

JUNE 2026 · STRATEGIC MARKET ANALYSIS

GLOBAL SATELLITE CONNECTIVITY 2026: LEO, FIXED AND **REAL-WORLD QOE**

A MedUX Q1 2026 crowdsourced benchmark of satellite, fixed and mobile broadband — market dynamics, the LEO shift, where satellite already rivals fixed, and the road to unified connectivity.

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THE SATELLITE BROADBAND INFLECTION POINT

Satellite broadband is no longer just a backup option.

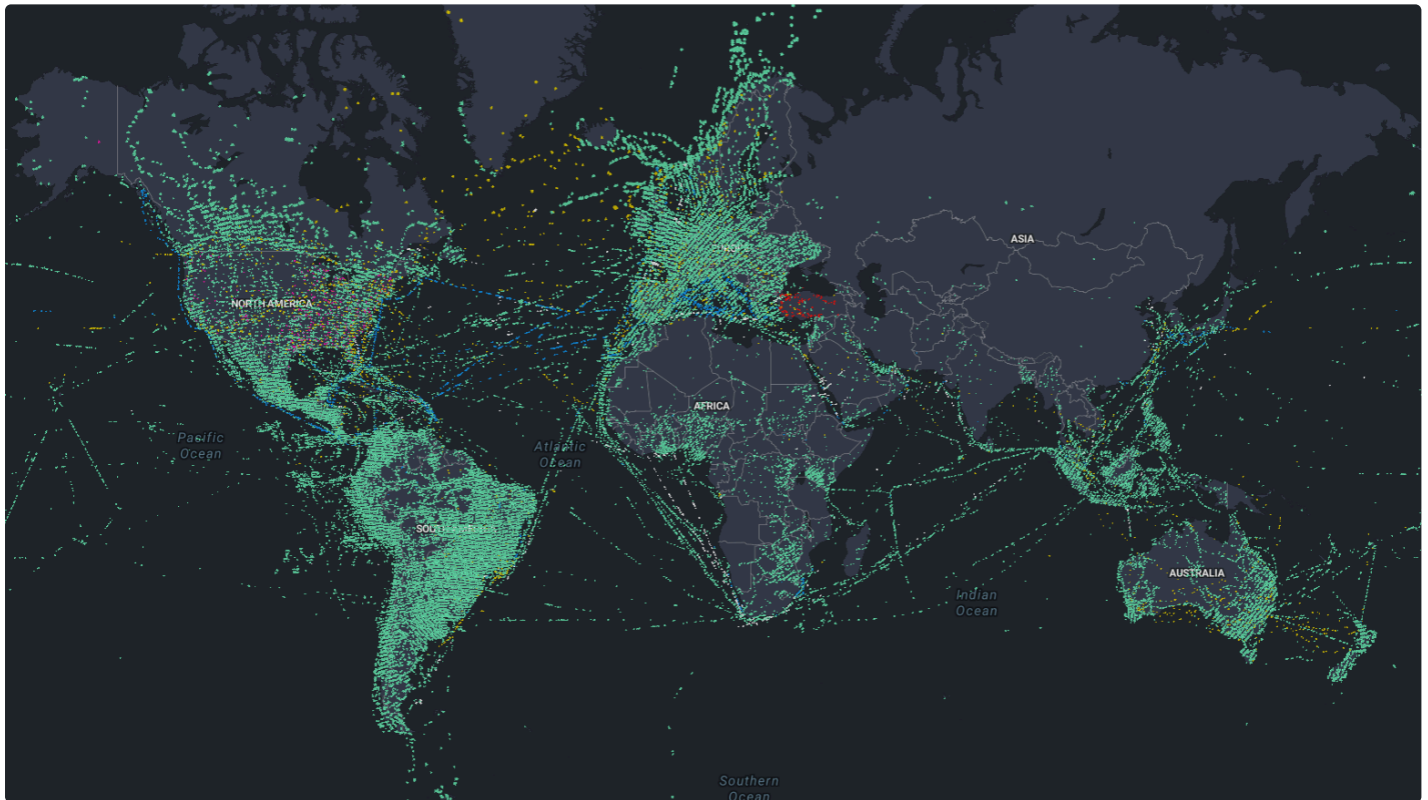
For years, satellite connectivity was mostly associated with remote access, emergency communications, maritime operations, government services and areas beyond the reach of terrestrial infrastructure. Traditional GEO satellite broadband provided wide coverage, but its high latency limited the quality of interactive digital experiences.

