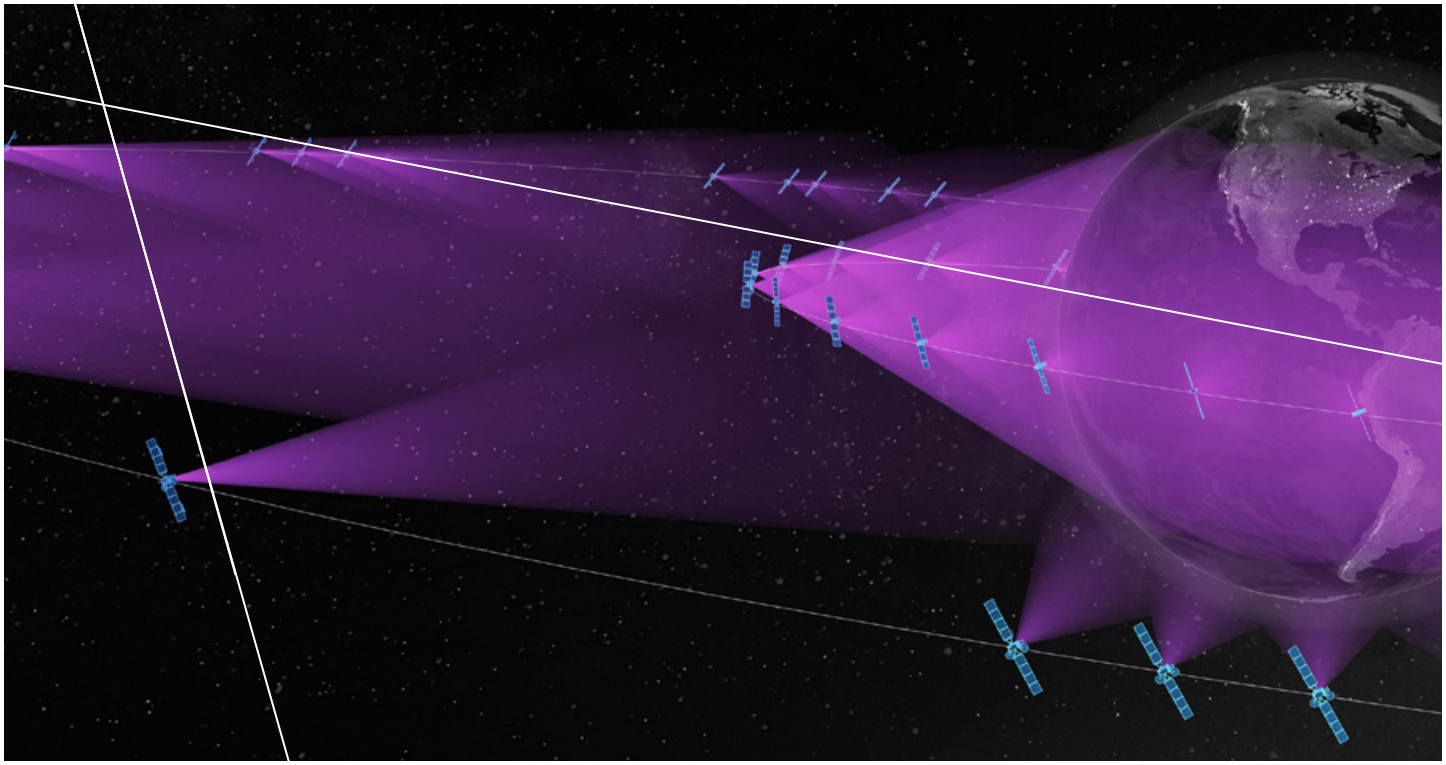
SES

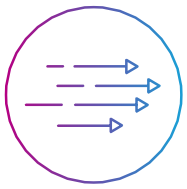
Q&A GUIDE



Industry
Telcos & MNOs

QUESTIONS YOU NEED TO ASK WHEN CHOOSING A SATELLITE SOLUTION

How will your service be contended?



Some operators advertise throughputs that may not be guaranteed. For example, "Up to 200Mbps" might indicate that 200Mbps are available for all customers within the satellite beam to share—a process called contention—which is common in consumer-grade services. Heavily contended networks are well suited for consumer-grade services, when it may be acceptable for throughput to drop during network congestion. Make sure that all your applications can be supported by the committed information rate (CIR), which is the guaranteed minimum throughput of a satellite service.

SES backs our CIR in every service level agreement (SLA)—even at multi-gigabit scale—which is one of the benefits of choosing carrier-grade connectivity. With O3b mPOWER, we offer contended or uncontended services, depending on your application. Either way, you always know exactly what CIR and maximum information rate (MIR) to expect, and are assured that your CIR can always cover all of your critical applications. If you plan to deploy multiple sites on O3b mPOWER, our private contention service enables you to share your contracted bandwidth across sites based on your requirements.

What return/upload throughputs can be achieved per terminal?

Some satellites can provide excellent throughput on the forward path (the download speed from the end user's point of view) but are throttled on the return path (the end user's upload speed). When connecting applications like video conferencing and enterprise cloud services, ensure that the return link is guaranteed to keep up with your network demands. A recent Ookla study[1] found that three major US satellite operators offered less than 15Mbps per return link—which is adequate for a single household, but not for an enterprise-grade network that must scale with increasing bandwidth demand.

