

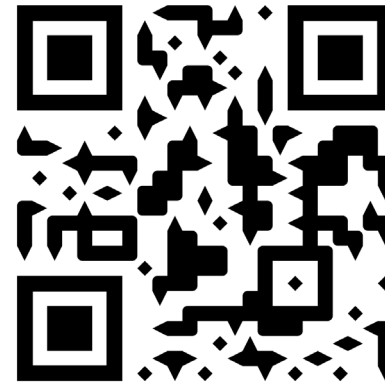
NGSO & GEO: A Variety of Solutions

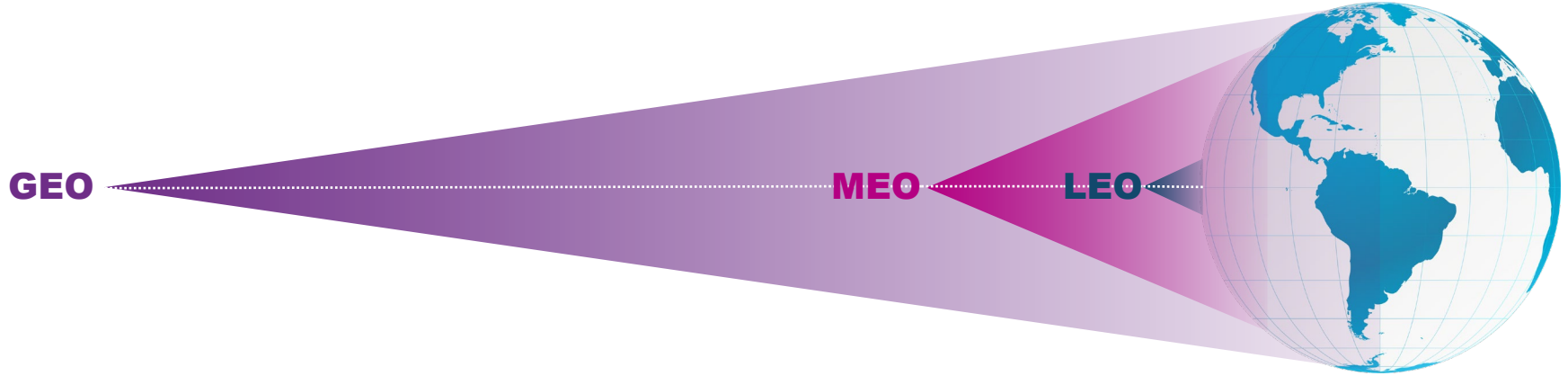
Diego Paldao

November 7, 2021

Why NGSO?

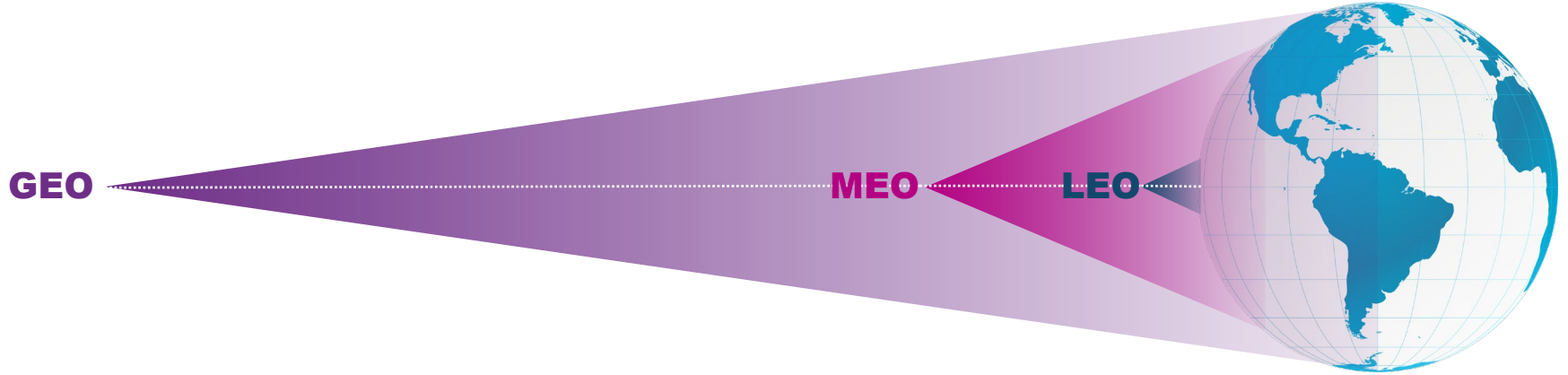
- ▲ Lower latency than GEO
- ▲ New satellites, latest HTS technologies, electronic, software driven
- ▲ Higher Throughput
- ▲ Learn more: <https://o3bmpower.ses.com/>





