

amazon | project kuiper

Presentation to USTTI scholars

September 8, 2023





Our Mission

Project Kuiper is an initiative to increase global broadband access through a constellation of satellites in low Earth orbit (LEO). Our mission is to deliver fast, affordable broadband to unserved and underserved communities around the world.

Bridging the Digital Divide

1 billion

Unserved households across the globe have no fixed broadband today (50% of the global total).

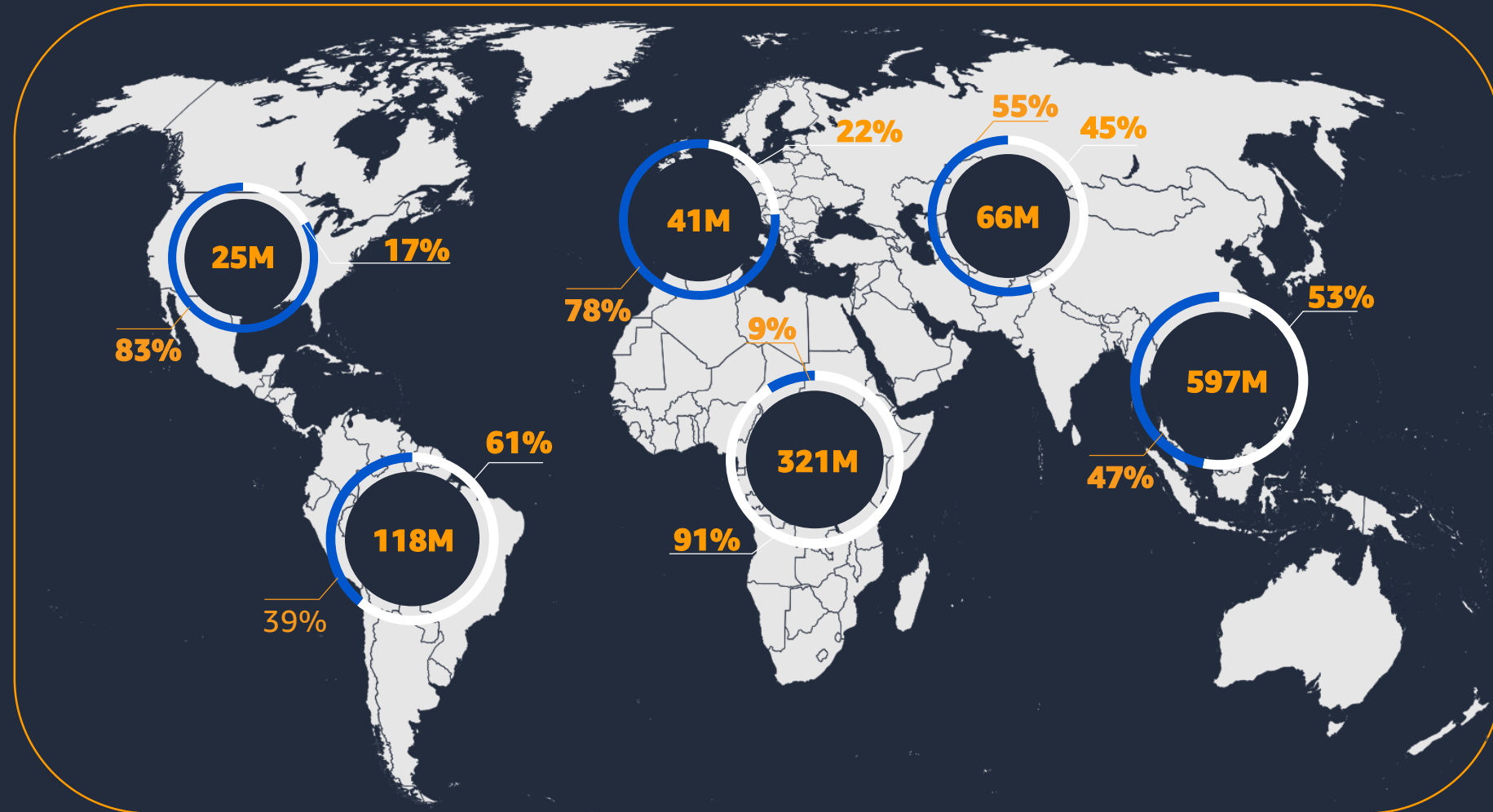
300 million

Underserved households are on legacy DSL technologies.

