White Paper: Real-Time Collaboration in the Maritime industry

Is Low Earth Orbit Satellites (L.E.O) a game-changer for the high seas?

Explore ›

Speakerbus

Introduction

Real-time secure communications you can count on, no matter what

Navigating the vast oceans demands reliable and efficient communication, and L.E.O (Low Earth Orbit Satellites) is emerging as a transformative force in the marine industry.

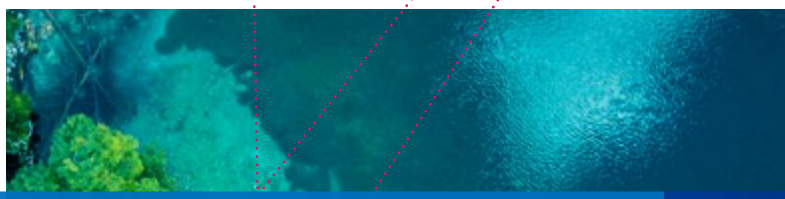
With its global coverage and advanced technology, L.E.O brings a wave of benefits to marine operations.

From enhancing communication and navigation to fostering crew welfare, L.E.O's impact is being felt across the various facets of maritime life.

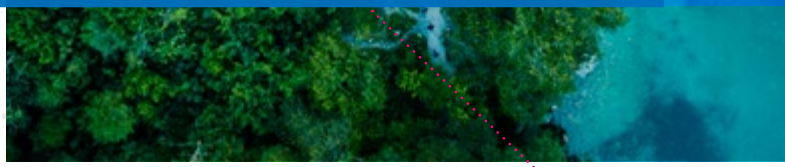
Let's dive into the key advantages that make this a game-changer for the high seas.

The Benefits of L.E.O

Breaking down the top 10 benefits.