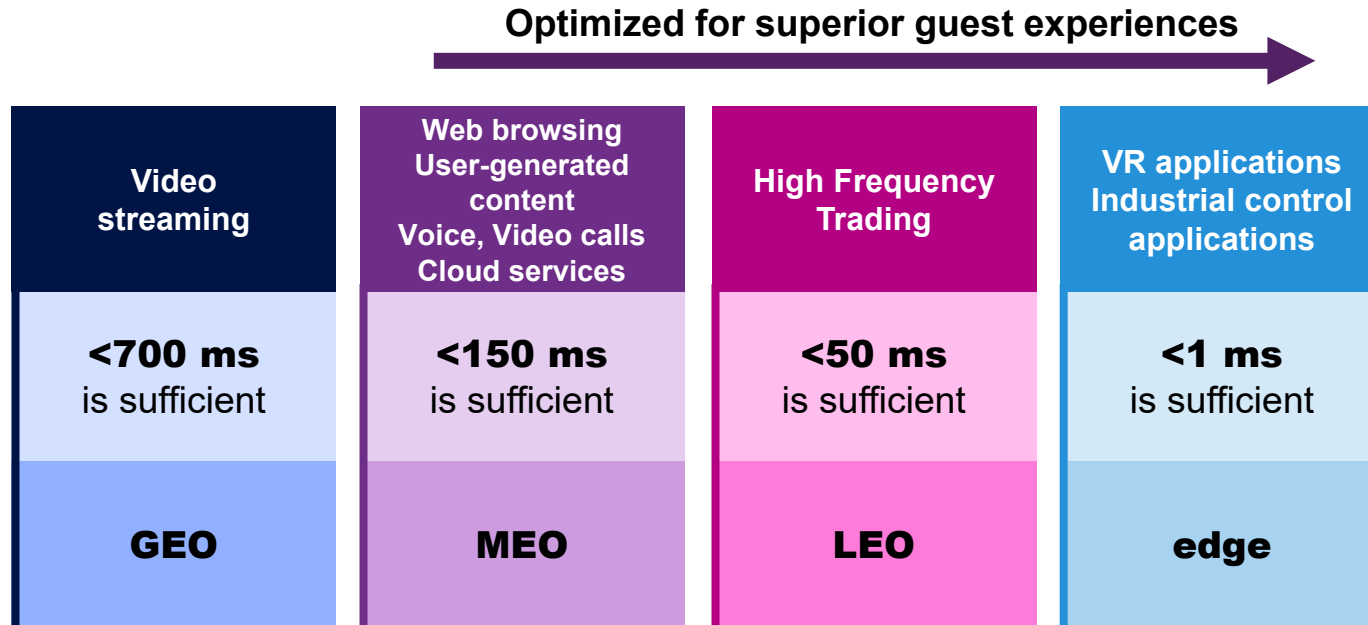
GEO – 36,000km	NGSO MEO ~ 8,000km	NGSO LEO ~ 1,000km
Higher latency (~700 msec)	Low latency (~150 msec)	Very low latency (~50 msec)*
Very large Earth view	Large Earth view	Small Earth view
Few continental gateways	Several regional gateways	Many local gateways
Stationary antennas (3 satellites for global coverage)	1-hour tracking (6 satellites for coverage)	10-minute tracking (100's-1,000's needed for coverage)