That is changing with Low Earth Orbit satellite broadband. LEO constellations operate much closer to Earth than geostationary satellites, reducing latency and making services such as web browsing, video streaming, cloud applications and video calls more viable from the user perspective.

THE MARKET QUESTION HAS EVOLVED

Can LEO satellite broadband deliver an experience close to **fixed broadband**?

It is no longer only “can satellite connect remote users?” Most users do not experience satellite as “space connectivity” — they experience it through a router, a Wi-Fi network, a video call, a streaming app or a browser. The real competitive battlefield is Quality of Experience.



MedUX Q1 2026 crowdsourcing footprint of satellite broadband connections — global view.

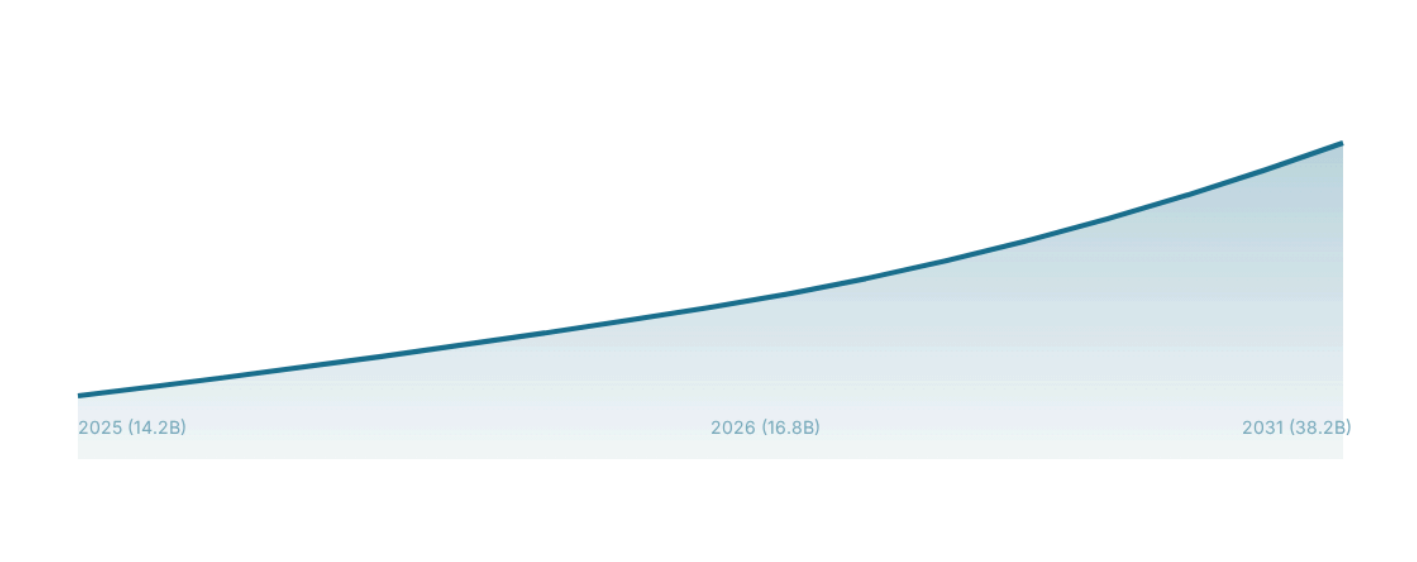
MARKET DYNAMICS, GROWTH & GEOGRAPHIC FOOTPRINT

LEO providers have disrupted the residential market share of traditional GEO players, with **+117% growth versus 2024**. Starlink is positioned as the absolute leader, with **85% of its users located in rural areas** (US). The result is a satellite broadband market that is both expanding fast and concentrating around the LEO model.