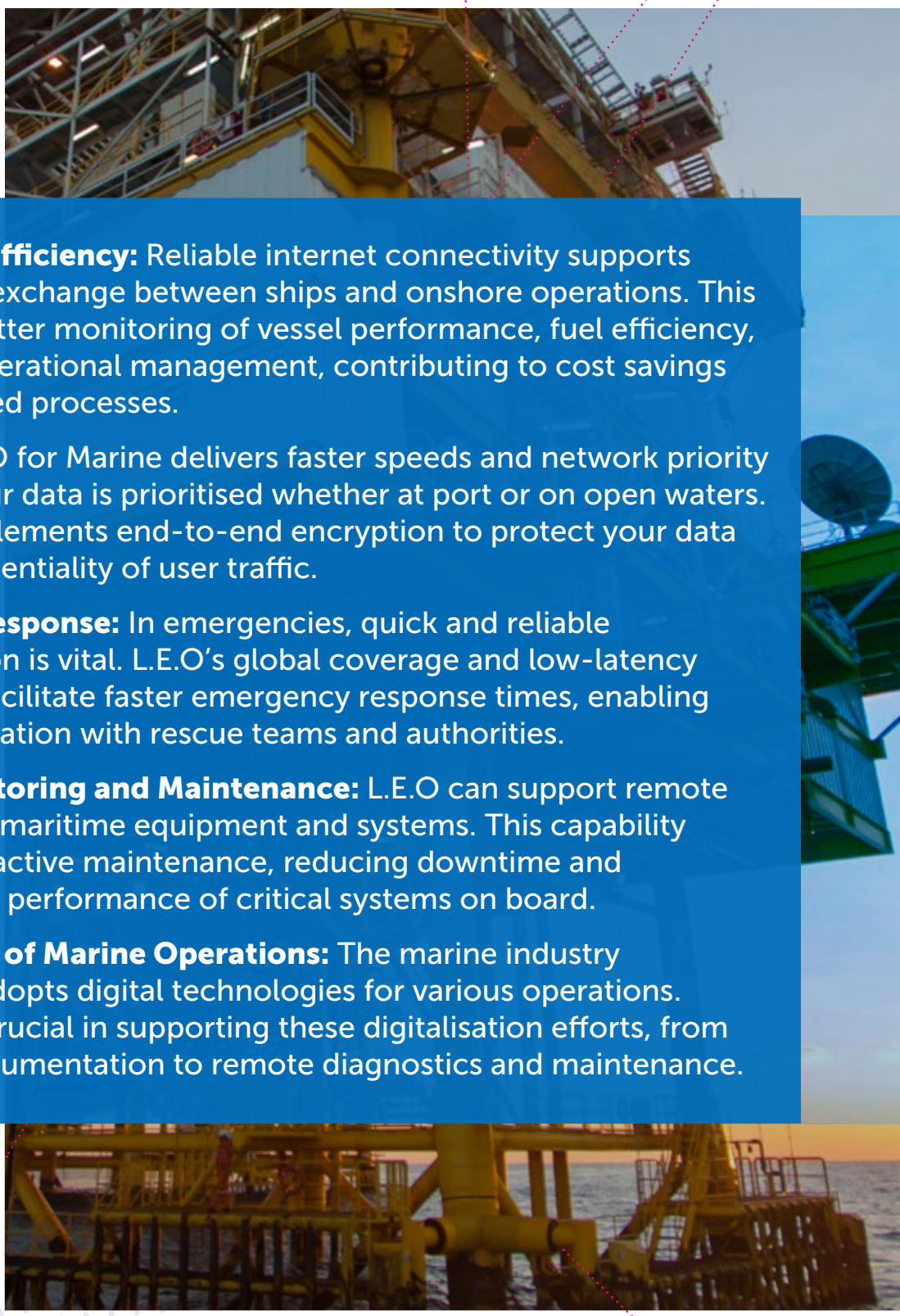


1. **Global Connectivity:** L.E.O provides global coverage, even in remote marine regions where traditional internet infrastructure can be limited. Ensuring ships can stay connected regardless of location enhances communication and operational efficiency.
2. **Access to Secure Specialist Collaboration Apps:** Reliable low latency broadband at Sea allows access to specialist collaboration platforms. The wider access also reduces the reliance on Big Tech like Microsoft Teams.
3. **Reliable Communication:** Traditional communication methods, such as satellite communication, sometimes face latency and signal issues. L.E.O provides low-latency, high-speed internet, offering more reliable communication for maritime operations, including communication, collaboration, navigation, weather monitoring, and emergencies.
4. **Improved Navigation and Safety:** With reliable internet connectivity, maritime vessels can access real-time navigation and weather data, enhancing safety at Sea. A crucial tool for avoiding hazards, optimising routes, and responding promptly to changing weather conditions.
5. **Crew Welfare:** L.E.O can contribute to improved crew welfare by enabling seamless communication between seafarers and their families. This connectivity allows crew members to stay in touch during long journeys, reducing isolation and enhancing overall well-being.



The Benefits of L.E.O

Continuing the benefits



6 **Operational Efficiency:** Reliable internet connectivity supports efficient data exchange between ships and onshore operations. This can lead to better monitoring of vessel performance, fuel efficiency, and overall operational management, contributing to cost savings and streamlined processes.

7 **Security:** L.E.O for Marine delivers faster speeds and network priority - meaning your data is prioritised whether at port or on open waters. L.E.O also implements end-to-end encryption to protect your data and the confidentiality of user traffic.

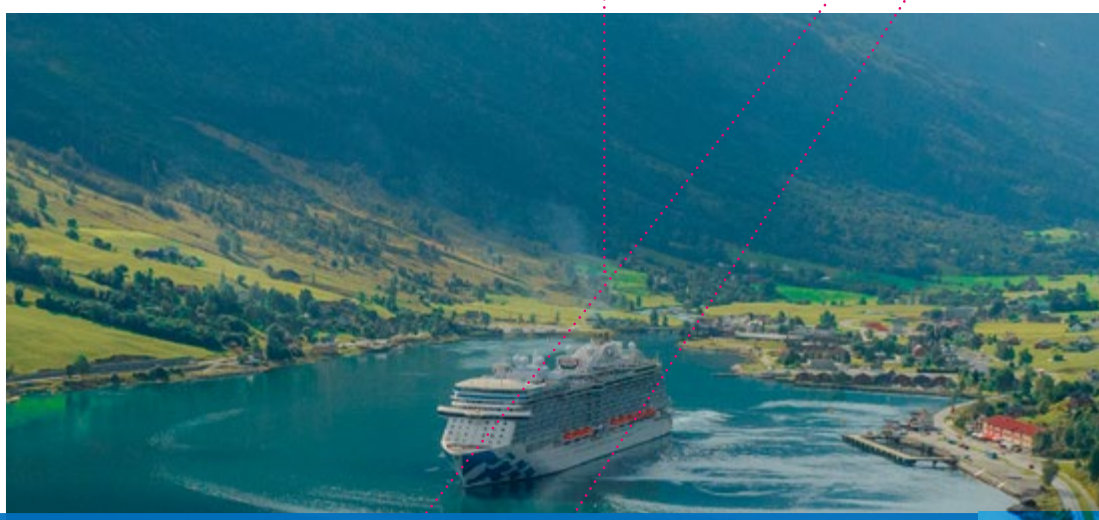
8 **Emergency Response:** In emergencies, quick and reliable communication is vital. L.E.O's global coverage and low-latency internet can facilitate faster emergency response times, enabling better coordination with rescue teams and authorities.

