

CONNECTING REMOTE MISSIONS TO THE CLOUD

Microsoft and SES Networks

Case Study

Industry

Cloud

Location

Europe

SES[▲]

A woman in military camouflage uniform and glasses is focused on her work, typing on a laptop. She is standing in a server room, with rows of server racks visible in the background. The lighting is dim, highlighting her concentration. The overall tone is professional and technical.

Together with Microsoft, we're bringing cloud connectivity to remote military missions, enabling governments to vastly enhance operational efficiency.

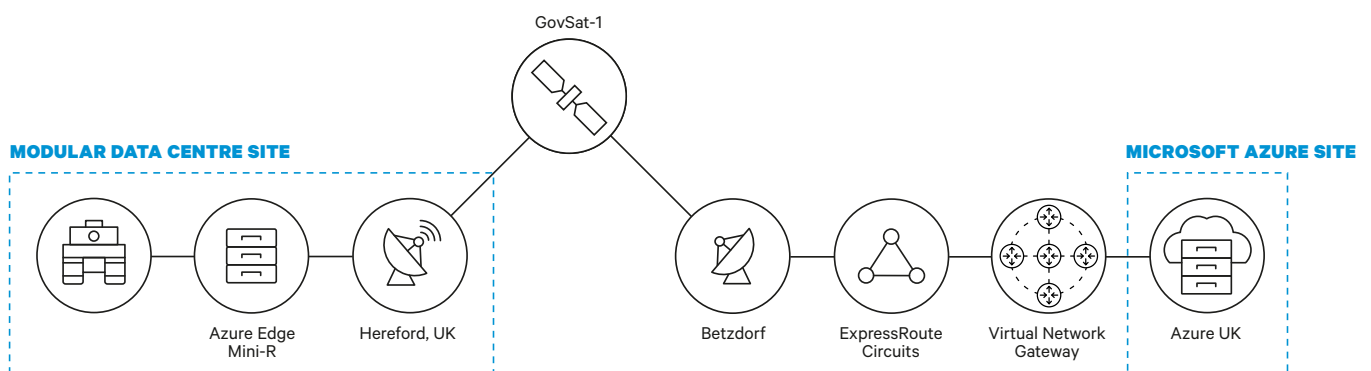
The cloud has the potential to enable a range of military use cases—including autonomous vehicles, intelligent advanced warning systems, and multi-sensor reconnaissance missions.

Military operations increasingly rely on intelligent sensor technology to drive more efficient and effective missions. Data can be collected from a wide range of connected devices—including aircraft, weaponry, ground vehicles, and human-wearable devices used by troops. Processing, analysis, and dissemination of this data yields insights and recommended actions that are critical to success and safety in the field.

The cloud has the potential to enable military use cases such as autonomous vehicles, intelligent advanced warning systems, and multi-sensor reconnaissance missions—assuming deployed teams can access secure, high-quality connectivity that is capable of supporting these applications at their locations. Yet, with remote missions frequently unreachable by terrestrial connectivity, governments are unable to fully capitalise on advanced technologies. Robust, reliable satellite network services help bridge the gap, allowing government users to leverage cloud workloads to boost the efficiency and safety of their missions.

Connecting remote sites or edge nodes to a major cloud platform means data can be processed locally as needed, and sent to the cloud for additional analysis. This necessitates high-availability, high-throughput connectivity optimised for the transfer of critical data. SES Cloud Direct provides the required level of service, extending dedicated connectivity from any remote end point to the cloud. The scalable, reliable, and secure connectivity delivered by our multi-orbit, multi-band satellite network supports high-value, mission-critical cloud workloads, enabling advanced military technologies—even in the world's most remote regions.

Connecting edge nodes to an Azure data centre



The demonstration with Microsoft illustrates how advanced cloud-based technologies can be extended to deployed users without compromising security or network sovereignty.

Together with our partner Microsoft, we validated our cloud capabilities in a recent demonstration, showing how Microsoft Azure Machine Learning (ML) and Artificial Intelligence (AI) services can be brought directly and securely to deployed personnel. The demonstration was undertaken in collaboration with GovSat—a public/private partnership between the Government of Luxembourg and SES developed to provide communication services to defence and institutional security organisations—and UK-based solutions provider GRC.

The demo featured two live scenarios in which cloud workloads running on a disconnected edge device seamlessly connected back to Azure over Cloud Direct—enabling machine learning models to be retrained and retooled based on new data. We connected an ultra-portable edge computing device, the Azure Stack Mini R, to Azure UK via a quick-deploy tactical satcom terminal from GRC, leveraging the secure SATCOM connection on the GovSat-1 satellite.

SCENARIO 1

Cloud workloads connect back to Azure via the Azure Stack Edge Mini R, leveraging multiple GRC 6SAT terminals, dedicated military Ka-band beams on GovSat-1, and GovSat's secure Mission Operations Centre in Luxembourg.

SCENARIO 2

Using the same elements in the first scenario, we leveraged GRC's deployable Satellite Ground Station (SGS) connected to the in-theatre headquarters and the GovSat Mission Operations Centre. This demonstrated our ability to backhaul data from in-theatre headquarters to a home country with no public internet touchpoints.

Through this demonstration, we illustrated how advanced cloud-based technologies, such as machine learning and artificial intelligence, can be extended to deployed users without compromising security or network sovereignty—improving the safety and efficiency of critical missions. While this specific scenario leveraged high-throughput geostationary connectivity, we can also deliver the same level of connectivity between the edge and the cloud with our low-latency O3b MEO satellite network and our upcoming next-generation MEO system, O3b mPOWER. The O3b mPOWER system will deliver multi-gigabit, dedicated services capable of supporting the most demanding latency requirements, with gateways co-located in major data centres for simple, one-hop connectivity to the cloud.

Work with us to ensure your missions have access to the cloud-based services and technologies they need to be successful.



To learn more about this project
or SES's cloud solutions, head to
www.ses.com/networks/cloud.

SES HEADQUARTERS

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