OPERATIONAL DOMINANCE: STARLINK

FLEET SIZE 10,000+ Active satellites in LEO	SUBSCRIBERS 10M+ Active users by Feb 2026	CAPACITY 600+ Tbps aggregate network capacity
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MARKET SIZE GROWTH PROJECTION



Satellite connectivity market size (USD Bn): 14.2B (2025) → 16.8B (2026) → 38.2B (2031).

The market is expected to grow at a realistic **17.85% CAGR**, driven by residential and corporate adoption, with acceleration powered by Direct-to-Device adoption and enterprise fleet connectivity.

GEOGRAPHIC ADOPTION & REVENUE SHARE



Global revenue share by region (Q1 2026).

▶ **North America:** absolute revenue leader, powered by Starlink.

▶ **Asia-Pacific:** fastest-growing region (18.5% projected CAGR), led by China and India.

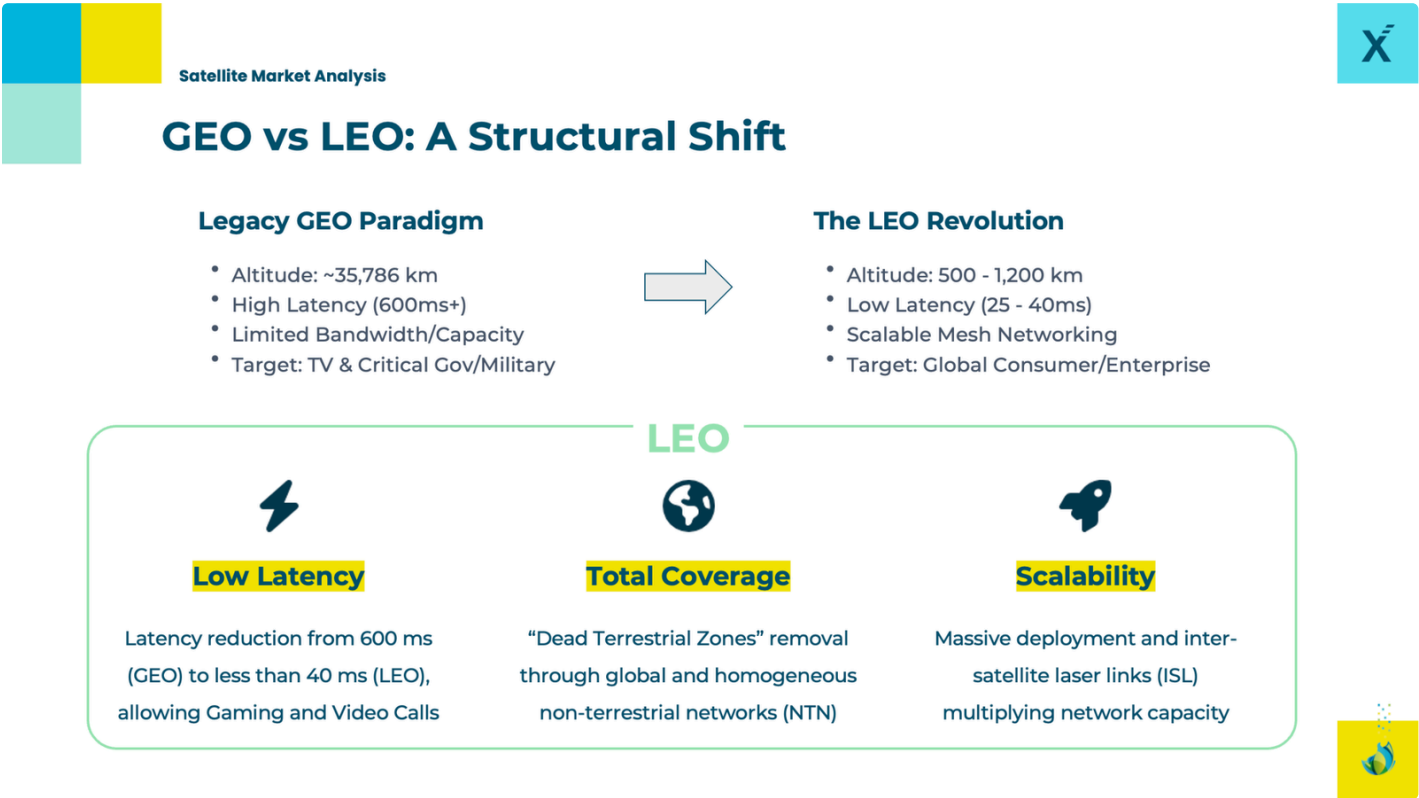
▶ **Europe & Latam:** massive adoption where fiber infrastructure is poor.