100 million

Business, enterprise, and public sector endpoints lack reliable connectivity.

[Source: S&P Market Intelligence](#)



○ Number of unserved households per region

— Percentage of served fixed-broadband households (DSL, cable, fiber)

— Percentage of unserved households within the region

Low, Medium and Geostationary Earth Orbits

LEO

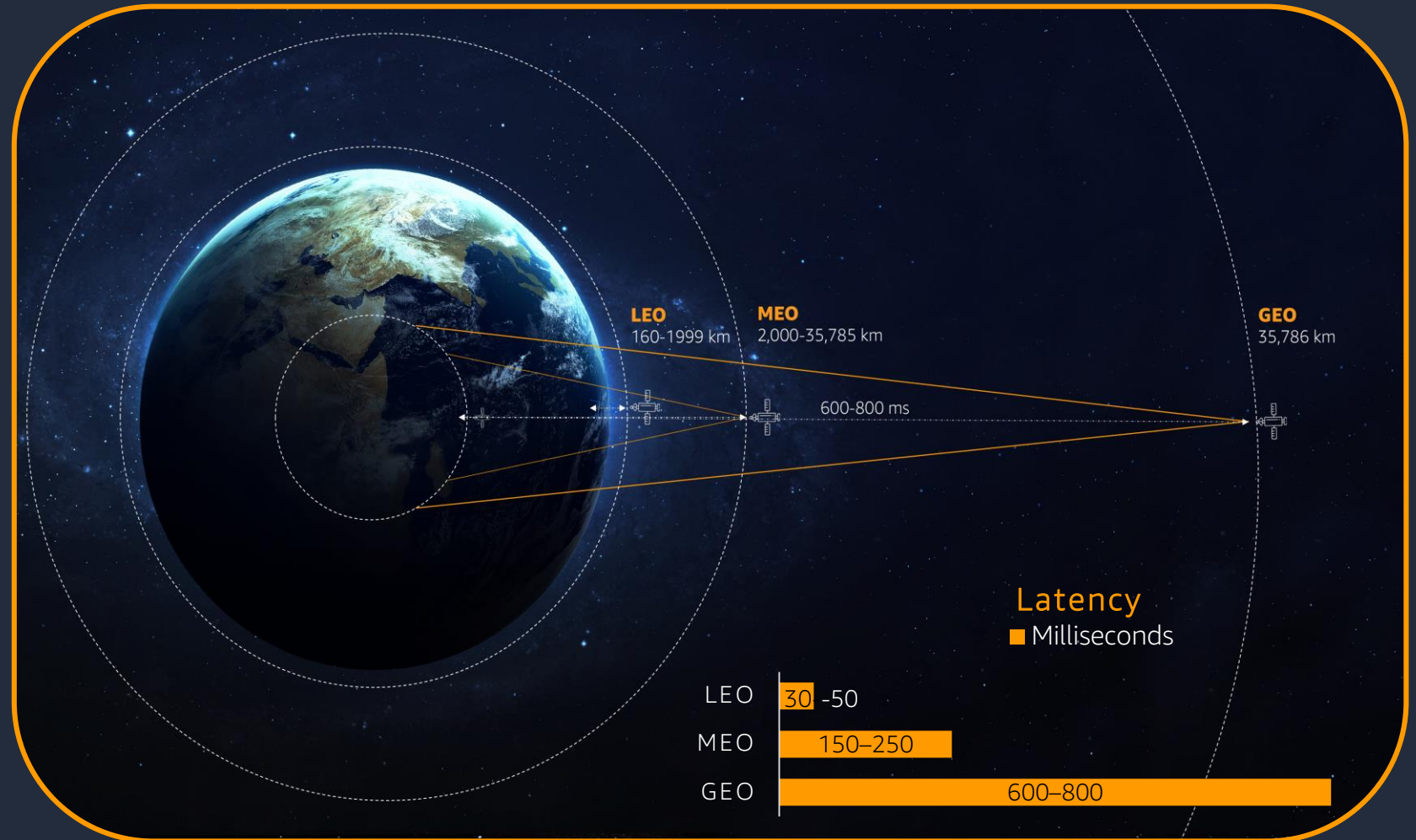
- 30–50 ms roundtrip latency.
- Continuous, near-global coverage.
- Steerable and shapeable beams.
- Small spot beam and higher signal strength.
- Resilient and persistent.

