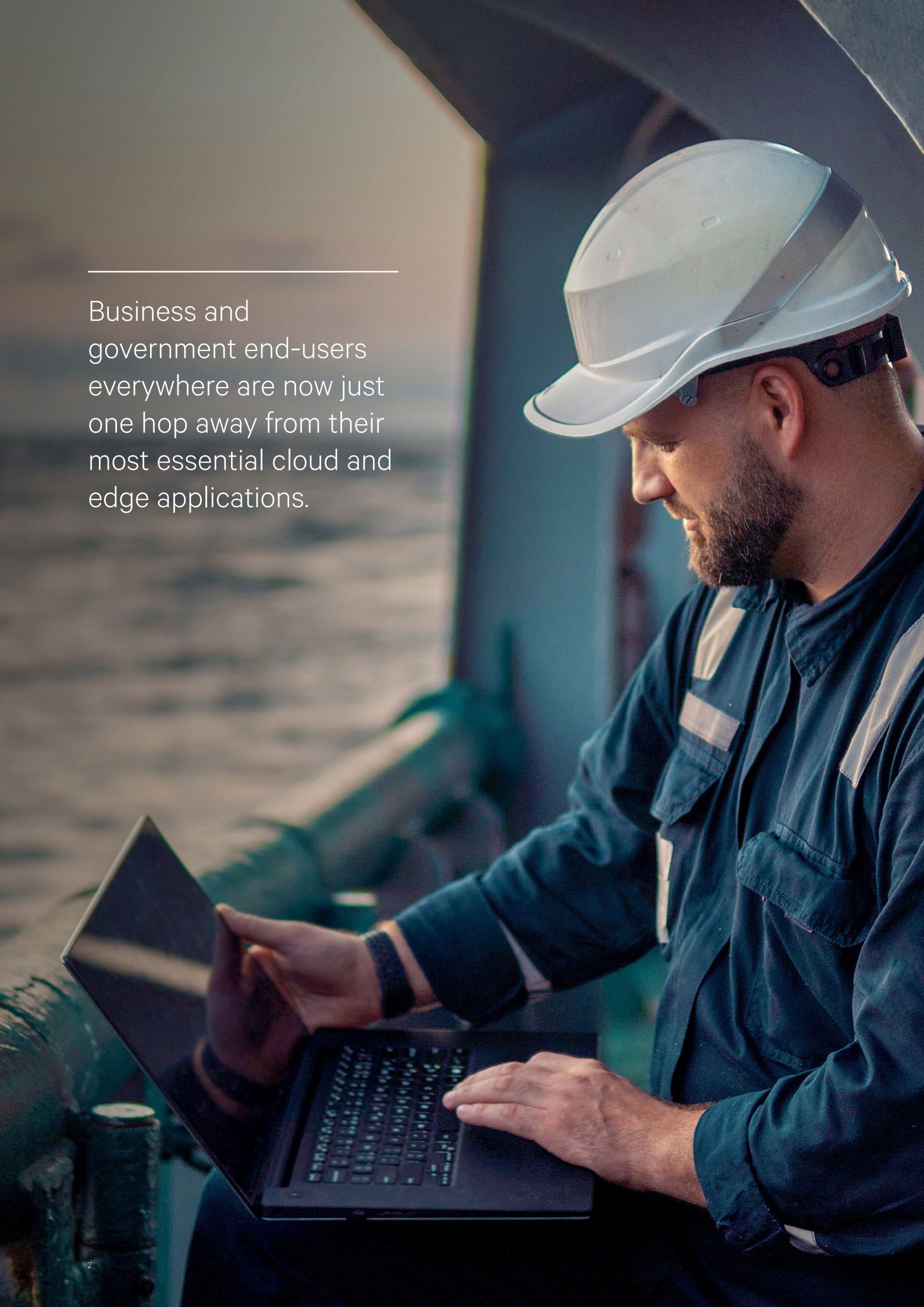
SES CLOUD DIRECT

SOLUTION BRIEF



Business and government end-users everywhere are now just one hop away from their most essential cloud and edge applications.

DELIVERING CLOUD-GRADE NETWORK SERVICES—EVERYWHERE

For enterprises and government agencies, the steady pace of cloud and edge services adoption creates boundless opportunities to deliver value to the entire operation, including in hard-to-reach areas where cloud-optimised connectivity is still a challenge.

