EUTELSAT

LEO for the rail ecosystem

7 10 2026 | S5LECT Event

ONEWEB
LEO CONSTELLATION



Shaping the future for satellite network communications

A PIONEER IN SPACE

Operations in every continent
+6,400 TV channel customers
Connectivity for Land, Sea and Air

+40
years of experience

SHAPING THE FUTURE

Enhanced coverage, flexibility, resilience and security
Innovations in products, hardware

Global roll-out
of LEO network

TECHNOLOGY ROADMAP

World-leading expertise in satellite communications network technology and hardware, building more strategic autonomy for data services

GEN1R
GEN1E
NEXTGEN
Iris2

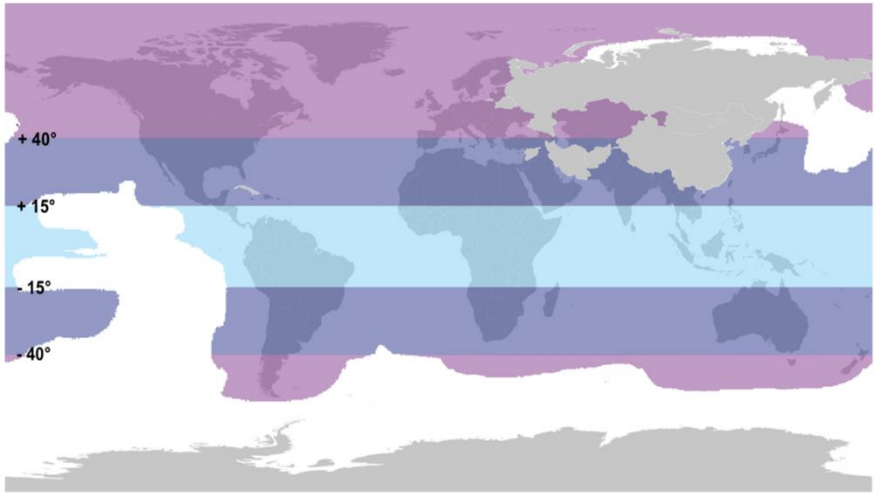
Shaping satellite solutions for a better connected future



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CONFIDENTIAL DATA

Regional availability performance

Regional Availability Performance is well reflected in the 3 latitudinal tiers:



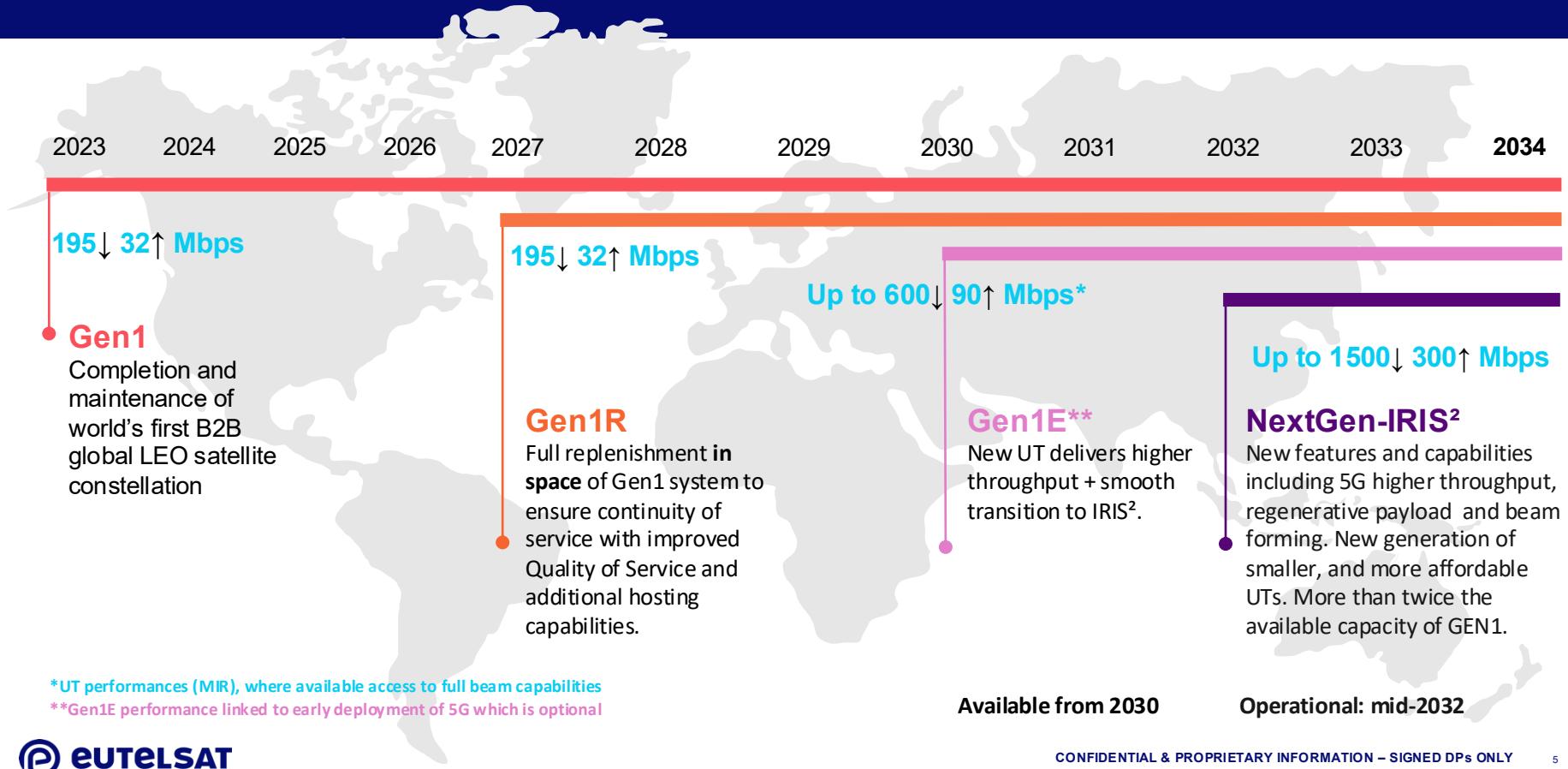
- **Zone 1**: Performance are expected to remain stable over time with average service availability above or equal to **99.5%**. The number of predictable outages during typical 24 hours is also expected to remain stable.