▶ **Rest of World:** 10.4% — emerging long-tail of underserved markets.

GEO VS LEO SATELLITE BROADBAND: WHY THE TECHNOLOGY SHIFT MATTERS

The transition from GEO to LEO is one of the most important changes in satellite broadband. GEO satellites are positioned much farther from Earth and have historically delivered broad coverage but high latency — useful for coverage and continuity, but less suitable for latency-sensitive services.

LEO satellites, by contrast, operate closer to Earth. This reduces round-trip time and improves the feasibility of more interactive broadband experiences, including video calls, streaming, web browsing and cloud-based applications.



WHAT MEDUX MEASURED

For this analysis, MedUX used Q1 2026 crowdsourcing data from smartphones connected via Wi-Fi to satellite broadband networks. Since 2014, MedUX has measured networks and services from the customer perspective — and the footprint behind this benchmark keeps growing.

ACTIVE TESTING

20,500+

Robots / active testing devices worldwide

REACH

500M+

People covered by MedUX deployments

CROWDSOURCING

60M+

SDK agents & apps collecting insights

Billions of samples are analyzed in real time, without integration and 100% operated by MedUX. The right question for this dataset is:

THE BENCHMARK QUESTION

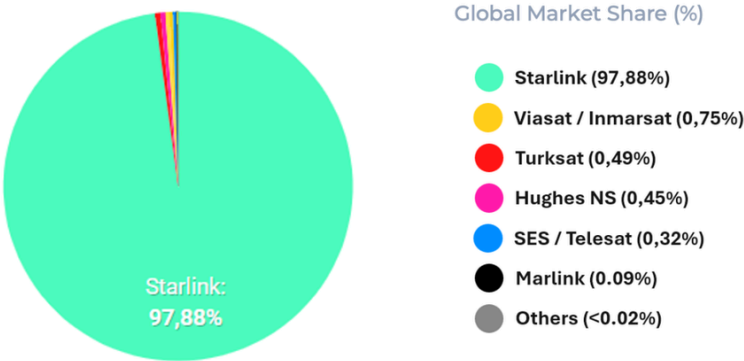
How close is LEO satellite to the fixed broadband experience users expect at home?

... at home, at work or in underserved locations.

Strategic Market Analysis

X

Global Market Concentration (Q1 2026*)