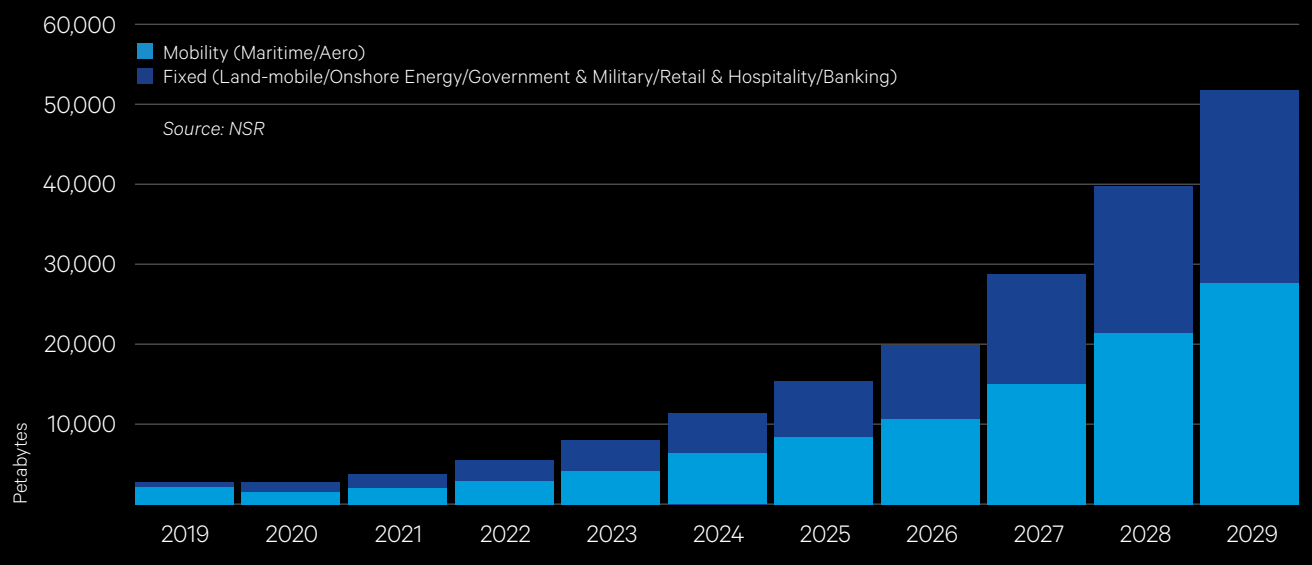
With access to satellite-based cloud-connect services, you can accelerate cloud-driven digital transformation, boosting productivity, reducing IT infrastructure costs, and reaching new thresholds of business and operational agility.

Realising these benefits, the opportunity to leverage cloud-optimised connectivity to create new revenue streams, increase customer retention, and ensure mission success is set to explode. Research firm NSR validates this trajectory with its forecast of cloud data traffic over satellite networks, which is projected to increase at a 34 percent compound annual growth rate (CAGR) from 2019 to 2029.

To help you take advantage of this opportunity, SES has joined forces with Microsoft and other cloud service providers to bring enterprise-grade cloud-connect services to any global end-point—whether in the air, at sea, or in underserved areas on land. Now, business and government end-users everywhere are just one hop away from their most essential cloud and edge applications, and one step closer to joining the whole organisation on the journey to the cloud.

34%
growth over the next
10
years

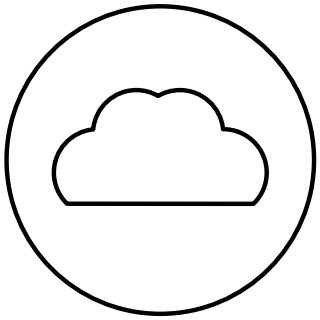
Satellite cloud data traffic forecast



PUBLIC INTERNET OR DEDICATED CLOUD-CONNECT?

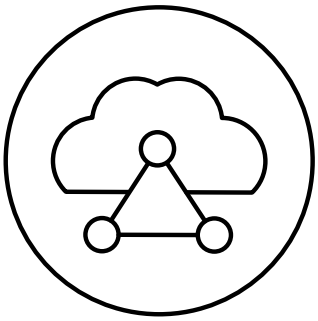
For enterprise and government sites, connectivity to cloud applications and services on platforms such as Microsoft Azure and Amazon Web Services (AWS) takes the form of either a public internet connection or a private, dedicated connection.

