

COMMUNICATIONS SERVICES PROJECT PARTNERSHIP

NASA's Communications Services Project (CSP) is pioneering a new era of near-Earth space communications by partnering with commercial industry to enable innovative networking for future missions. CSP will leverage \$278.5 million across six funded space act agreements with commercial industry to facilitate demonstrations, evaluate service performance, and identify future services and capabilities to meet mission needs.

SES Space & Defense (SES SD) has been awarded \$28.96 million to demonstrate a geostationary orbiting C-band and a medium-Earth orbiting Ka-band relay network that can provide high and low-rate SATCOM services to spacecraft in low Earth orbit.

VISION

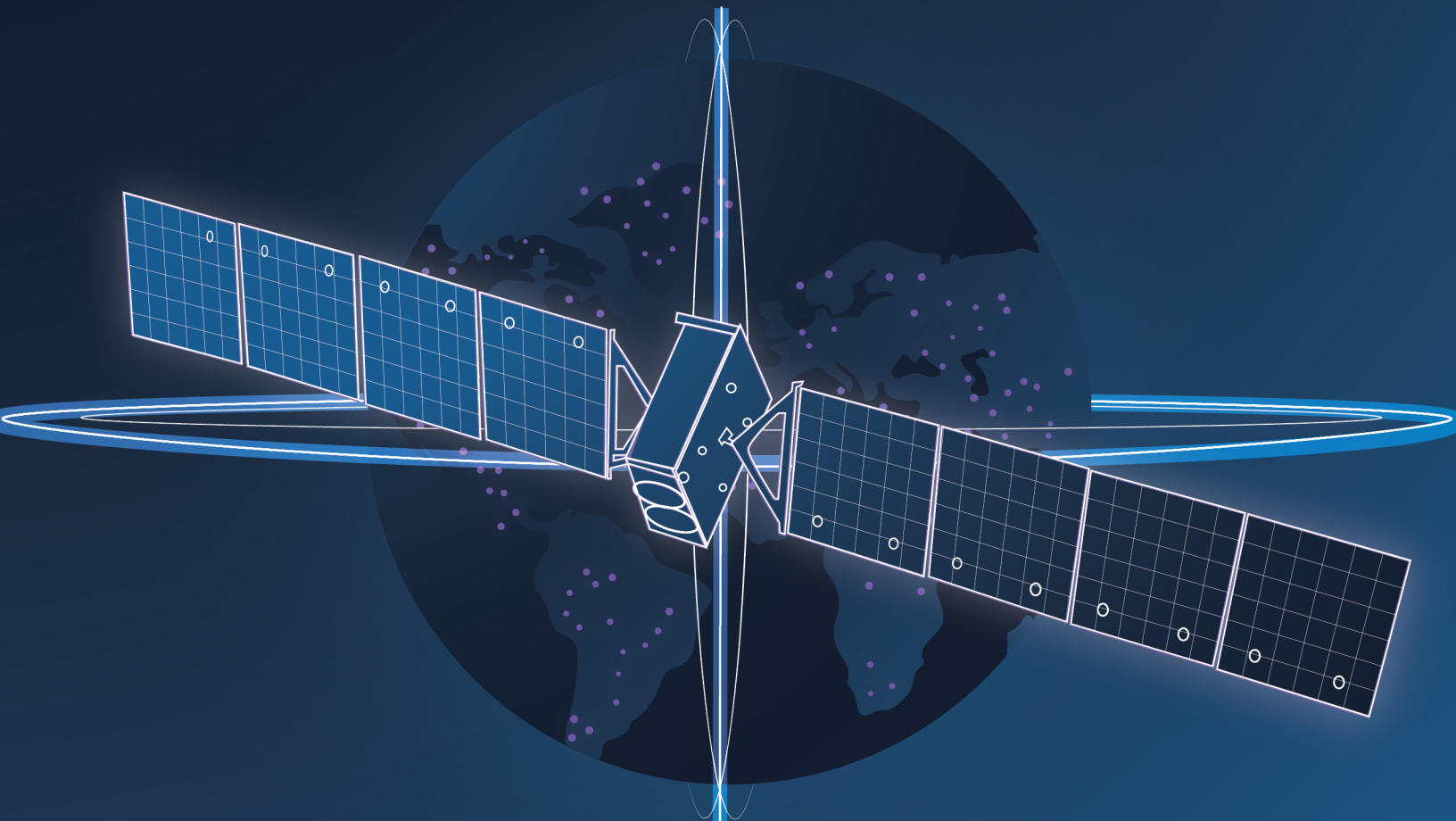
SES will develop a real-time, high-availability connectivity solution enabled by their established geostationary (GEO) and medium Earth orbit (MEO) satellite constellations.