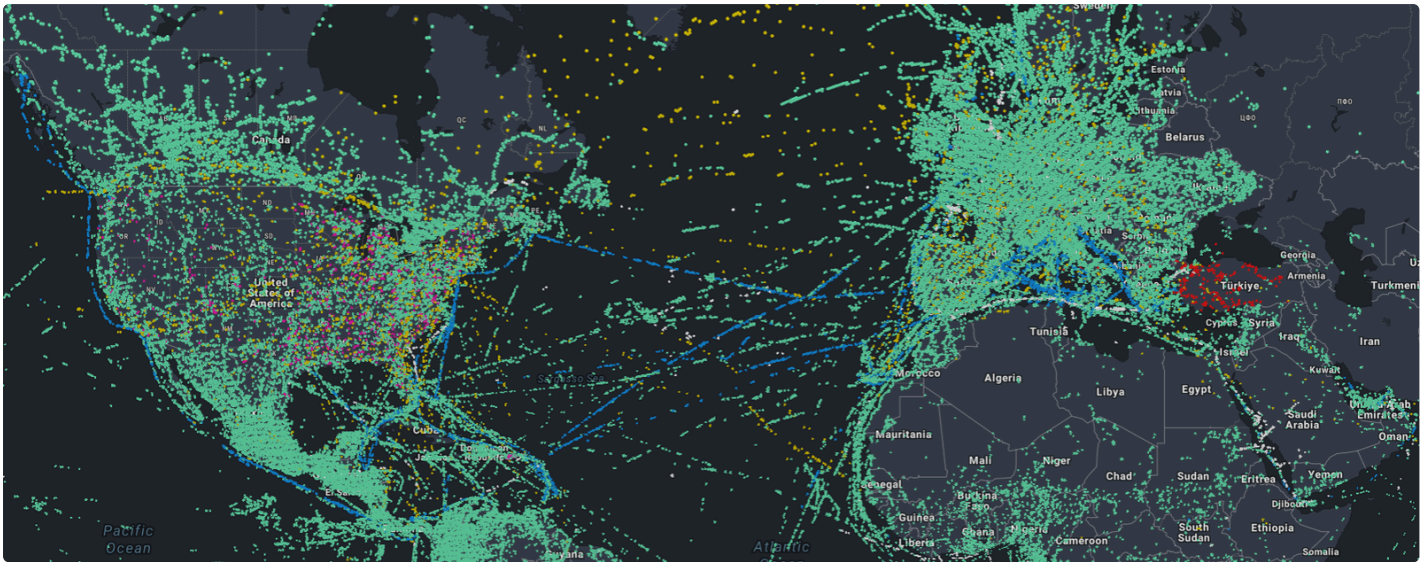
- LEO providers have disrupted the residential market share of traditional GEO players (+117% growth vs 2024).
- Starlink is positioned as the absolute leader, with 85% of its users located in rural areas (US).

*Statistics from global traffic samples and executed tests on Q1 2026 - MedUX Crowdsourcing Solution

Global market concentration (Q1 2026) — the satellite sample is strongly shaped by the LEO market structure.

The satellite sample is highly concentrated around the current LEO market structure: it includes **Starlink (98%)** plus Viasat, Turksat, Hughes, SES and Marlink (2%), and is measured from Wi-Fi connections. Results should therefore be read primarily as a **LEO-led satellite broadband benchmark**, not as a fully balanced comparison across all satellite technologies or providers.

SATELLITE CONNECTIONS FOOTPRINT – REGIONAL DETAIL



Q1 2026 satellite connection density – Americas, Europe & Africa.



Q1 2026 satellite connection density – Asia-Pacific & Oceania.

SATELLITE BROADBAND IS CLOSING THE FIXED BROADBAND EXPERIENCE GAP

The most relevant finding from MedUX's Q1 2026 analysis is that satellite broadband is already delivering a user experience that comes close to fixed broadband for everyday digital activities.

SATELLITE

3.5s

Web / App loading time

SATELLITE

2.5s

Video start time

SATELLITE

25.4%

Sessions in 4K resolution

Technology	Web/App Loading (s)	DNS (ms)	Video Start (s)	4K Resolution (%)
Satellite	3.5 s	177,0 ms	2.5 s	25,4 %
Fixed Broadband	3.2 s	141,5 ms	2.2 s	31,7 %

Satellite broadband network QoE metrics compared with fixed broadband performance.

These results show that satellite broadband can support common digital use cases such as browsing, video streaming and everyday application usage with a level of experience increasingly close to fixed broadband. That does not mean satellite has caught up in every dimension – but the experience gap is narrowing.

