

LEO Relay Services (LRS) Overview

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The New SES

Solve. Empower. Soar.

We are a space solutions company that empowers business and government with integrated, purpose-built satellite and connectivity solutions.

Our **PURPOSE**

Space to make a difference

Our **VISION**

To transform space into a platform for innovation to create new possibilities

Our **MISSION**

We are building a secure collaborative space ecosystem that drives lasting human impact



>30 govt organizations



>10.9K TV channels



30 commercial airlines



8 of top 10 MNOS

LEO Relay Service (LRS)

Inter-satellite connectivity via GEO/MEO

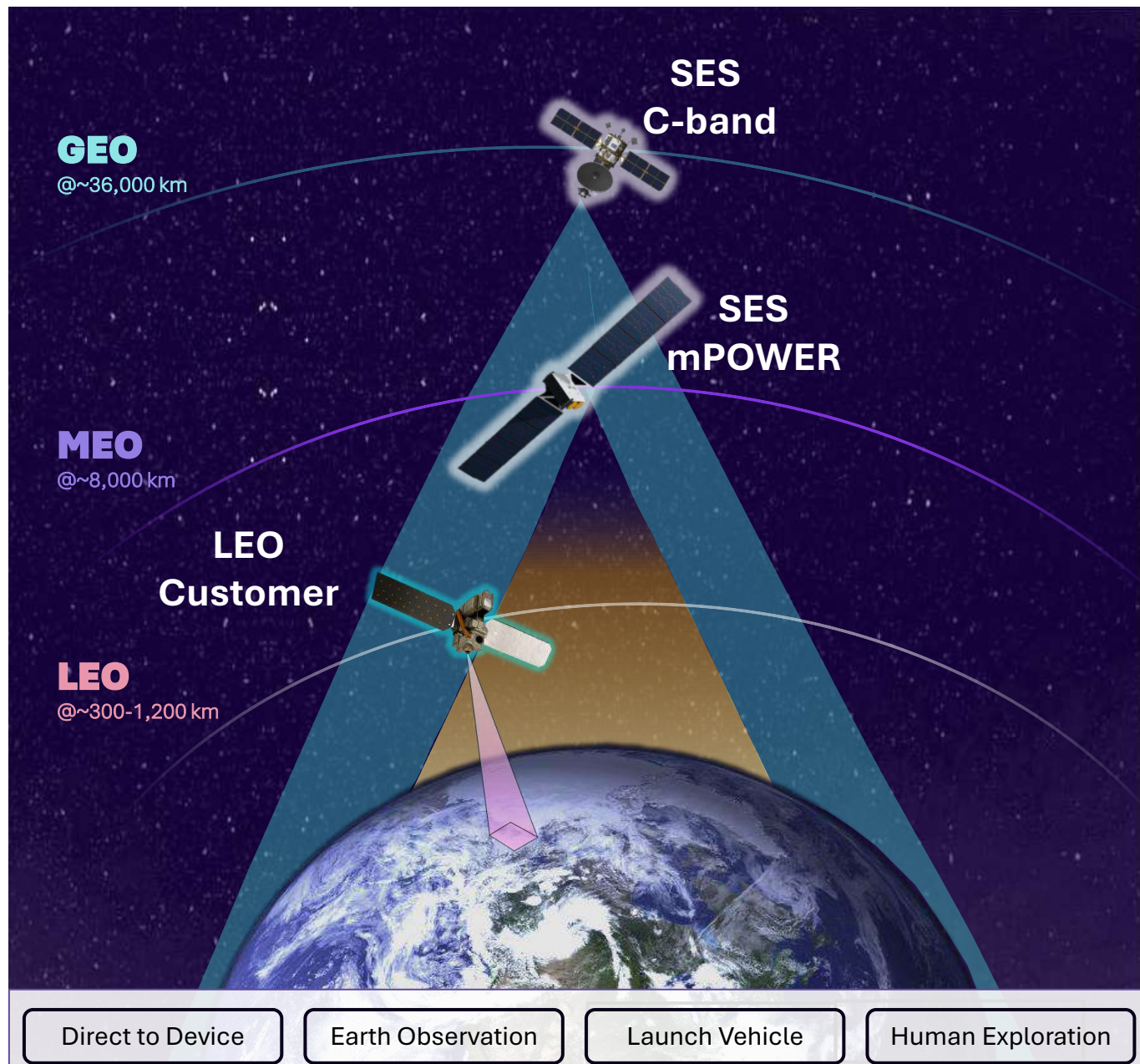
- Global coverage
- Real-time data backhaul
- Two-way continuous communications to LEO
- Telemetry, Tracking & Command (TT&C)
- Hardware and Waveform agnostic solutions
- Pre-Production environment for ground tests