9 **Remote Monitoring and Maintenance:** L.E.O can support remote monitoring of maritime equipment and systems. This capability allows for proactive maintenance, reducing downtime and optimising the performance of critical systems on board.

10 **Digitalisation of Marine Operations:** The marine industry increasingly adopts digital technologies for various operations. L.E.O can be crucial in supporting these digitalisation efforts, from electronic documentation to remote diagnostics and maintenance.

Real-World Maritime Adoption

The cruise industry are leading the way with LEO broadband services

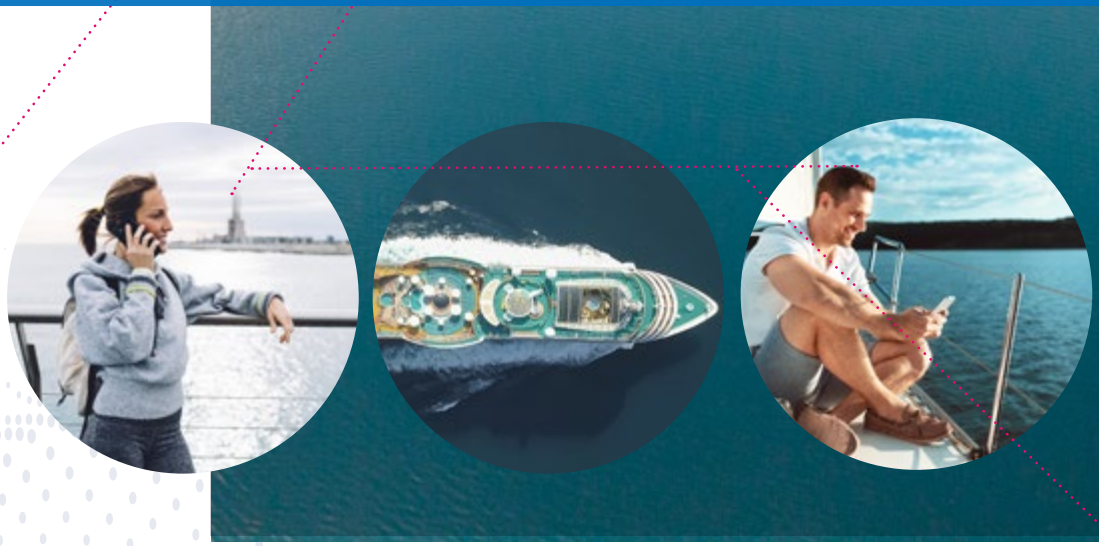


On Aug. 30, 2022, Royal Caribbean Group (NYSE: RCL) announced its plan to implement SpaceX's Starlink – making the Group the first in the cruise industry to adopt its high-speed, low-latency connectivity for a better onboard experience for guests and crew - fleetwide.

RCL completed the installation towards the end of the first quarter of 2023.

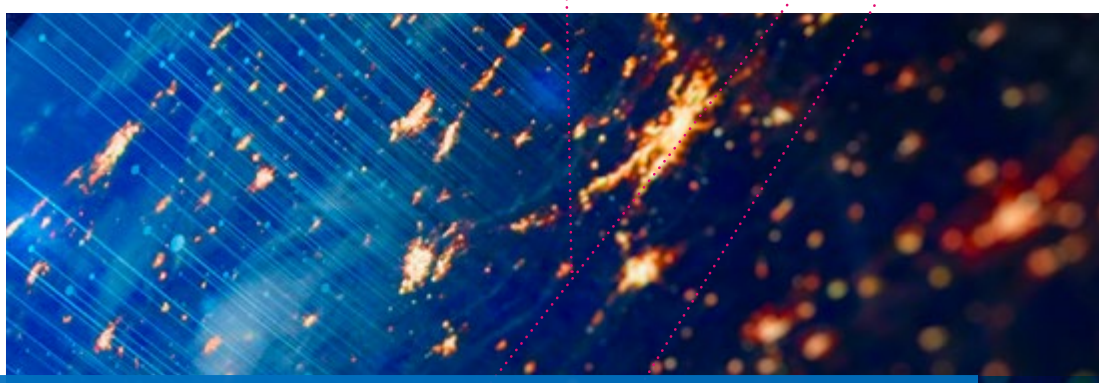
Guest and crew gained faster and more reliable internet, making it easier for guests and crew to remain connected to work, family, and friends – no matter where they were in the world.