Examples of dedicated “cloud-connect” services, which bypass the public internet, include Microsoft Azure ExpressRoute, AWS Direct Connect, IBM Cloud Direct Link, and Google Cloud Interconnect, among others. Determining whether you require public internet or dedicated cloud-connect services depends on the performance, reliability, and security requirements of the cloud applications and workloads you need to support.



Public Internet

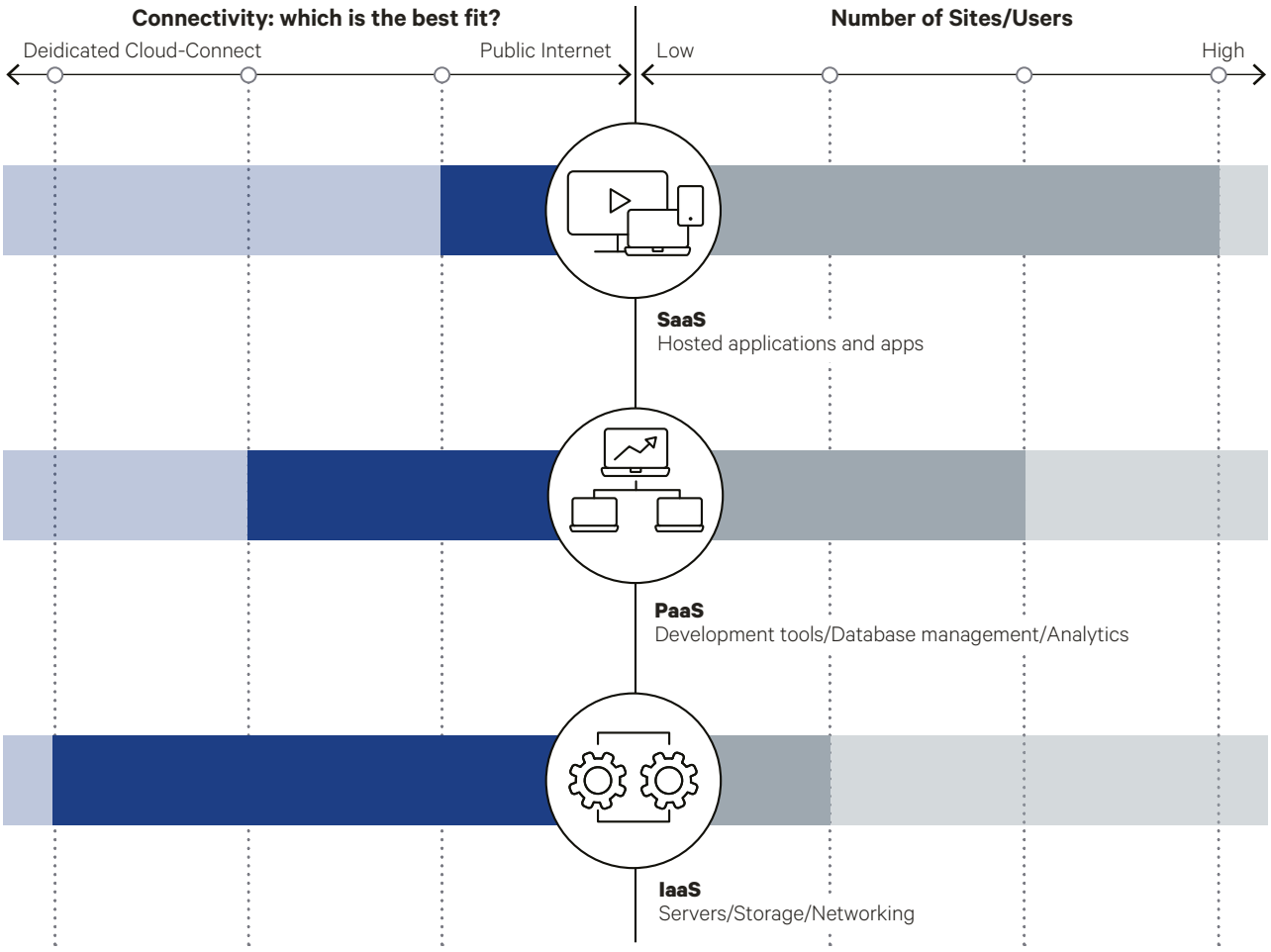
The most common hosted enterprise applications serving a large, distributed workforce, such as Office 365 and Dynamics 365 from Microsoft, typically require a robust, enterprise-grade public internet connection to meet performance and security requirements. These software-as-a-service (SaaS) applications usually need to reach a relatively large number of sites and users, and have been designed and optimised to perform reliably with robust internet connectivity that is simple and cost effective to manage.