GEO C-band

- Low rate: up to 1 kbps

mPOWER Ka-band

- High rate: return link backhaul up to 1 Gbps



O3b mPower Constellation

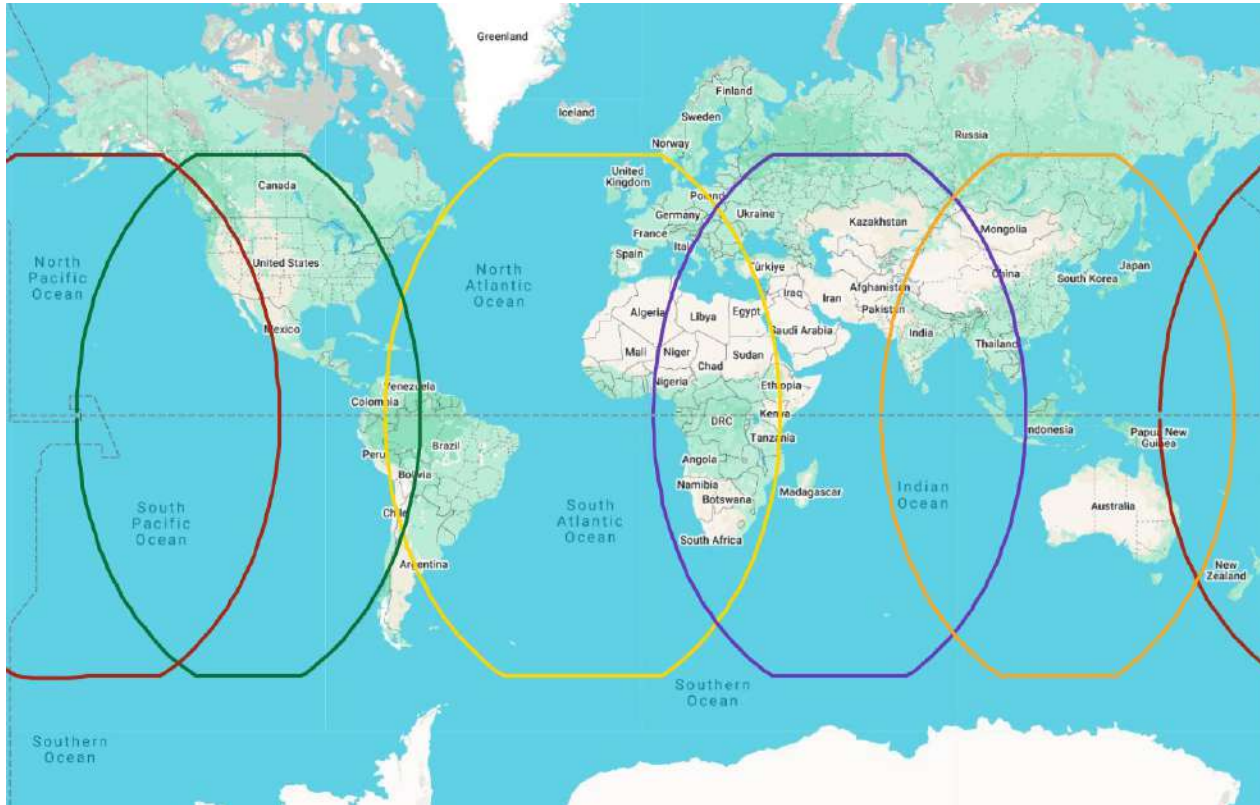
Constellation fully operational today

- 10 spacecrafts on-orbit, 3 to be launched in August '26
- Seamless coverage over $\pm 78^\circ$ latitude from an 8063 km equatorial MEO orbit
- Operates 27.5–30 GHz return / 17.9-20.2 GHz forward, 60 GHz per S/C with 12x frequency reuse
- EIRP (avg): 60.4 dBW per S/C to be shared across all bandwidth
- G/T: 7.2 dB/K
- Channel bandwidth: from 15 MHz to 2.5 GHz independently adjustable forward and return
- Electronically Steered Antennas (ESA) on the S/C



