

Optimising the Role of Non-Terrestrial Networks (NTNs) in Critical Communications

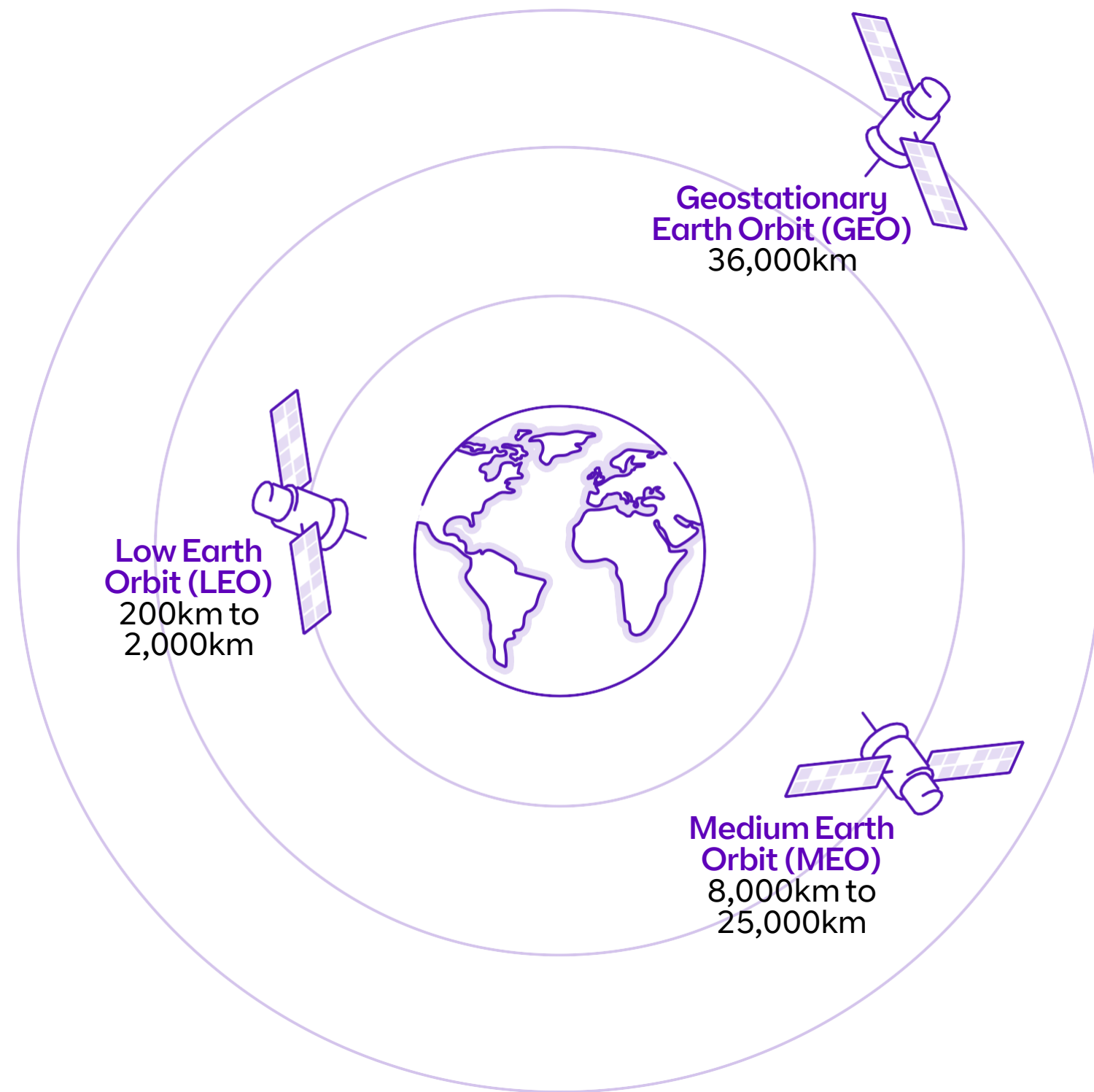
Julian Divett
Network Design Specialist

25th March 2026

Contents

Satellite backhaul strategy
Network performance
Network architecture
Deployment scenarios
Direct-to-Device (NTN)
Summary