- **Zone 2:** Average availability target of **99%** overall. Service performance are expected to improve at the end of 2027 following the initial Gen1R launches and further consolidation of service is expected year on year with a material reduction of the predictable short service disconnections between 6s and 20s.

- **Zone 3:** Average availability target of 98%. Performance will be maintained throughout 2026 and 2027 and are expected to improve at the end of 2027. Service availability will continue to improve year on year with values in this region expected to exceed 98.5% at the end of the Gen1R launch campaign. Short service disconnections between 6s and 20s are also expected to drop drastically over time.

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LEO network roadmap - timeline and benefits



*UT performances (MIR), where available access to full beam capabilities

**Gen1E performance linked to early deployment of 5G which is optional

Available from 2030 **Operational: mid-2032**

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IRIS² is a European multi-orbit constellation

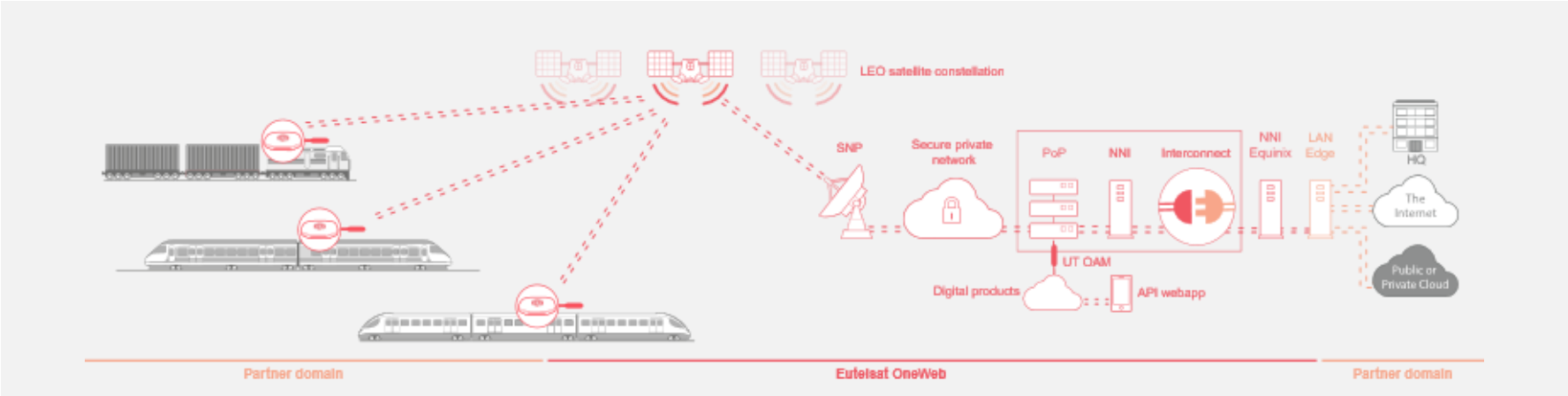


- 282 satellites combining LEO (264 sat) and MEO (18 sat) to provide secure connectivity services to the EU and its MS as well as commercial broadband connectivity
- Designed, manufactured and launched by European companies
- Owned by EU Commission
- Operated by commercial satellites network operators and complemented by commercial infrastructure
- Entry into service scheduled for 2030
- Multi-band constellation (Ku – Ka – Ka mil band)
- >3.5 Tbps of capacity of which ~1.8 Tbps in LEO
- > €10.6 bn of investment of which over €6 bn from EUC and ESA