Dedicated Cloud-Connect

Increasingly, enterprise and government network planners are turning to dedicated cloud-connect services to support high-value, mission-critical cloud workloads requiring deterministic performance, high availability, flexible routing, and robust security that bypasses the public internet. As an organisation expands its use of the cloud beyond SaaS to include platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS) solutions, the need for dedicated cloud-connect services increases.

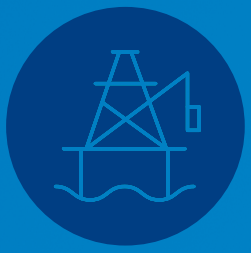
Cloud service type is a key factor in selecting the right cloud-connect solution



KEY INDUSTRIES WHERE DEDICATED CLOUD-CONNECT IS ON THE RISE

A growing number of industry sectors are adopting new, digital technologies and IT and operation technology (OT) environments that are transforming their organisations.

As cloud and edge applications are fundamental enablers of digital transformation, dedicated cloud-connect services are often required to support the high-value workloads underpinning these initiatives. Here are a few industries among many where dedicated cloud-connect services are on the rise.



OFFSHORE ENERGY

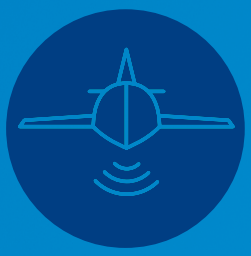
By leveraging Industrial Internet of Things (IIoT) and Artificial Intelligence (AI) applications, oil and gas companies can reach new thresholds of operational efficiency. Inferences gained at edge compute nodes on offshore rigs can be aggregated at cloud data centres, where advanced analytics and machine learning algorithms generate actionable insights to support more efficient, cost effective exploration and production. To ensure real-time processes and workloads run smoothly, energy companies need the scale, low-latency performance, and secure environment afforded by dedicated cloud-connect services.

COMMERCIAL SHIPPING

Cloud-enabled IIoT is disrupting the commercial shipping industry on a wide scale. Solutions like real-time cargo tracking and monitoring, route management for improved fuel efficiency, and analytics processing for diagnostics and predictive maintenance are paramount to service differentiation and operational efficiency. To gain an edge, shipping companies are re-designing their networks, requiring more secure, reliable, and high-performance connectivity to the cloud via dedicated cloud-connect services.

MINING

According to Accenture, 82 percent of business leaders in the mining industry expect investment in digital transformation to increase over the next three years, with 81 percent of mining companies planning to increase adoption of cloud technologies. The era of “smart mining” embraces real-time, cloud-driven data visualisation, analytics, and virtual and augmented reality to improve safety, efficiency, and profitability. Reliable, deterministic network performance via dedicated cloud-connect services is a key enabler of this transformation.



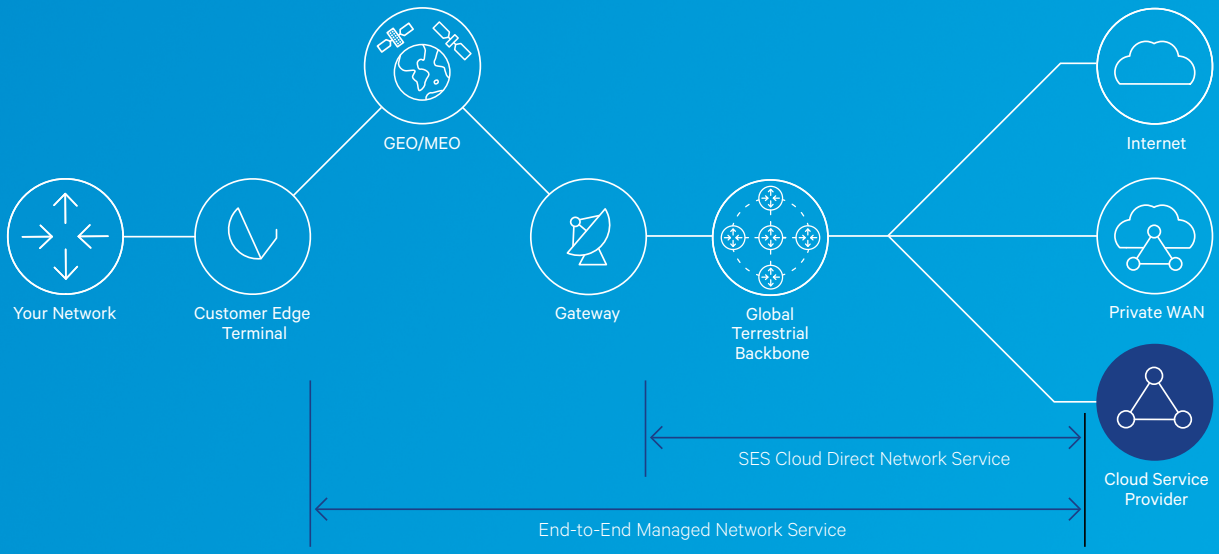
GOVERNMENT: ISR (Intelligence, Reconnaissance and Surveillance)