The platform's success led Carnival, Cunard and Norwegian to announce rollouts for their fleets in 2023.



Risks & Challenges

Associated with using L.E.Os Low Earth Orbit (LEO) satellites



Redundancy & Durability

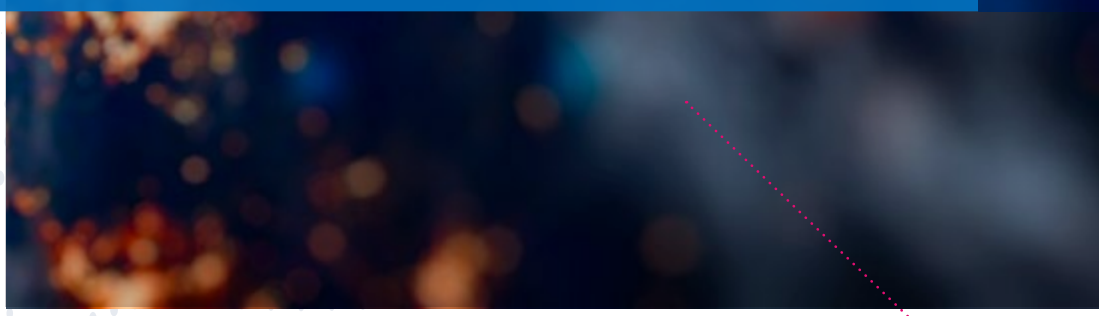
There's no backup if the service goes down due to weather or the hardware fails. Weather issues aren't solvable if there's too much attenuation. If you absolutely need 100% uptime, clients will need to go with a secondary, much slower link that operates at a lower frequency, which is attenuated less by harsh weather conditions.

The durability is difficult to measure as the antennas are still quite new. Saltwater will likely mean they will need to be replaced eventually, but being very much plug-and-play, this should be something other than a show-stopper with a more rugged flat mount version now available.

Macro Interference

There are some external risks with the Starlink service.

Both Russia and China have made public comments regarding L.E.O adoption and support in conflict zones, and the Kremlin went as far as to say, "Quasi-civilian infrastructure may become a legitimate target for retaliation". Any attack against the satellite constellation could cause a network outage or dead spots before replacement L.E.O can be launched and put in place.



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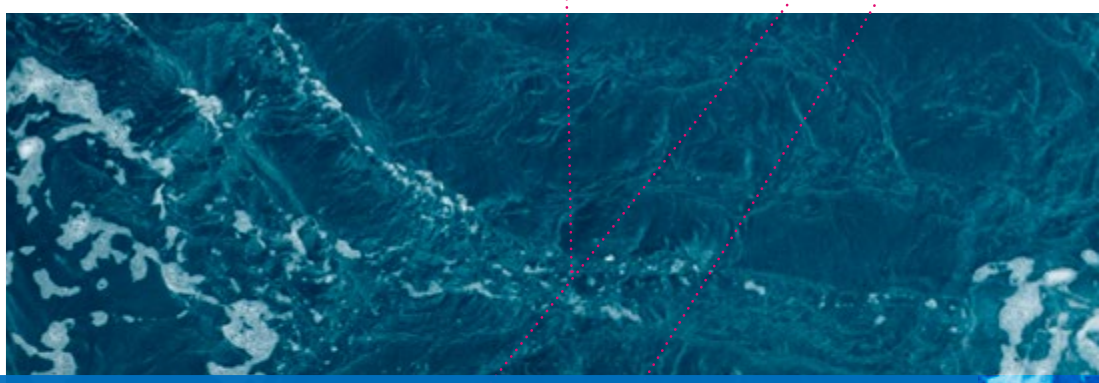

Coverage

L.E.O delivers connectivity to most of the Earth's rivers, lakes, oceans, and seas. So, for the majority of users, you'll be covered. L.E.O does need a clear view of the sky to stay connected with satellites as they pass overhead.