Gateway Solution Overview

Example for 5 Gateway Global Service



Global coverage using 5 gateway service zones

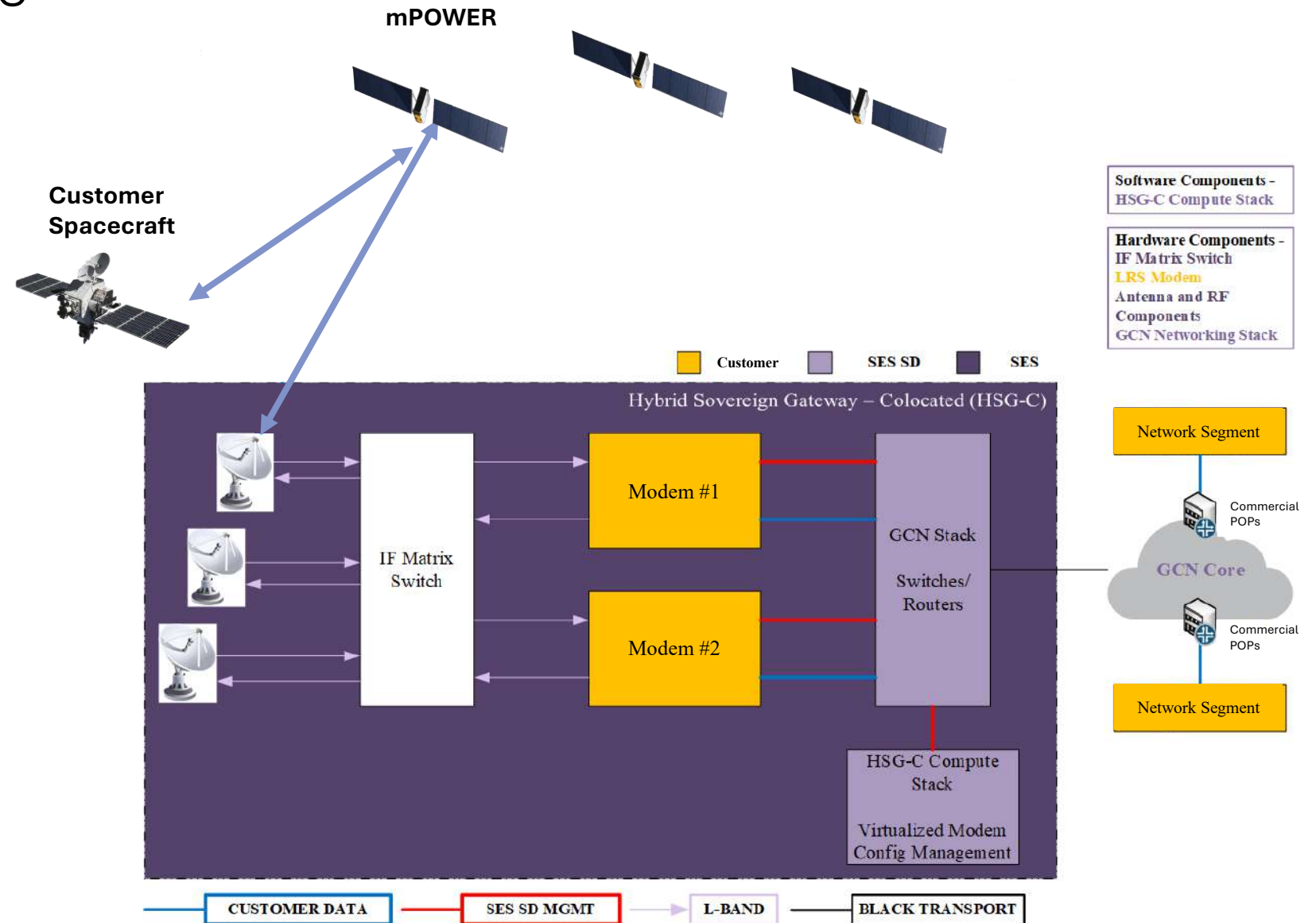
- Hybrid Sovereign Gateways (HSG) – Collocated (HSG-C) locations which support LRS Global coverage; government equipment is installed at our commercial gateways that remains isolated functionally and physically from other equipment
- Earth's surface User min/max longitude values are established for a 10° Elevation (El) to a MEO at 8063 km.
 - LRS longitude limited by extended cone coverage above the Limb of Earth (LoE)

HSG-C	Gateway Location	Lat [°N]	Lon [°N]	Min Lon [°N]	Max Lon [°N]
RAK	Ras Al Khaimah, UAE	25.79	56.04	6.54	105.55
MER	Merredin, AUS	-31.48	118.29	71.58	165.01
PHX	Phoenix, AZ, USA	33.56	247.66	202.23	293.10
GND	Gandoul, Senegal	14.72	342.87	290.07	35.67
SUN	Sunset Beach, HI, USA	21.67	-158.03	150.56	252.98

Gateway Architecture

Block Diagram

- HSG-C (Hybrid Sovereign Gateways – Co-located) connects to customer end point via GCN
- Dedicated and segregated end to end portion of SES commercial gateway infrastructure
- Dedicated baseband subsystem composed of dual modems configured in a 1+1 hot-standby architecture
- Dual modems maintain continuous connectivity to the management and data planes ensuring seamless failover and uninterrupted service



Thank You