Key Propositions

Onboard	Infrastructure	Maintenance	Remote Station	Rail yards & depots
				
Operational (Driver control, telematics, onboard systems passenger connectivity (wifi)	Infrastructure including Remote crossings, signalling, trackside monitoring	Maintenance teams, surveying, construction and repair	CCTV and security, ticketing, General station operations and passenger Wifi	CCTV and security for rolling stock, storage and goods held on site

Mobility solutions for onboard connectivity



- Applications of use

- Operational connectivity (Critical systems including; driver communications, Train control, braking & pre-emptive maintenance vs: non-critical; buffet car, PoS, passenger yield and lavatories)
- Passenger wifi (prioritised service by train class, metered service and app restrictions)

Technical & commercial

- UTs meeting EN 50121, 50155 & 45545 standards as a minimum (Shock, vibration, hazard, etc…)
- Support speeds of 340 kph
- Cellular with satellite failover primarily in support of passenger connectivity
- Commercial packages scaled to support multiple antennas on a single train, and large pools
- Pricing compatible with cellular roaming

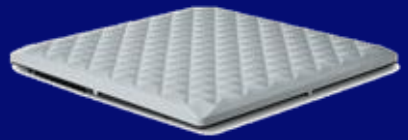
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Land Mobility UTs

Flat Panels – Beam Steering Without Moving Parts

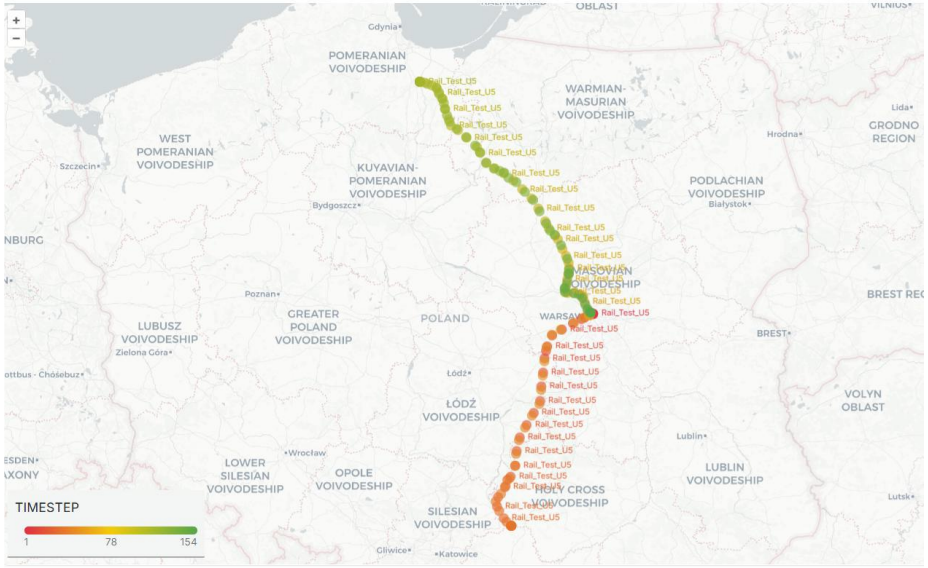
- Eutelsat's range of flat panel terminals use phased array technology to electronically steer the antenna beam; this eliminates the need for mechanical tracking.
- Design and functionality make these terminals more resistant to harsh environmental conditions, vibrations, and wear over time especially in environments where physical movement is problematic.
- Terminals have a compact and low-profile design, being slim and unobtrusive compared to parabolic dishes. This makes them ideal for applications where space is limited or aesthetics matter, such as on rooftops, vehicles, or aircraft.