SES's established GEO constellation provides C-band global coverage and enables robust low data rate, continuously on C-band services.

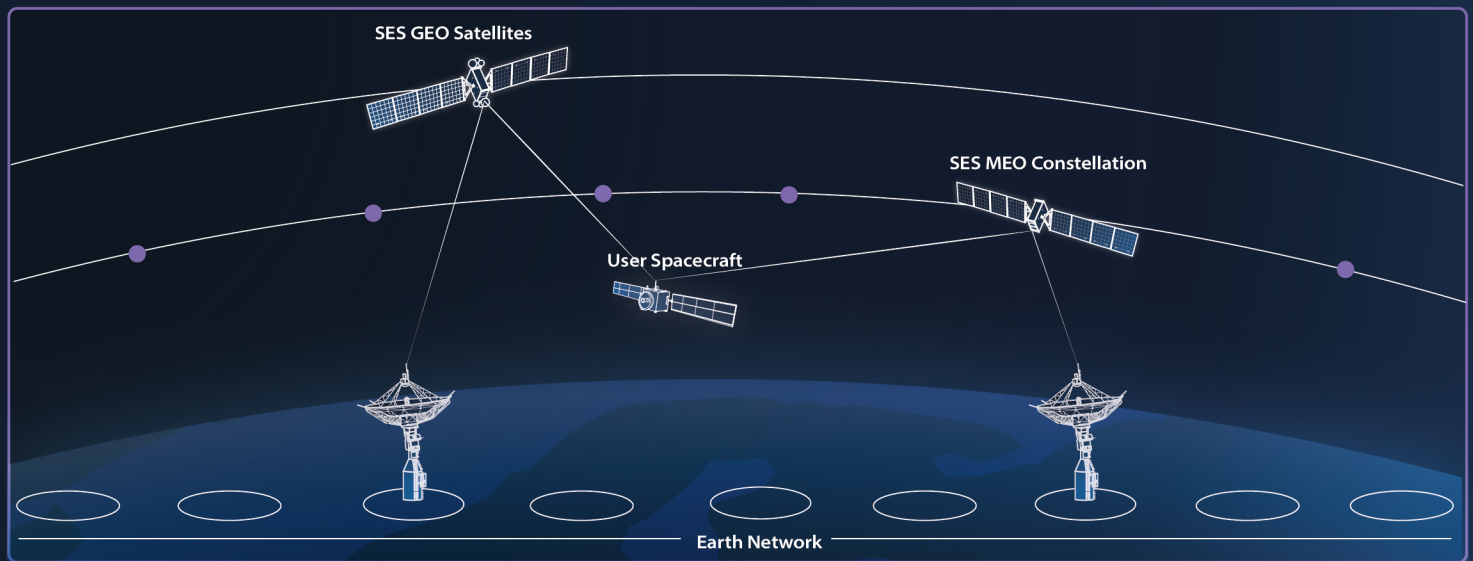
O3b mPOWER, SES's second-generation MEO system, is comprised of 11 high-throughput satellites and an extensive ground infrastructure. Building on the

proven commercial success of the established O3b MEO constellation, O3b mPOWER will enable high data rates coupled with low-latency data relay communications to and from near-Earth orbit.

The high-throughput O3b mPOWER constellation and existing GEO satellites will join forces with SES's newly established O3b mPOWER constellation to deliver the industry's only multi-orbit, multi-band offering, that provides unprecedented network resiliency.



NETWORK ARCHITECTURE



SES' multi-orbit, multi-band offering will support routine missions, contingency operations, launch and ascent, and early operations phase communications across multiple bandwidths for spacecraft in low-Earth orbit.

KEY FEATURES

- Multi-band, multi-orbit satellite services
- Proven non-geostationary orbit (NGSO) innovative technology
- 5000 customer beams per O3b mPOWER satellite
- Designed to meet stringent cybersecurity requirements
- High throughput – up to 100 Mbps per LEO spacecraft

LEARN MORE

CSP is managed by NASA's Glenn Research Center in Cleveland, Ohio under the direction of the Space Communications and Navigation (SCaN) program. SCaN serves as the program office for all of NASA's space communications activities, presently enabling the success of more than 100 NASA and non-NASA missions.

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