MEO

- 150-ms roundtrip latency.
- Flexible, shapeable beams.
- Higher throughput versus GEO.

GEO

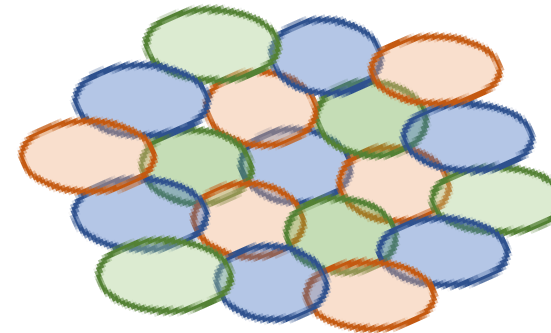
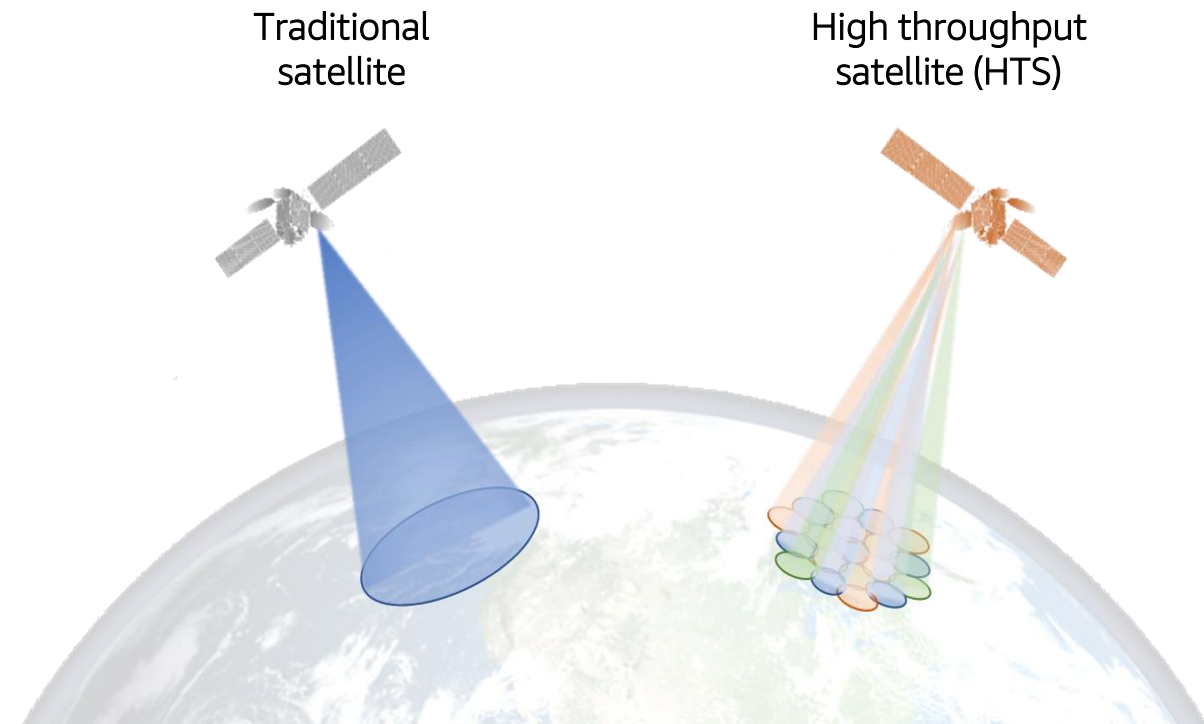
- 600–800 ms roundtrip latency.
- Few satellites.
- Large coverage areas (85,000 km²).
- Equatorial position.
- No polar coverage possible.



