National Aeronautics and Space Administration

TELESAT

COMMUNICATIONS SERVICES PROJECT PARTNERSHIP

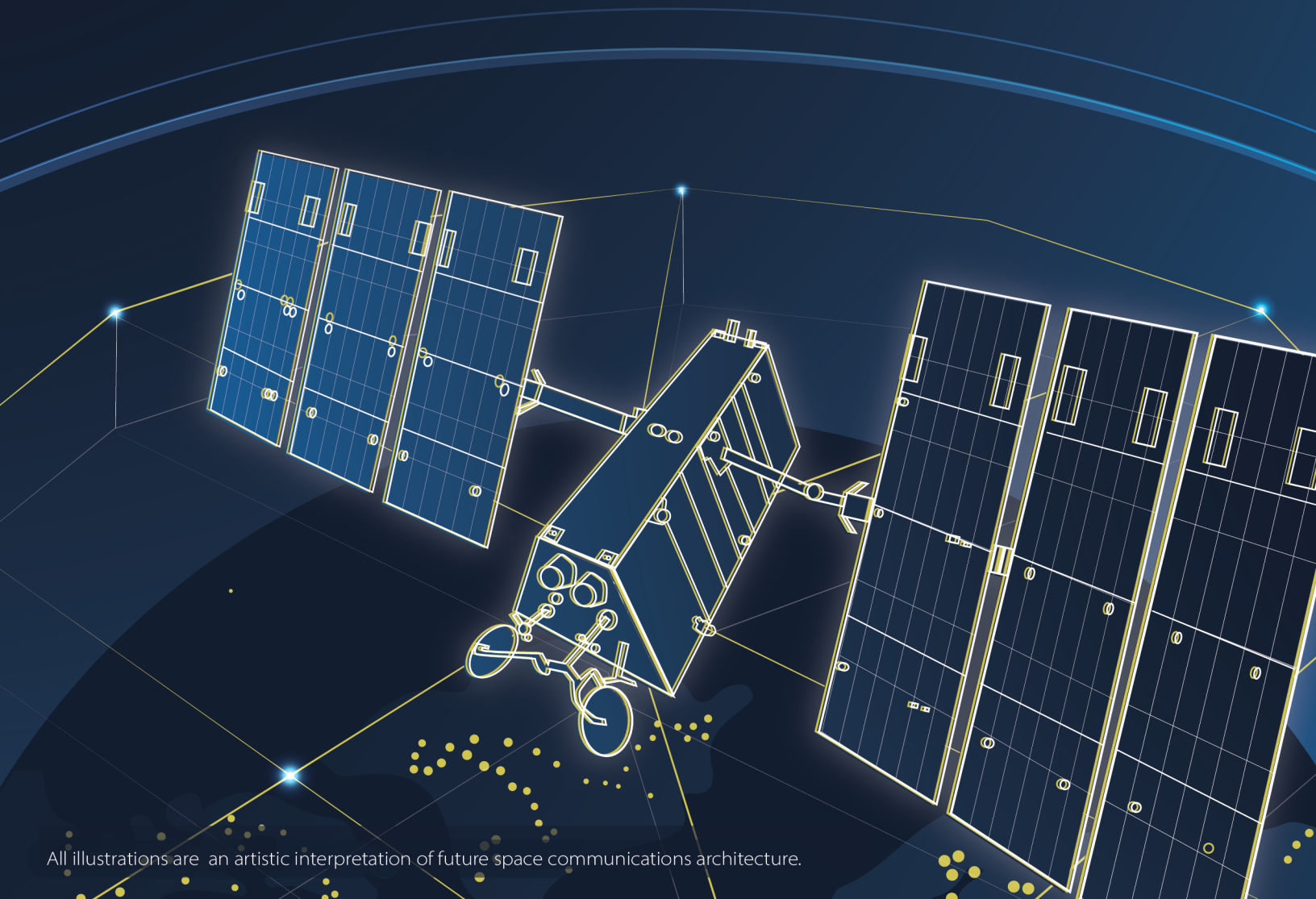
NASA's Communications Services Project (CSP) is pioneering a new era of near-Earth space communications by partnering with commercial industry to enable innovative networking for future missions. CSP will leverage $278.5 million across six funded space act agreements with commercial industry to facilitate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

Telesat Government Solutions has been awarded $30.65 million to demonstrate its Telesat Lightspeed low-Earth orbiting (LEO) Ka-band relay network to provide high-rate SATCOM services to missions in LEO.