FIXED BROADBAND STILL LEADS IN THROUGHPUT AND LATENCY

Satellite broadband is improving quickly, but fixed broadband still has structural advantages. MedUX data shows that fixed broadband outperforms satellite in average download (**112.2 vs 86.4 Mbps**), upload (**46.0 vs 18.3 Mbps**) and latency (**28.4 vs 46.5 ms**):

Technology	Download (Avg)	Upload (Avg)	Latency (RTT Avg)	Stability/Load
Satellite	86.4 Mbps	18.3 Mbps	46.5 ms	High Stability
Fixed Broadband	112.2 Mbps	46.0 Mbps	28.4 ms	High Stability/Reliability

Satellite broadband network QoS metrics compared with fixed broadband performance.

The biggest gap is **upload performance**, where fixed broadband remains clearly ahead. Latency is also lower on fixed broadband, which matters for gaming, real-time collaboration, enterprise applications and cloud-based services.

The conclusion is not that satellite replaces fixed broadband. It is that **LEO satellite is becoming a serious broadband layer** where traditional fixed infrastructure is unavailable, inconsistent, expensive to deploy or struggles to scale.

WHAT ABOUT MOBILE BROADBAND?

Mobile broadband remains relevant, but it should be treated carefully. A smartphone connected via Wi-Fi to a satellite broadband router is not the same as a smartphone connected directly to a 4G or 5G mobile network. The access architecture, radio conditions, mobility model and service expectations are different — so mobile is **context, not a like-for-like access benchmark**.

SATELLITE 86.4 Mbps download · beats standard 5G NSA & 4G	MOBILE 5G SA 172.8 Mbps download · advanced-5G ceiling	MOBILE 4G LTE 34.0 Mbps download · satellite is 2.5× faster
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Technology	Download (Avg)	Upload (Avg)	Latency (RTT Avg)	Stability/Load
Satellite	86.4 Mbps	18.3 Mbps	46.5 ms	High Stability
Mobile 5G SA	172.8 Mbps	14.1 Mbps	27.4 ms	Variable (Load Sensitive)
Mobile 5G NSA	69.8 Mbps	14.5 Mbps	30.6 ms	Variable (Load Sensitive)
Mobile 4G LTE	34.0 Mbps	11.6 Mbps	49.8 ms	Moderate

Network performance metrics (Q1 2026) — satellite vs mobile broadband.

Read in context, the picture is clear:

- 1

Satellite beats 4G and standard 5G

Satellite performs noticeably better than 4G and edges out standard 5G NSA, especially in rural areas and over FWA — a highly solid alternative where cellular coverage is poor.
- 2