New Efficient Spectrum Use Approaches

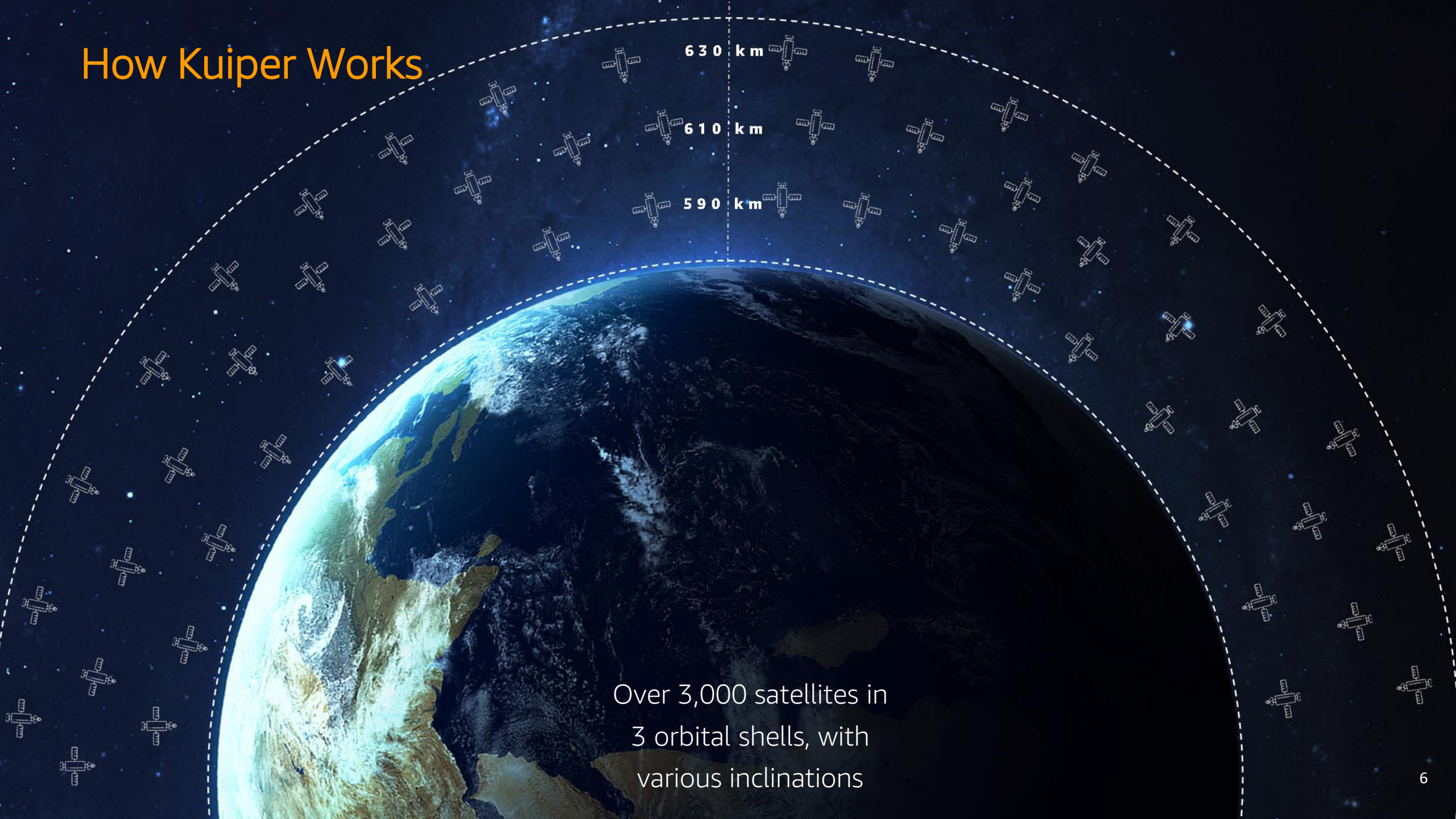
NGSO technology enables delivery of greater capacity with new spectrum sharing approaches.

- Frequency re-use and smaller beams in next generation satellites allow greater capacity to be delivered by the same satellite.
 - This allows more customers to be served at faster speeds.
- NGSO systems provides for greater spectrum sharing and more efficient use of spectrum.
 - The availability of multiple satellites from any earth station enables sharing between NGSO systems, and protection of GSO systems.