As expectations grow for cloud technologies to transform operational architectures and military information systems, ISR technology is rapidly improving. Equipped with an increasing number of high-fidelity sensors, modern airborne ISR assets can execute a wider variety of tasks with reduced need for human intervention. As the volume of data generated on ISR missions proliferates, current Processing, Exploration, and Dissemination (PED) capabilities require scalable, reliable, and secure cloud connectivity best served by a dedicated service.

SES CLOUD DIRECT

Growing your Cloud Connectivity Business

SES Cloud Direct is a managed network service delivering private, dedicated connectivity from SES geostationary Earth orbit (GEO) and medium Earth orbit (MEO) gateways to a growing number of top-tier cloud service providers.



Dedicated connectivity to top-tier cloud service providers

SES Cloud Direct extends an IP or Ethernet based satellite link from any remote site to the cloud, effectively creating an end-to-end, dedicated connection from an enterprise or government remote site (or edge compute node) to the cloud. At the gateway, SES separates traffic destined for the public internet from traffic routed over the SES Cloud Direct on-ramp.

SES Cloud Direct supports eight levels of throughput offered as committed information rates (CIR) between the SES gateway and the cloud service provider: 50, 100, 200, or 500 Mbps, and 1, 2, 5 or 10 Gbps. These rates match the bandwidth levels supported by our cloud service provider partners, and are part of a broader, cloud-grade service level agreement (SLA) covering service availability and latency performance.

Microsoft Azure ExpressRoute Partnership

As a certified ExpressRoute partner, we use our global network of satellite gateways—inter-connected via the SES worldwide terrestrial IP backbone—to connect your end-users to Azure data centres via the SES Cloud Direct service. Getting connected is simple. End-users simply select SES as an ExpressRoute connectivity partner from the Azure portal, which then activates the provisioning of an ExpressRoute circuit from an SES gateway to a growing number of Azure peering locations.

CHOOSING A CLOUD-READY PARTNER

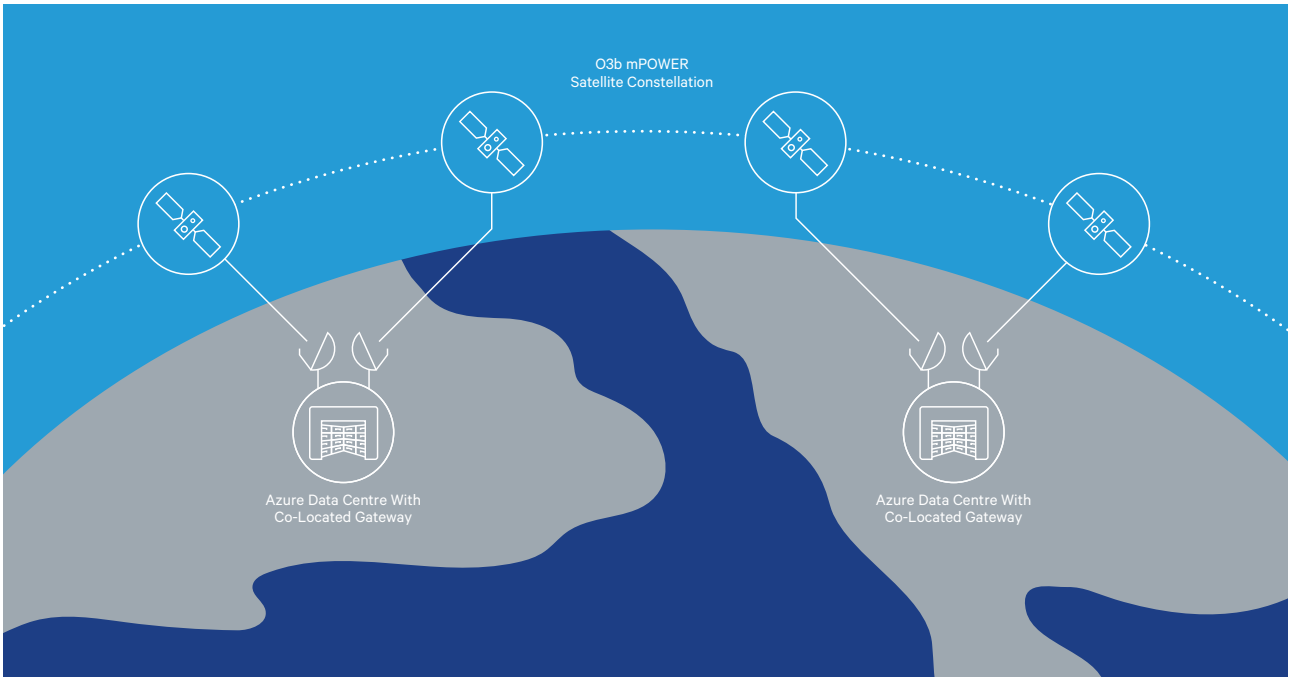
Bringing cloud connectivity services to your customers requires a partner that can help you reach any global end-point, connect to any cloud service provider, differentiate services with high-performance and reliability, and scale with your business as more of your customers migrate to cloud and edge services.