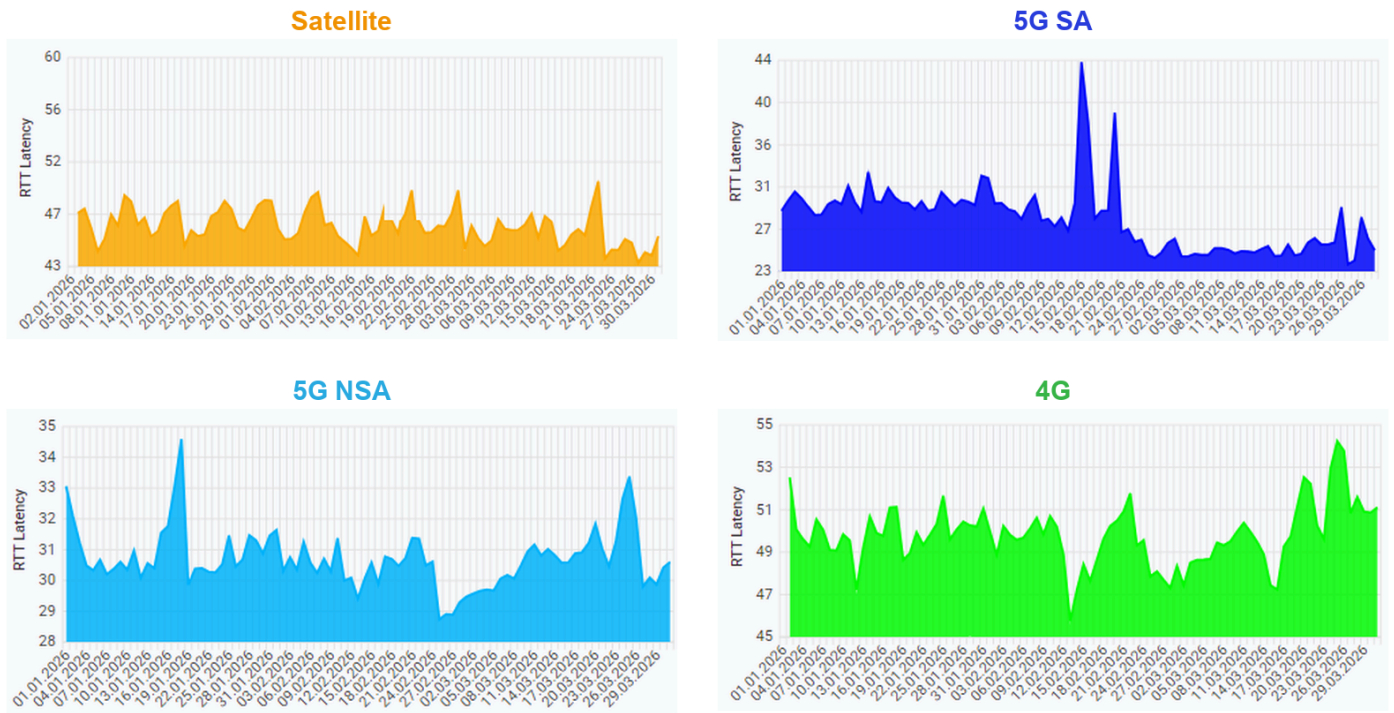
It even wins on 4G response time

At 46.5 ms RTT, satellite manages to edge out 4G LTE (49.8 ms), even if advanced 5G networks remain snappier.
- 3

Advanced 5G still leads

5G SA sits a step ahead on raw download and responsiveness — but with variable, load-sensitive stability that satellite does not suffer.

LATENCY STABILITY: SATELLITE VS MOBILE (RTT, Q1 2026)



RTT trend across Q1 2026 by technology. Satellite (orange) holds a predictable band around its ~46.5 ms mean, while mobile networks — especially 5G SA and 5G NSA — show sharp load-driven spikes.

This is the real point of the comparison. Satellite does not have the lowest absolute latency — it averages ~46.5 ms, above 5G — but it stays within a predictable band. Mobile networks post lower averages, yet 5G SA and 5G NSA spike sharply under load and 4G runs persistently high (~50 ms): the “Variable / load-sensitive” behaviour flagged in the QoS table, versus satellite’s “High Stability”. For latency-sensitive use such as video calls, cloud apps and gaming, that consistency can matter as much as a lower headline figure.

THE CLEAR MESSAGE

Satellite is not replacing mobile. It is a **complementary connectivity layer**.

Satellite is relevant where mobile coverage is poor, congested or unavailable, and acts as a resilience layer for enterprises, emergency services, rural users and remote operations.

DIRECT-TO-DEVICE AND NTN: THE NEXT BENCHMARK FRONTIER

The comparison between satellite and mobile will become more direct as satellite-to-mobile services mature. Direct-to-Device connectivity aims to let standard smartphones connect directly to LEO satellite nodes without specialized hardware. At the same time, 5G NTN integration is opening the door to non-terrestrial networks becoming part of a more unified architecture with terrestrial mobile infrastructure.



This creates a new measurement challenge. When users move across fiber, Wi-Fi, FWA, 4G, 5G and satellite layers, quality can no longer be assessed only through isolated network KPIs or technology labels. Operators, regulators and enterprises will need a technology-agnostic way to understand how connectivity performs from the user perspective.

That is the space where **QoE becomes the common language**. D2D and 5G NTN will make satellite-to-mobile benchmarking increasingly relevant — but this is a different use case from today's satellite broadband over Wi-Fi.