Competition

There are two sides to this narrative: indirect and direct competition.

L.E.O must first remove the market dependence on traditional satellite modems used with VSAT systems. This is a complex task, with the satellite modem market estimated to grow from USD 403 million in 2021 to USD 710 million by 2026; it is expected to grow at a CAGR of 12.0% from 2021 to 2026.

Clients may need a backup to L.E.O and still need to maintain an expensive VSAT platform, a proposition some clients may need more time to consider.

In terms of direct competition, Starlink has enjoyed a first-mover advantage. In their launch activities, SpaceX maintains a substantial lead over competitors.

In 2023, OneWeb, classified as a Tier 1 operator, managed only four launches, accumulating just over 600 satellites. In contrast, SpaceX conducted 52 launch missions by November 2023, deploying over 5,400 L.E.O satellites, surpassing both OneWeb and Amazon's Kuiper project.

Risks & Challenges

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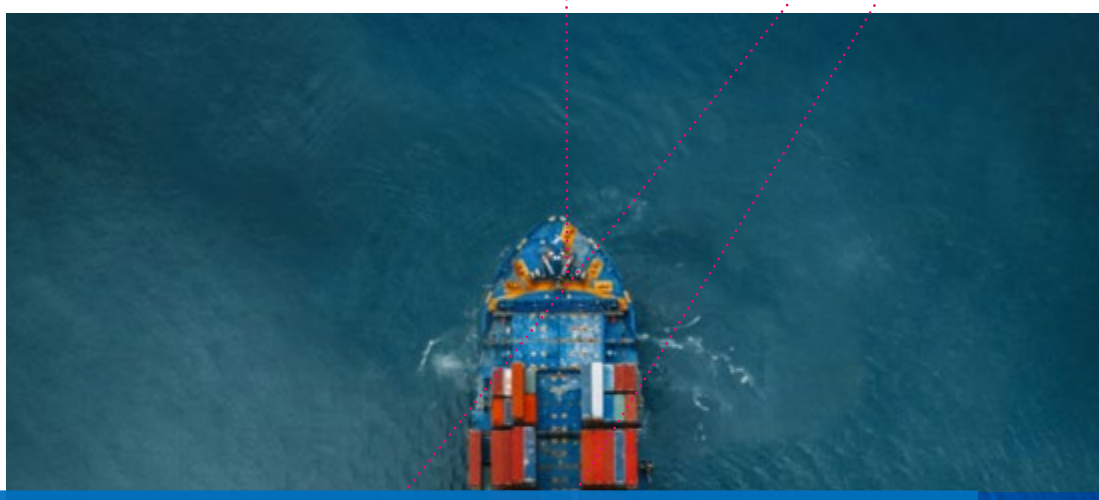
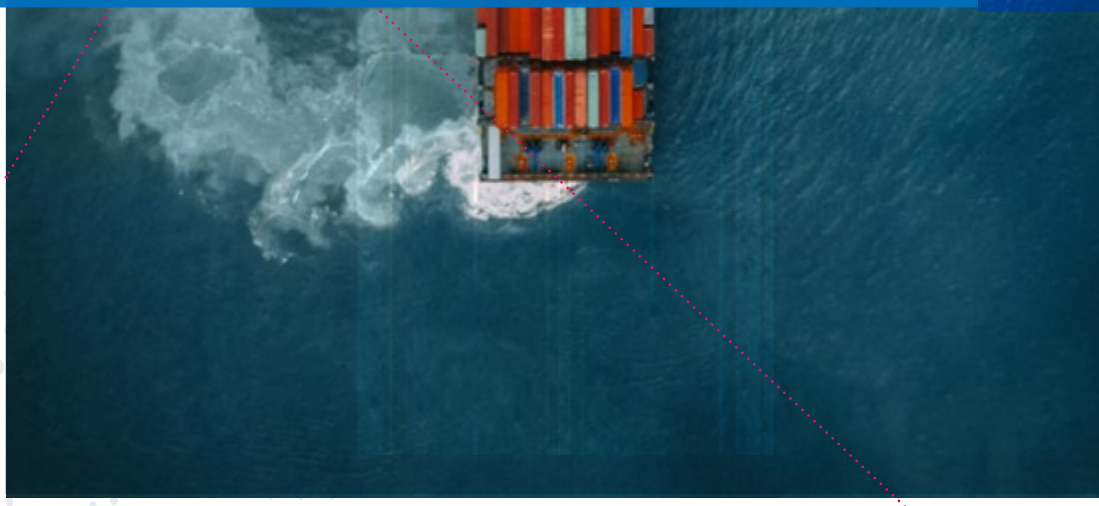


