO terminals in Qatar – one located in Al Khor on the northern end of the country and one in the capital city of Doha – to O3b MEO gateways in Sintra, Portugal, and Nemea, Greece, with three spot beams layered to deliver the required bandwidth. From those gateways, traffic was transferred to peering locations in London and Frankfurt, then sent over the Microsoft global network to the Amsterdam data centre. An Azure router managed this hybrid network, automatically switching from terrestrial to satellite if needed.

Creating a robust architecture



DELIVERING NETWORK RESILIENCE

SES's direct peering relationship with Microsoft means traffic generated by the event was just one hop from the cloud, enabling fibre-equivalent latency on the link from Doha to London and no detectable difference in application performance.

The SES network delivered a level of connectivity comparable to that of a terrestrial network.

These results demonstrate how MEO-based satellite technology can be leveraged to add multiple layers of network resilience for critical cloud workloads. The O3b MEO and O3b mPOWER systems feature the high-speed return paths needed to send event-related sensor data to the cloud for processing and analysis and upload video feeds to the cloud to ensure an uninterrupted viewer experience. Both networks also feature broad geographic reach that allows cloud traffic to be flexibly routed to alternative data centres without affecting latency or performance. This critical automated failover capability makes SES's MEO capabilities the optimal choice for ensuring seamless access to cloud resources in any number of scenarios - from delighting sports fans during major athletic events to saving lives during a natural disaster.

For additional information on how SES is bringing the cloud to every location, please visit www.ses.com

SES HEADQUARTERS

Château de Betzdorf
L-6815 Betzdorf
Luxembourg

Published in May 2023.

For more information about SES, visit www.ses.com