* Gateway distance, ISL & ground network dependent



GEO – 36,000km	NGSO MEO ~ 8,000km	NGSO LEO ~ 500 - 1,200km
Low Throughput - ~100Mbps+	High Throughput – multiple Gbps	Medium - <200Mbps
High market access	Medium market access	Low market access
Enterprise service grade	Carrier service grade	Enterprise/Consumer grade
High technology readiness level - 60yrs+	Proven technology readiness – 8yrs+	Low technology readiness - <2years

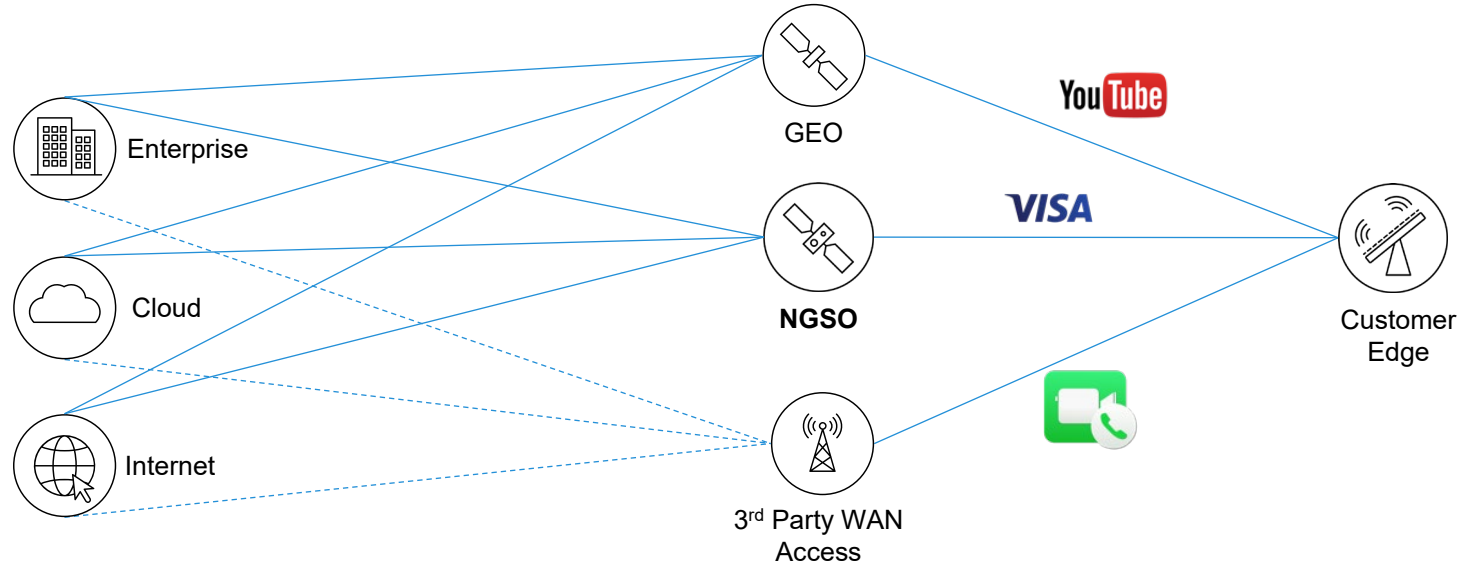
Meeting low-latency performance requirements



SD-WAN enabled traffic separation and steering

SD-WAN solution ensures high availability and empowers the network operator to prioritize traffic based on application requirements