WHY QOE MATTERS FOR SATELLITE BROADBAND

Coverage maps are not enough. Speed tests alone are not enough. Technology labels are not enough. A meaningful broadband benchmark must answer practical questions:

- ▶ Can users browse smoothly?
- ▶ Can video start quickly and hold high resolution?
- ▶ Can cloud applications remain stable?
- ▶ Can real-time services perform reliably?
- ▶ Does performance degrade during peak hours?
- ▶ How much is shaped by access, Wi-Fi, congestion or routing?

This is where MedUX provides a unique perspective. MedUX measures network and service performance from the customer perspective — combining active testing devices, crowdsourcing, Apps & SDK, advanced analytics and QoE scorecards to help operators, regulators and enterprises understand how networks actually perform in the real world.

THE FUTURE OF BROADBAND

It will not be defined by one winning access technology.

It will be defined by how fiber, FWA, mobile, Wi-Fi and satellite work together to deliver reliable, inclusive and high-quality digital experiences.

THE ERA OF UNIFIED CONNECTIVITY

By 2027, the distinction between “mobile” and “satellite” will effectively vanish for the end-user. LEO constellations will provide a persistent, high-speed backup layer for terrestrial fiber and 5G networks, ensuring near-100% uptime for global enterprise operations.

1 Backup layer

LEO satellite is immune to terrestrial disasters, providing permanent critical connectivity when fiber and cellular fail.

2 Seamless connectivity

LEO provides exceptional stability for corporate and gaming environments — a drastic reduction in variability versus legacy GEO.

3 Convergence

Total convergence between space and terrestrial networks to eliminate global dead zones.

WHY STABILITY MATTERS

Terrestrial 5G can fluctuate up to **400 ms+ under load.**

LEO satellite delivers a more consistent experience for latency-sensitive corporate and gaming use cases — the kind of reliability that raw peak-speed figures do not capture.

The future will not be defined by one winning access technology. It will be defined by how fiber, FWA, mobile, Wi-Fi and satellite **work together** — and by the ability to measure the resulting experience in a single, technology-agnostic language: QoE.

FREQUENTLY ASKED QUESTIONS

WHAT IS THE DIFFERENCE BETWEEN GEO AND LEO SATELLITE BROADBAND?

GEO satellite broadband uses satellites positioned much farther from Earth, which enables wide coverage but typically introduces higher latency. LEO satellite broadband uses satellites closer to Earth, reducing latency and making interactive broadband services such as video calls, streaming and cloud applications more viable.

IS SATELLITE BROADBAND BETTER THAN FIXED BROADBAND?

Not generally. MedUX Q1 2026 data shows that satellite broadband is approaching fixed broadband for everyday web and video experience, but fixed broadband still leads in download speed, upload speed and latency. Satellite is strongest where fixed broadband is unavailable, inconsistent or costly to deploy.

DOES THIS ANALYSIS MEASURE DIRECT-TO-DEVICE SATELLITE CONNECTIVITY?

No. This analysis is based on smartphones connected via Wi-Fi to networks identified as satellite internet providers. Direct-to-Device satellite connectivity is a different use case and will require a dedicated mobile-satellite benchmark as the technology matures.

WHY IS QOE IMPORTANT FOR SATELLITE BROADBAND?

QoE shows whether the connection supports real user needs such as browsing, streaming, video calls, cloud applications and real-time services. Speed alone does not explain the full user experience, especially when Wi-Fi, latency, routing, congestion and service behavior also affect performance.

ABOUT MEDUX

MedUX is a global leader in Quality of Experience testing and monitoring, helping telecom operators, regulators, governments and digital enterprises understand how users actually experience fixed, mobile, satellite and Wi-Fi networks.

Through a multi-platform measurement ecosystem — including mobile and fixed probes, apps, SDKs, crowdsourcing and advanced analytics — MedUX provides end-to-end visibility into network and service performance, supporting benchmarking, optimization, regulatory compliance and customer experience improvement across markets worldwide.