

SECURING GLOBAL DEFENSE CLOUD CONNECTIVITY

Industry

Space & Defense

Location

Global

Together with Amazon Web Services, we're ensuring mission-critical connectivity for defense forces around the globe.



SES multi-orbit satellites provide secure, low-latency access to cloud-based applications via AWS MDCs.

Secure connectivity is mission-critical for defense forces around the globe. Yet the US Department of Defense (DoD) operates frequently in Denied, Disrupted, Intermittent, and Limited (DDIL) environments, where fibre networks are absent or existing infrastructure cannot support the redundancy required for missions.

Cloud-based applications and communications services are vital for DoD operations. The agency has stringent requirements around latency, data residency, and local data processing to ensure its users have real-time access to the information they need, when they need it. However, some applications must be deployed and operated at the edge, posing challenges in DDIL areas.

To ensure uninterrupted service, the DoD adopted AWS Modular Data Centres (MDCs) with SES satellite-powered network connectivity for reliable, secure cloud services wherever operations occur.

In February 2023, AWS announced the availability of the AWS MDC to the DoD under the Joint Warfighting Cloud Capability (JWCC) contract, a self-contained modular data centre unit that can be deployed to any location around the world. The AWS MDC can host racks of AWS Outposts or AWS Snow Family devices, ideal for low-latency applications in infrastructure-limited scenarios such as large-scale military operations, crisis response, and security cooperation.

In the AWS MDC, a deployed end user terminal connects equipment across the SES satellite link to the SES teleport. AWS Snowball Edge or AWS Snowblade can be added for remote edge processing and storage.

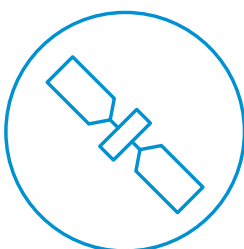
SES then connects traffic from the terminal at the SES teleport to the colocation facility, where workloads are transferred directly to the AWS cloud via AWS Direct Connect.

BUILDING BLOCKS OF THE NETWORK-ENABLED BATTLEFIELD



AWS Modular Data Centre

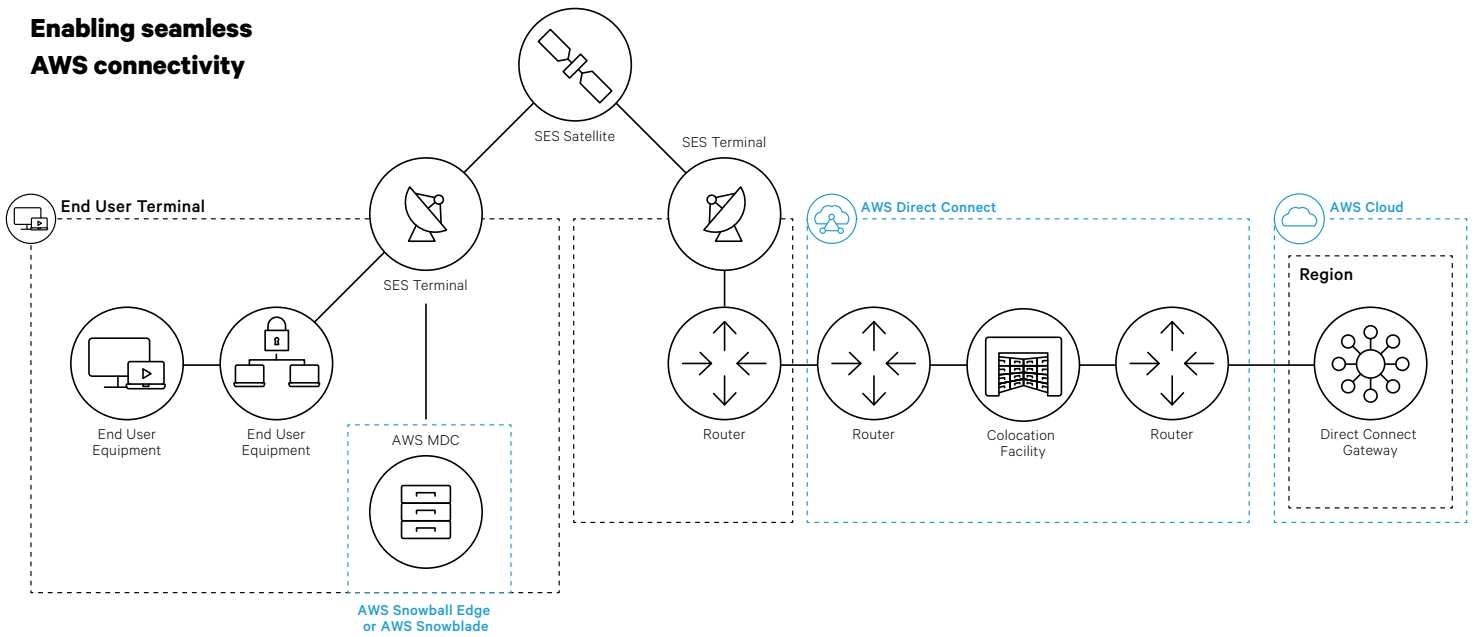
- Self-contained modular data centre solution supporting customers' workloads at scale
- Comprising ruggedised containers for intermodal freight transport
- Pre-configured with high availability infrastructure, including internal networking, cooling, and power distribution equipment
- Securely stores, analyses, and interprets petabytes worth of data in real time
- Can be racked with AWS Outpost or AWS Snow Family devices, enabling customers to run workloads using a scoped subset of AWS services