Platform Integrations

With more reliable internet, clients are able to manage fleets and assets remotely and manage all of their assets from a single portal with full end-to-end encryption.

L.E.O Maritime users can expect land-based performance, with up to 220 Mbps download speeds. Accessing software like that from Speakerbus, collaborating in real-time with colleagues across the world with seamless voice conferencing and downloading/uploading large files without the long waits associated with traditional VSAT solutions.

With a latency of just 40-100ms, L.E.O can be used as a backhaul for many Internet of Things (IoT), including security systems, sensors, robotics, wearable technology, and autonomous machinery.



How does Speakerbus intend to use L.E.O's capabilities?

Speakerbus' core values align well with L.E.O

A core value for Speakerbus is connecting disparate teams anywhere at any time, so we are entirely aligned with the mission goals of L.E.O.

Our next-gen critical voice solutions are optimised to deliver crystal audio across networks using minimal bandwidth.

Another area where we are tightly aligned is low latency.

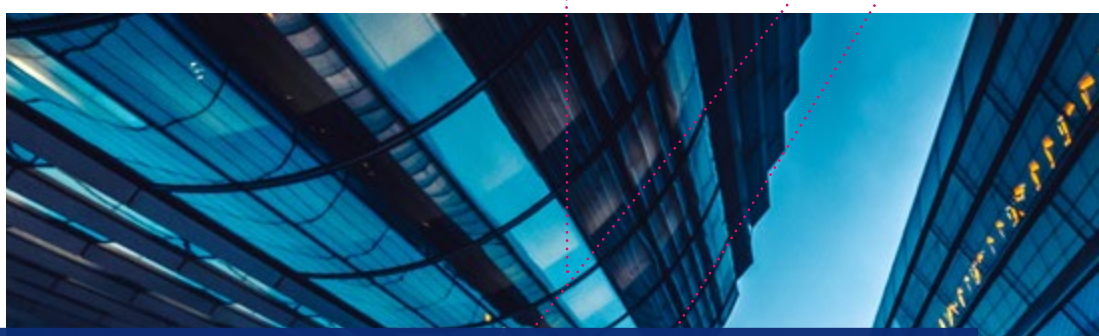
In voice networking, latency is an expression of how long a data packet takes to travel from one designated point to another. This is important in voice communications as high latency networks cause voice quality issues. Persistent high latency can slow conversations and lead to the dreaded 'talk over' effect, where one speaker unknowingly interrupts the other.

The exact network configuration may vary, but the voice and data moving over the L.E.O networks remains secure using industry-standard end-to-end encryption and VPN tunnels.

Utilising the L.E.O network, we can deliver specialist collaboration software to numerous markets, including Maritime, where reliable traditional broadband is restricted. Our software is a workspace for real-time collaboration, communication, meetings, and file and app sharing.

Moving forward into the cloud with Speakerbus and L.E.O service capabilities?

Utilise Speakerbus' Next-gen critical collaboration solutions



Speakerbus is a market leader in creating a tailored and unified cloud communications ecosystem for traders. With over thirty years of experience working with world-leading technology providers to connect teams, systems and channels while ensuring end-to-end compliance, we've helped Tier 1 financial institutions leverage cloud software and communications tools to their full potential.

Our expertise goes beyond technology. We work closely with you to understand your organisation's critical needs and match them to targeted solutions that bring your team together with complete visibility, security, and compliance.

With our comprehensive range of communications solutions designed for Financial Services, you can enjoy the same security and reliability in and out of the office, with the flexibility to meet today's demands. We proactively test and update our products to keep up with the latest regulatory requirements and empower firms to operate with confidence - wherever they are.

To learn more about how Speakerbus can empower your team and future-proof your maritime communications, book a demo of our software or get in touch with our team.

Speakerbus

Every connection is **worth more**