- ▲ Enables intelligent load-balancing
- ▲ Provides rich application-level insights
- ▲ Ensures the right technology used at the right time



Ground systems

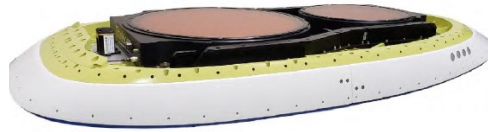
Proven technology & new developments

O3b mPOWER

INDUSTRY STANDARDS



MOBILE FLEXIBILITY

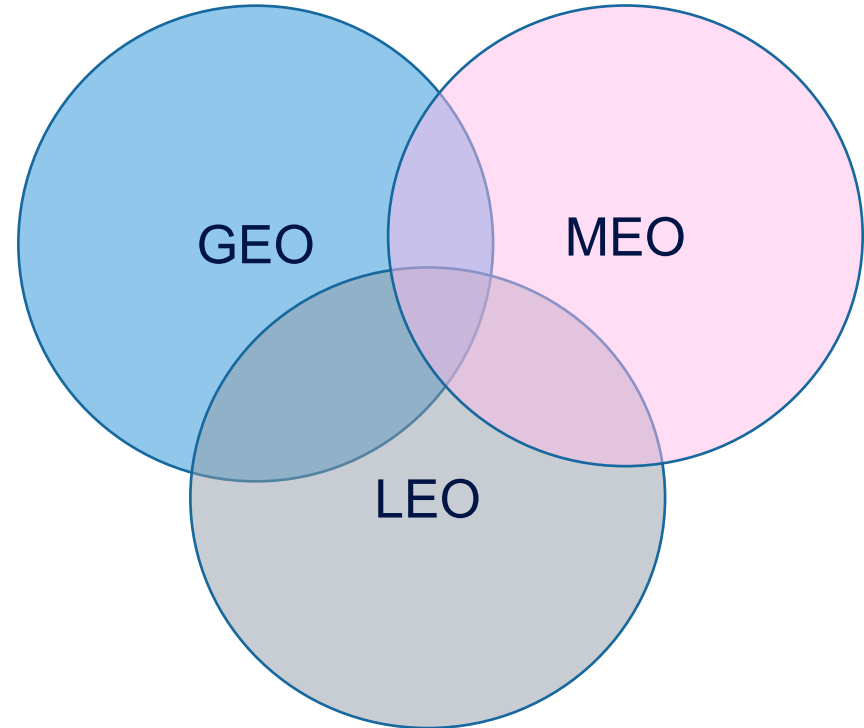


NEW ESA TECHNOLOGIES



What is most important to you?

- ▲ Time to market?
- ▲ Cost per bit?
- ▲ Latency?
- ▲ Flexibility?
- ▲ Forward Throughput?
- ▲ Return Throughput?
- ▲ Coverage?
- ▲ Dependability?
- ▲ Hardware?
- ▲ Availability?



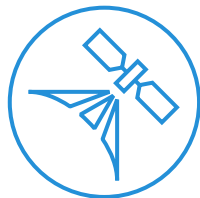
Does your problem require a multi-orbit solution?

The SES constellation ~ a unique MEO & GEO offering



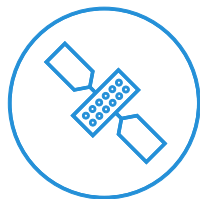
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GEO widebeam



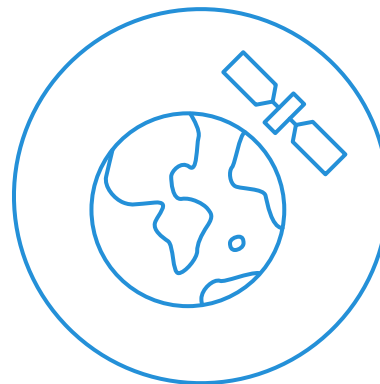
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GEO HTS



20

MEO HTS



99%

global coverage

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THANK YOU



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