O3b mPOWER has the flexibility to provide return links as low as one-fifth of your forward throughput or up to a symmetrical forward-to-return service, depending on your unique requirements.

What kind of service flexibility can you expect?

Knowing how your network can adapt to real-time demand shifts and evolve over the next few years needs to be considered in your decision today. Some satellite networks are rigid from day-to-day, yet allow room for future growth. Others—especially those that rely on public contention to support their business model—may provide more throughput than you need now, but offer no way to grow your services beyond that maximum to meet future demand.

O3b mPOWER is the most flexible satellite system in production, featuring proprietary software that enables you to reconfigure your network at predetermined intervals in response to your actual network metrics. Link Portability allows you to shift services from one site to another as demands change, while Link Agility lets you re-balance forward and return throughputs at a single site to ensure your network keeps up with changing download/upload demand. Both features help you avoid paying for service you're not using by flexibly allocating bandwidth where it's needed. With multiple terabits of total capacity across the system, your future needs aren't a problem—no matter how large your demands grow.

What else is guaranteed in your Service Level Agreement?

Common service attributes guaranteed by satellite SLAs include availability, CIR, and latency. However, not all satellite SLAs are created equal, and it's important to know what's guaranteed for your network.

SES provides SLAs specific to each service we offer. For telcos, mobile network operators, and satellite service providers, our O3b mPOWER SLAs guarantee that:

- **The terminal will receive throughput equal to the CIR as defined in each contract**
- **The service achieves a monthly availability of 99.5%**
- **Roundtrip satellite latency will not exceed 150ms**

1 Speedtest, "How Starlink's Satellite Internet Stacks Up Against HughesNet and Viasat around the Globe", Isla McKetta, 4 August 2021, www.speedtest.net/insights/blog/starlink-hughesnet-via- sat-performance-q2-2021/

Guaranteed in SES's Service Level Agreement:

150ms

maximum roundtrip satellite latency

99.5%

monthly availability of service

Where will your gateway be located, or can you use your own gateway?

In satellite networking, gateway/teleport location is almost as important as terminal location. Satellites that fly at low altitudes have a limited area to link two locations on the ground. You need to learn where your gateway will be, or if your terminals will change gateways as the satellite beam passes over the area. You may opt to own and operate your own gateway to ensure it complies with regulations, or co-locate it with your core network. If so, your satellite solution needs to support this approach.

SES offers our network of professionally managed gateways located strategically around the world. Our geostationary Earth orbit (GEO) and O3b mPOWER services allow you to own and operate your own gateway and ensure all your network performance, regulatory compliance, or privacy and control requirements are met. In addition, SES has co-located a select number of O3b mPOWER gateways within top-tier cloud service provider data centres to help improve the performance of vital cloud services.

How will your satellite operator interact with consumers and businesses in your service area?

Several satellite operators—especially low Earth orbit (LEO) service providers—reach out to consumers and businesses to sign them up for services directly. This can hamper your business strategy in two ways:

- If the satellite service uses public contention, each terminal in your operational area will use up the available bandwidth
- You may be in competition with a satellite partner that provides connectivity to end-users directly

SES helps you connect all existing and potential customers, yet our services aren't optimised for direct-to-home use cases. Instead of competing for the same customer, we enable our partners to capitalize on unique business opportunities through seamless network extension. For example, SES and Orange Business Services work together to connect mines and merchant shipping vessels with high-performance medium Earth orbit (MEO) and GEO connectivity.

How will you connect your core network infrastructure to the satellite gateway?

Satellite operators provide different strategies for connecting your existing network infrastructure to their gateways and teleports so that the terminal can reach the rest of your network via the satellite link. Some methods may introduce additional latency or performance risk to your network. You need to know ahead of time if you can peer at a convenient location, co-locate hardware at the satellite gateway, and if your connection requires multiple satellite or ground station "hops," or will use any public internet lines.

SES offers private peering at almost any internet exchange point (IXP) or point of presence (PoP), utilises private, redundant multi-protocol label switching (MPLS) lines for its terrestrial network, and supports hardware co-location at our existing gateways. As mentioned, we allow you to own and operate your own gateway to your exact standards.

What services can you expect at the gateway?

We've covered why location is an important factor of a satellite gateway, yet so are the value-added services. With some satellite operators now requiring hundreds of these ground stations to maintain constant connectivity with their constellation, it's tough to predict exactly what extra services can be provided.

SES has provided our managed gateway services for decades, building upon the real requirements we've received from a wide range of customers. Some examples include:

- **Optimised cloud connectivity with leading cloud service providers to offer faster, more reliable, and private connectivity for your end users**
- **Hardware spares and/or redundancies for every network element**
- **Available SD-WAN solution for back-up and route optimisation services**
- **Redundant ultra-high throughput connectivity to leading internet backbone carriers and content delivery networks**
- **Virtualised network functions and services launching soon as we further integrate our network and elements of our service catalogue into leading cloud provider environments**

Talk to us today about whether O3b mPOWER is the right satellite solution for your business.

Learn more about our full portfolio of services and solutions at **ses.com**