National Aeronautics and Space Administration

KEPLER

COMMUNICATIONS SERVICES PROJECT PARTNERSHIP

NASA is commercializing satellite relay services for future robotic science missions in low Earth orbit. The Communications Services Project is leading agency efforts by investing in the U.S. satellite communications industry to develop and demonstrate powerful services for science missions launching as early as 2031.

Kepler Communications US Inc. (Kepler) has partnered with the Communications Services Project through a Nonreimbursable Space Act Agreement to grow the U.S. satellite communications market and expand service offerings for future missions.

VISION

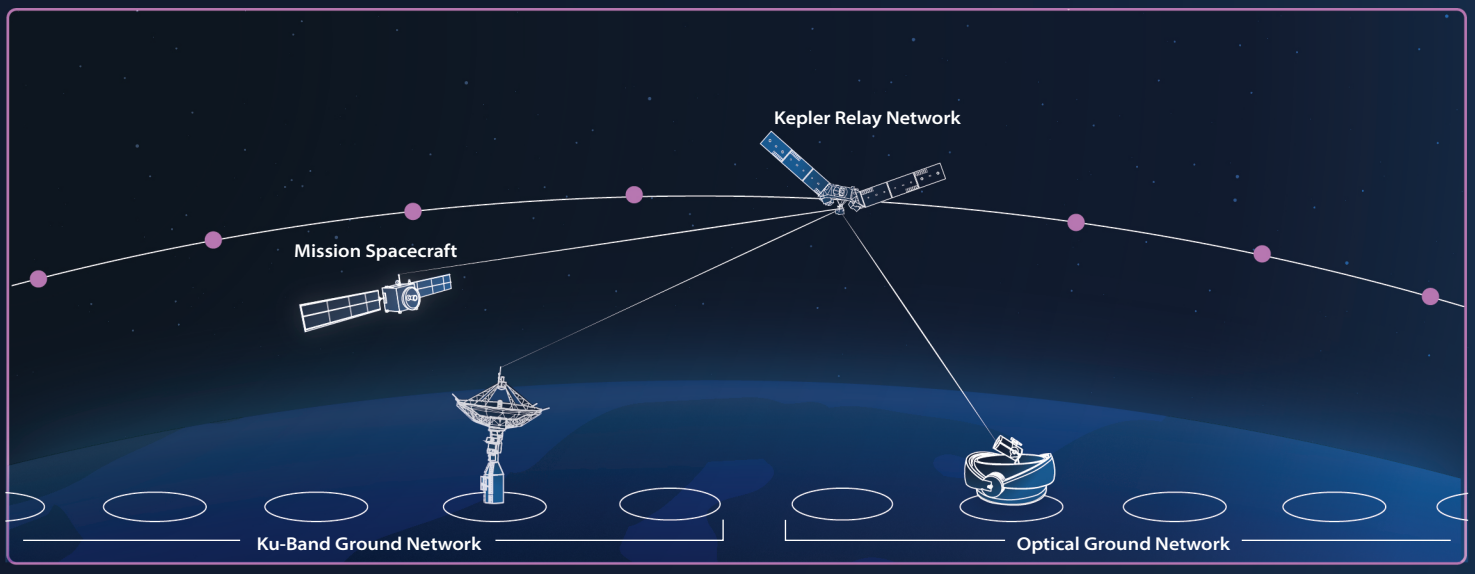
Kepler's vision is to provide real-time, continuous connectivity for space, making space-generated data instantaneously accessible, empowering humanity to become a spacefaring civilization. The Kepler Network provides customers with always-available coverage in low-Earth orbit (LEO) with sub-second end-to-end latency, gigabit throughputs, and onboard processing to enable real-time communications.

Kepler's optical data relay constellation provides space assets with on-demand, bidirectional gigabit optical communications links. Users can connect to the network and obtain direct low-latency Internet access for spacecraft using a selection of Space Development Agency (SDA) compatible optical terminals.

Kepler's optical network services are powered by two near-orthogonal planes of optically interconnected relay satellites, located in sun-synchronous orbits. Combined with a global network of Ku-band ground stations, The Kepler Network provides complete coverage to spacecraft in LEO.

All illustrations are an artistic interpretation of future space communications architecture.

NETWORK ARCHITECTURE



Kepler plans to deliver data through an SDA-compatible optical data relay network, connecting space and Earth communications with low latency, high throughput, and enhanced security. The Kepler Network plans to provide complete coverage of LEO above 400 km altitude.

KEY FEATURES

- **Secure and fully redundant space and ground segments**
- **Interoperable with all SDA-compatible optical terminals**
- **Low end-to-end latency and high throughput for real-time connectivity**
- **Up to 2.5 Gbps optical links**
- **95% availability to anywhere in LEO above 400 km altitude**

LEARN MORE

The Communications Services Project is managed by NASA's Glenn Research Center in Cleveland, under the direction of the SCaN (Space Communications and Navigation) Program within NASA's Space Operations Mission Directorate. SCaN operates and manages the communications and navigation systems that are critical to every NASA missions, while facilitating a seamless transition from near-Earth government-owned communications assets to commercial alternatives.

To engage with NASA's Communications Services Project, contact **scan@nasa.gov.**