VISION

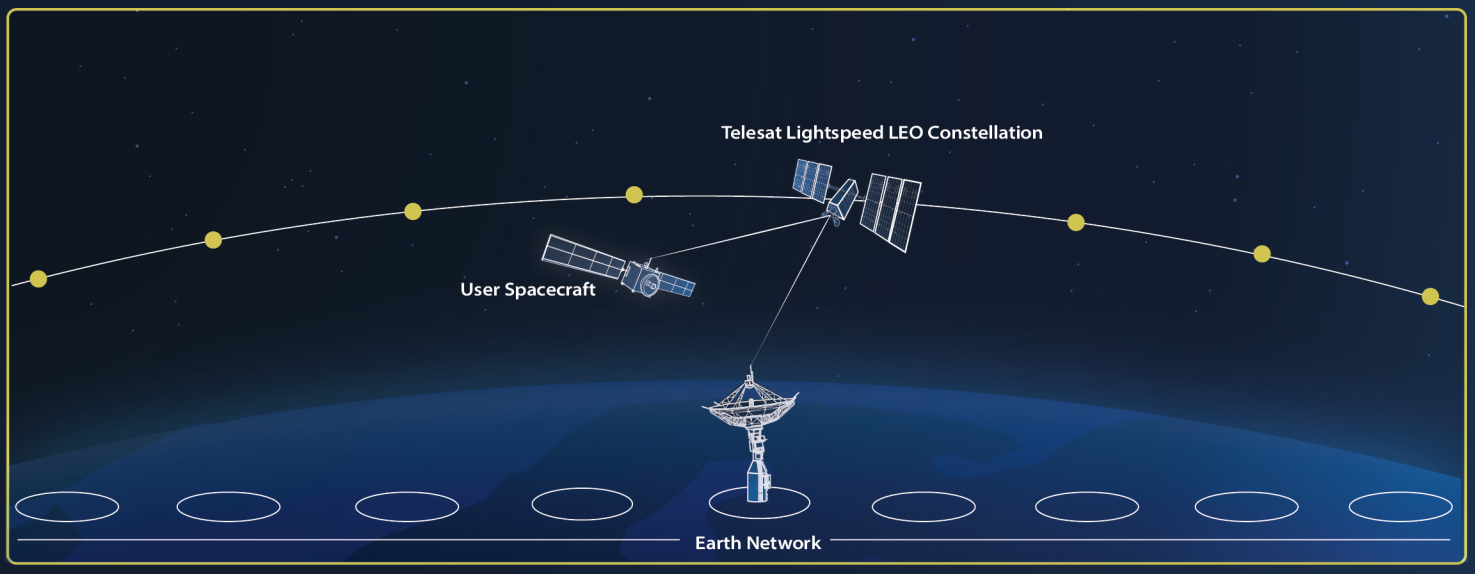
Telesat Government Solutions plans to leverage their Telesat Lightspeed network with optical intersatellite link technology to provide seamless end-to-end connectivity for future LEO users.

The Telesat Lightspeed constellation will consist of 198 LEO satellites that are optically connected to form a global mesh network. The Telesat Lightspeed network will provide space-to-space relay services to multiple LEO User satellites, with increased speeds and availability and low latency, utilizing a high-throughput Ka-band terminal. Once a user connects to this cutting-edge constellation of satellites, data is seamlessly routed to Earth and integrated into ground data networks.



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

NETWORK ARCHITECTURE



Telesat will harness the power of their advanced Telesat Lightspeed network to demonstrate connectivity, tasking and command, telemetry, and mission data flow services to users in LEO.

KEY FEATURES

- **Optically linked LEO satellites**
- **RF space-to-space relay capabilities**
- **Inter-satellite latency on par with fiber networking**
- **High throughput providing enterprise-class connectivity**
- **Advanced digital beam-forming technology for dynamic capacity allocation**

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.

To speak with Telesat Government Solutions about CSP architecture, contact Gerry Jansson at **gerry.jansson@telesat-gs.com**

To speak with NASA about CSP architecture, contact Peter Schemmel at **peter.j.schemmel@nasa.gov**