Having made the investment to certify our services, integrate operations, and inter-connect our network with the most vital cloud platforms worldwide, SES is the cloud-ready partner you need. You can rely on the SES Cloud Direct service to accelerate and simplify your plans to connect your customers to critical cloud applications.

One-hop connectivity to the cloud with O3b mPOWER

Launching in 2021, our O3b mPOWER communications system will deliver multi-gigabit, low-latency services with dynamic bandwidth allocation of forward and return path capacity—ideal for supporting variable, "bursty" cloud workloads and your most essential, high-throughput applications. O3b mPOWER affords SES Cloud Direct customers unmatched flexibility to route user traffic from any remote site or edge compute node to any O3b mPOWER gateway or cloud data centre.

As part of Microsoft's Azure Orbital Ground Station as a Service (GSaaS) initiative, SES is co-locating O3b mPOWER gateways in several Azure data centres, increasing the number of co-location sites steadily over the next few years. By operating gateways in Azure data centres, SES enables simple, one-hop connectivity to Azure, reducing end-to-end latency, improving application performance, and simplifying routing of end-user or edge node traffic to the cloud.



Co-location of O3b mPOWER gateways in Azure data centres

High performance backed by cloud-grade SLAs

By connecting to our O3b MEO fleet, SES Cloud Direct customers gain high-throughput, low-latency performance ideal for an increasing number of cloud workloads where large data sets and latency-sensitive applications need to be supported. O3b MEO Ethernet services are MEF certified, simplifying extension of standards-based Ethernet services from cloud data centres to our network and adhering to similar MEF-defined SLAs offered in terrestrial networks. SES Cloud Direct also provides connectivity through our GEO satellites and Skala Global Platform, our high-throughput Ku-band ground system solution, which is well suited for a wide variety of applications that are more latency tolerant but require expansive coverage and simple VSAT remote terminal connectivity. As a result, we can provide robust SLAs with MEO or GEO based services, covering availability, throughput, and latency performance thresholds from Azure data centres to any customer end-point.

Managed services expertise you can trust

As a managed service, SES Cloud Direct offers you a low-risk, turnkey solution that enables your customers and end-users to connect to the cloud over private, dedicated links wherever they operate. We have interconnected our global network via peering and co-location agreements with a growing number of cloud partners, so that you can simply—and cost effectively—use SES Cloud Direct to connect your customers to the cloud with a reliable, high-performance service. With the expertise of our Cloud Centre of Excellence, we provide the resources you need to accelerate your time-to-market, deploy with minimal risk, and enable your customers to increase adoption of high-value cloud applications.