SES Satellite Network

- Multi-orbit (MEO and GEO), multi-band global satellite fleet, including O3b mPOWER
- Open architecture in space, ground, and user terminals enables users to bring their own modems and waveform
- Coverage across 90% of the populated world
- Fibre-like capability and enterprise connectivity for data, voice, video, and cloud services
- Direct connectivity to the AWS cloud, isolated from internet traffic
- Data rates: 100s-10,000s Mbps
- Ultra-low latency: Roundtrip latency of less than 150 milliseconds

Enabling seamless AWS connectivity



SES’s satellite network supports temporary AWS MDC deployments, providing immediate connectivity, as well as ensuring network redundancy for mission-critical workloads when the MDC uses terrestrial connectivity.

To complete the end-to-end SES Cloud Direct solution, connectivity is established to the AWS Direct Connect gateway in the AWS region for a fast, direct connection to all essential cloud-based services and applications.

By leveraging the combination of SES’s multi-orbit, multi-band global fleet of satellites and the AWS MDC, DoD customers can ensure uninterrupted access to their critical cloud services. The solution’s dedicated network enables one-hop connections between essential cloud services at the tactical edge and a broader set of cloud services in AWS regions. Together, SES and AWS support today’s network-enabled battlefield with the ability to extend cloud and edge computing rapidly and securely into the tactical ecosystem in real time.

Underpinning the AWS MDC is the satellite-enabled connectivity delivered by SES, the only satellite provider that is an AWS Direct Connect delivery partner. SES owns and operates a multi-orbit, multi-band fleet of Geosynchronous Earth Orbit (GEO) and

Medium Earth Orbit (MEO) satellites. Its next-generation MEO system, O3b mPOWER, is designed with an open architecture approach, allowing users to bring their own modems and waveforms. O3b mPOWER pushes industry benchmarks, delivering high-performance connectivity that enables services ranging from tens of megabits to multiple gigabits per second, with roundtrip latency of less than 150 milliseconds.

The combination of the SES network and the Cloud Direct managed service allows DoD users to process large data sets, such as Unmanned Aerial Vehicle (UAV) imagery or video footage, closer to the source of data collection and transmit back only mission-critical information for analysis.

This solution offers the DoD maximum flexibility in DDIL environments. SES’s satellite network supports temporary AWS MDC deployments, providing immediate connectivity, as well as ensuring network redundancy for mission-critical workloads when the MDC uses terrestrial connectivity.

Learn more about our satellite
connectivity for AWS MDC at
www.ses.com

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