PKP Intercity Express rail PoC

UT Positioning - From UTSS



KPI Dashboard

Result Area	Measured Result	Status
Availability	>98–99%	Green
Average latency	117.5 ms	Green
Average download throughput	96.48 Mbps	Green
Average upload throughput	12.64 Mbps	Green
Best download throughput	101.39 Mbps	Green
Overall outcome	Successful	Green

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Operational characteristics

Regulatory Compliance & Sovereignty

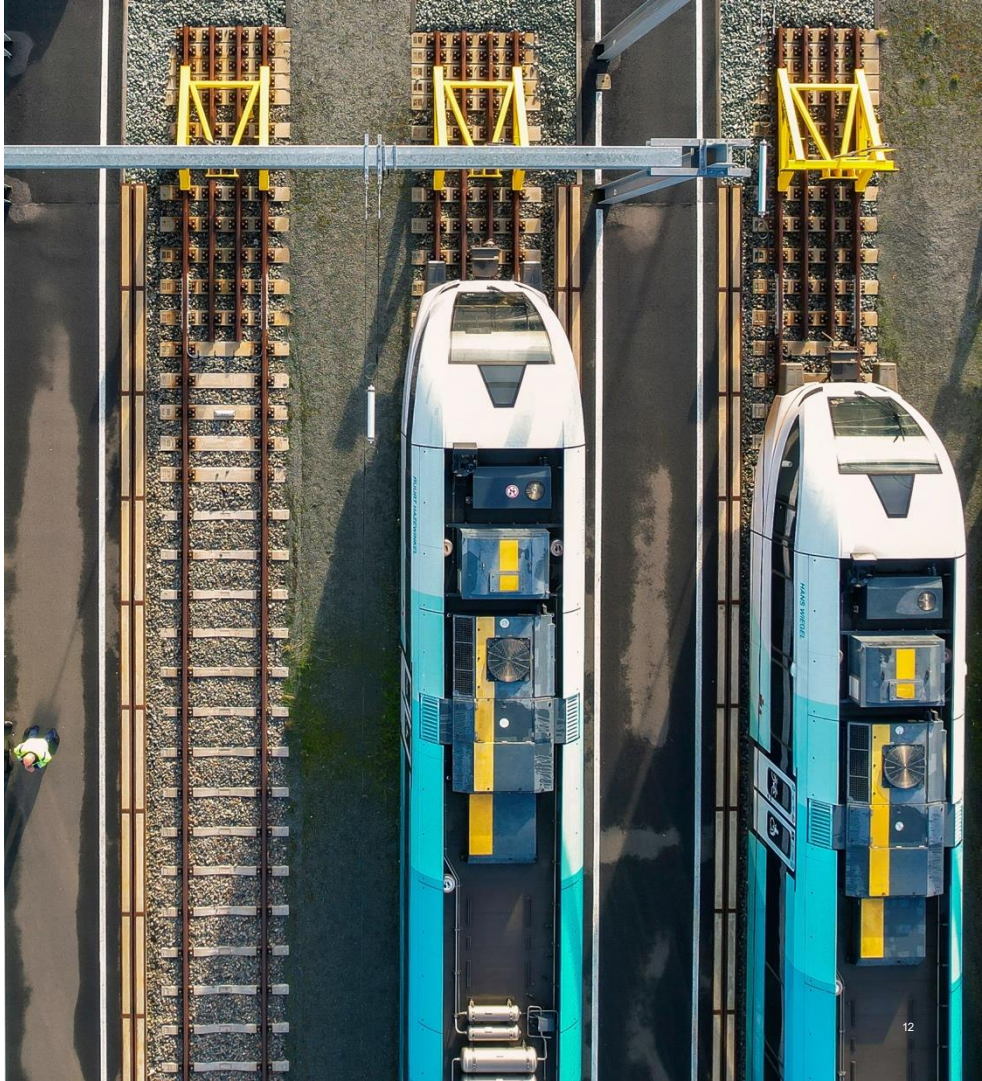
Operating across multiple countries requires adherence to international regulations, including spectrum allocation and licensing. OneWeb collaborates closely with regulatory bodies to ensure compliance.

Data Sovereignty

As a European-based company (with significant operations in the UK and partnerships across Europe), Eutelsat is better positioned to comply with European data sovereignty laws, such as the **General Data Protection Regulation (GDPR)**. This is especially important for;

- Governments
- Enterprises with strict data residency requirements
- Critical infrastructure providers

Data landing and storage can be localized within Europe, ensuring compliance with European standards





Operational characteristics

SLA performance commitments

Link Availability

OneWeb commits a minimum monthly average Link Availability of 99.5%. This measures the percentage of time a full or half duplex communication link between the terminal and the OneWeb landing Point-of-Presence (PoP) is operational

Latency

OneWeb targets a one way latency of ≤ 70 ms, globally, measured between the terminal and the landing PoP. That equates to around < 140 ms round-trip latency

Packet Delivery / Loss Rate

The SLA includes a minimum delivered packet-success rate of 99%, meaning packet delivery loss (both forward and return paths) must be ≤ 1% per month, based on standardized IETF traffic profiles


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