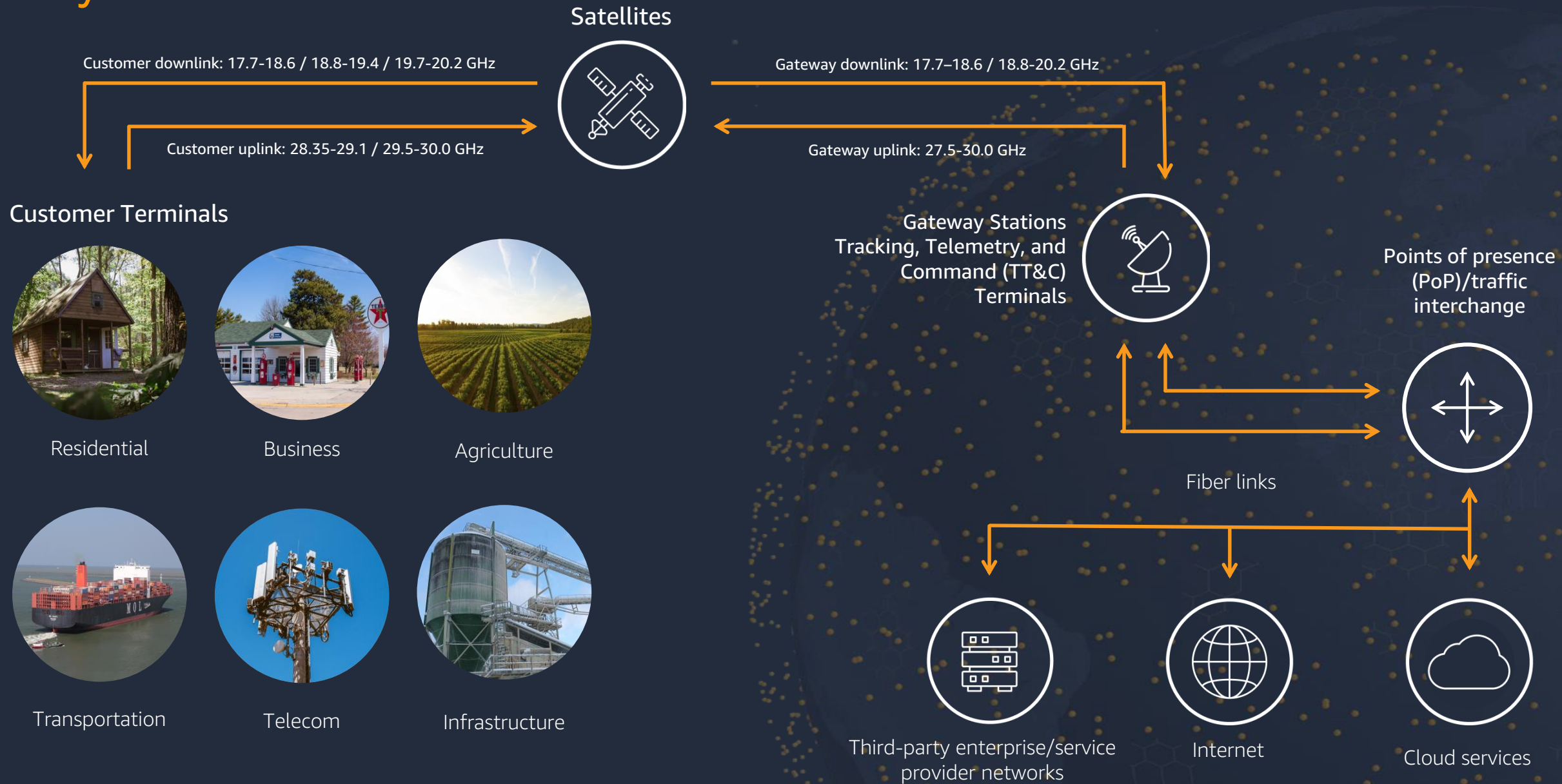
- Dynamic frequency changing
- Dynamic channel bandwidth

How Kuiper Works



Over 3,000 satellites in
3 orbital shells, with
various inclinations

System Architecture



Our customers



Residential

High-speed, low-latency service for individual households.



Small Businesses

Bringing small businesses into the digital age.



Public Services

Increasing access to information, education and healthcare.



Enterprise and Transportation

Flexible, secure broadband to connect remote assets across land, sea and air.



Emergency Services

Reliable broadband to support emergency and disaster relief efforts.



Telecommunications

Expanding wireless and mobile networks to new regions.