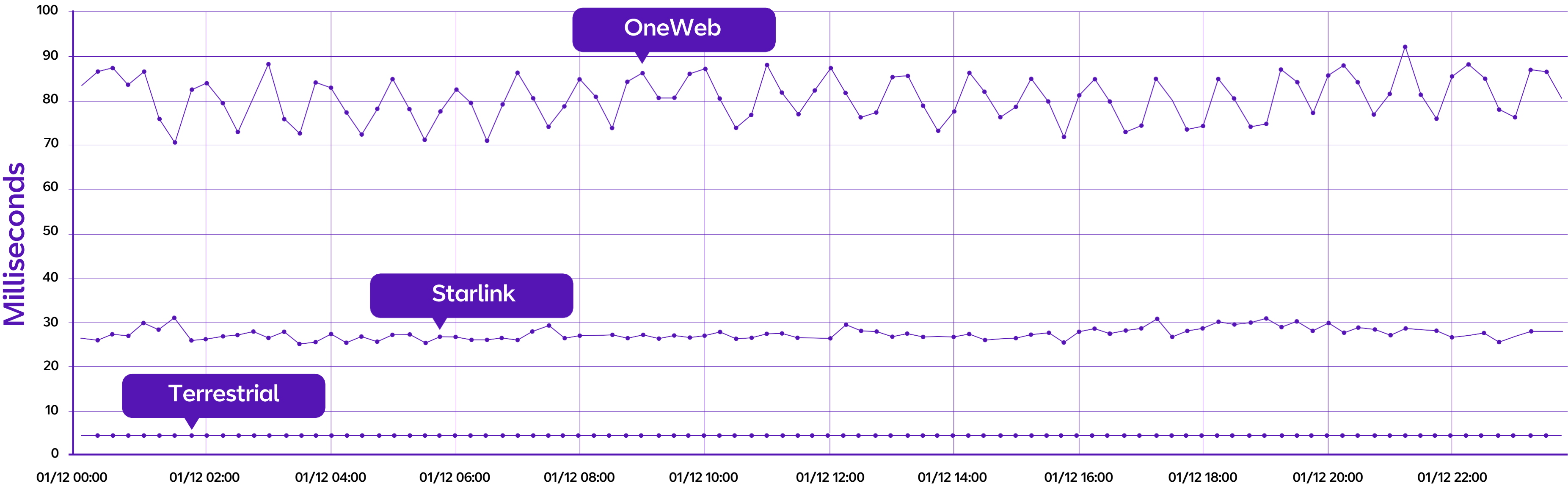
A strategic shift from Geostationary Earth Orbit satellites to Low Earth Orbit mega-constellations



Network performance

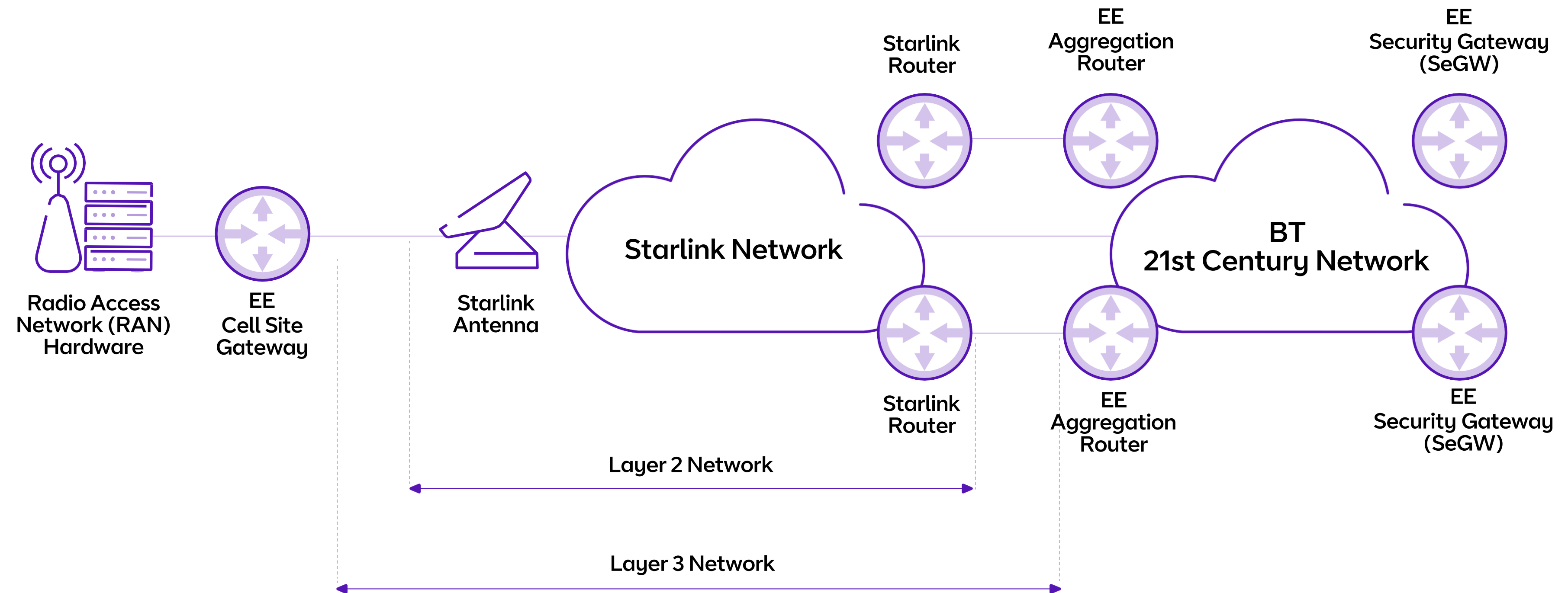
Baseband stats (round trip time)