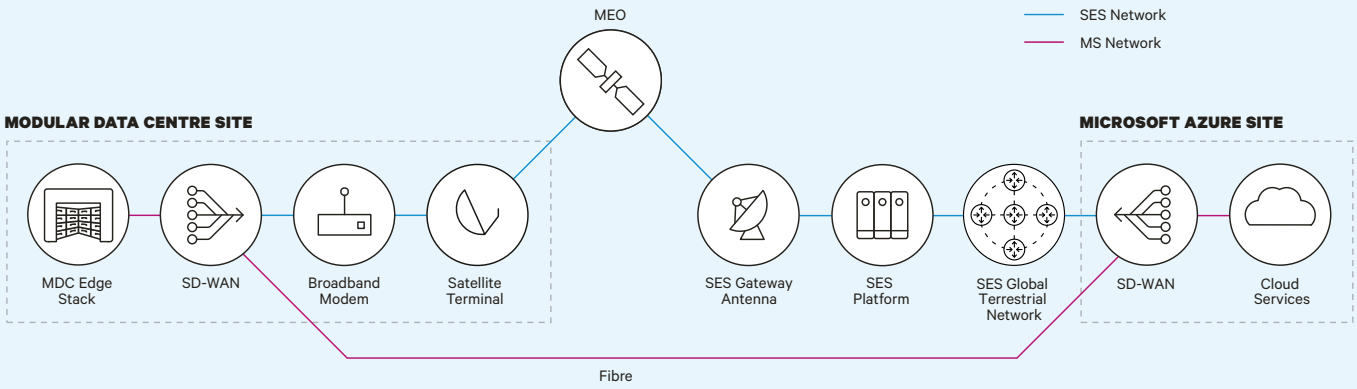
Hybrid, high-availability networking with SD-WAN

Software-defined wide area network (SD-WAN) is a key enabling technology that can be used to create hybrid, multi-access network services, intelligently prioritising and steering cloud application traffic over the optimal connection—whether MEO, GEO, or other access technologies, including fibre. With SD-WAN, SES Cloud Direct customers can combine MEO and GEO links into one logical connection and define policies to determine how each application is routed over the network. For SES Cloud Direct customers, SD-WAN can improve uptime, maximise bandwidth efficiency, improve application performance, and reduce cost per bit of transport.

Automated, cloud-scale operations

Operationalising SES Cloud Direct must be simple and automated, which is the aim of our partnership with Microsoft and Amdocs to host and develop an open, standards-driven service orchestration solution based on Open Network Automation Platform (ONAP). As the first satellite operator to adopt ONAP on Azure, we are designing an agile, cloud-scale operational environment in which SES Cloud Direct customers can activate high-impact virtualised network functions (VNFs) quickly and easily. Examples of VNFs that can be made available to your customers include security, WAN optimisation, and SD-WAN, among many others.

DEMONSTRATING CLOUD-GRADE MEO CONNECTIVITY TO MODULAR DATA CENTRES



Digital transformation initiatives are pushing more essential data processing to the edge. According to Gartner, edge compute adoption is on the rise, as 75% of enterprise-generated data will be created and processed outside of a centralised data centre by 2025. As a result, cloud service providers expect accelerating demand for services originating at the edge. This applies to defence and civil government use cases, and enterprise applications in mining, maritime, aviation, and many other sectors.

Indicative of this trend is the rising demand for Modular Data Centres (MDCs). Housed inside a hardened unit with dimensions similar to a shipping container, MDCs are self-contained data centres designed to be mobile, rugged, and secure. The units save on the time, costs, and resources required to deploy edge compute functionality, and their rugged design ensures they will work in the field—including in challenging environments.

For our demonstration, an O3b MEO satellite link provided resilient back-up to an Azure ExpressRoute service provisioned over fibre. Once the primary connection was severed, traffic continued at fibre-like speeds over the MEO satellite link with 700Mbps of throughput on the forward path, and 300Mbps on the return path, maintaining latency performance of less than 150ms. The solution was deployed via two 2.4m antennas installed on the MDC. The entire deployment of the satellite link—including ordering, shipping, configuration, testing, and activation—took only 30 days.

As edge compute applications promise transformational change for organisations worldwide, our demonstration establishes what's possible today via our existing O3b MEO constellation. Launching in 2021, our O3b mPOWER system will deliver multi-gigabit, low-latency, cloud-grade network services, with the ability to land traffic directly at gateways co-located at Microsoft Azure data centres.

SES has partnered with Microsoft to integrate cloud-grade, low-latency MEO connectivity with modular data centres serving government and enterprise applications.

Ready to grow your cloud connectivity business?

LEARN MORE

Request a quote today

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