Geostationary Earth Orbit 550



✓ Series	MIN	MAX	AVG
✓ Node_Name-73717-TWAMP-1-MRBTS-23096-avgRTT (Microseconds)	25219	31048	27529.44
✓ Node_Name-79704-TWAMP-1-MRBTS-23874-avgRTT (Microseconds)	70603	92131	80620.77
✓ Node_Name-92475-TWAMP-1-MRBTS-20924-avgRTT (Microseconds)	4608	4615	4611.53

Network architecture



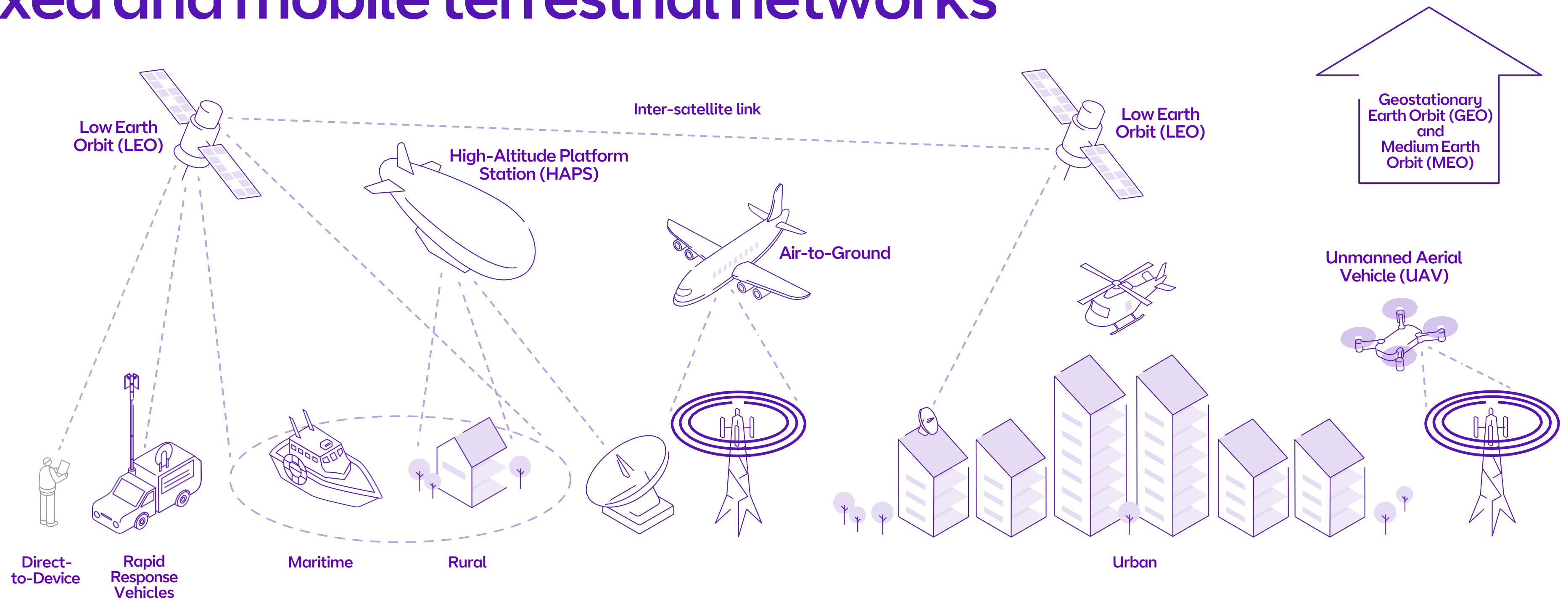
Eutelsat OneWeb





SpaceX Starlink

Future space and airborne communications - augmenting fixed and mobile terrestrial networks



The increasing commercialisation of space is presenting ever more connectivity solutions, including new LEO mega-constellations, High Altitude Platform Systems (HAPS) and drones – air to ground networks are becoming increasingly common too.

Summary...



1.

Terrestrial connectivity to cell sites for mobile backhaul **is always the preferred option**

2.

The use of GEO satellites for mobile backhaul has **proven the use case for satellite** in several key deployment scenarios

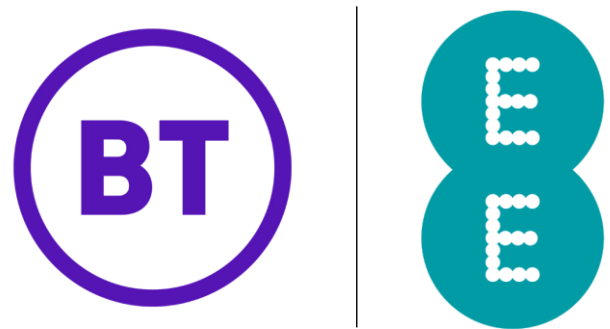
3.

LEO technology has enabled **a step change in user experience** for cell sites connected by satellite

4.

LEO technology is being exploited in a way to **maximise user benefit now**

Thank you!



Offices Worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract.

© British Telecommunications plc 2026. Registered office: 1 Braham Street, London, E1 8EE.
Registered in England No. 1800000.

March 2026