TELESAT
LIGHTSPEED™

Mission-critical LEO satellite services for defence forces

TELESAT™

INCREASE YOUR OPERATIONAL ADVANTAGE IN THE DIGITAL BATTLESPACE

The Geostationary Orbit (GEO) satellites defence forces have relied on for decades can pose operational risks in today's congested, contested, and competitive space environment. With their fixed orbital location, they're vulnerable to physical attacks, and they can't always support the digital operations that are essential to succeed in the modern digital battlespace.

Telesat Lightspeed mitigates these risks. This highly advanced Low Earth Orbit (LEO) satellite network empowers you to diversify space assets across orbits and upgrade to real-time digital battlespace applications with complete confidence.

Advance military operations across land, sea, and air

Telesat Lightspeed is the only global LEO satellite network that meets your unique operational and service delivery requirements with no need to build, purchase, or operate satellites.

You have secure, reliable, and flexible access to multi-domain networking capabilities that leverage the superior uplink bandwidth of Ka-band spectrum to support the most demanding Intelligence, Surveillance, and Reconnaissance (ISR) applications.

Keep ground troops connected everywhere

- ▲ Cover remote units and fixed forward operating bases
- ▲ Process data in real time whenever and wherever needed
- ▲ Upgrade to high-throughput, high availability inter-base communications
- ▲ Provide Communications on the Move (COTM) and Communications on the Pause (COTP) capabilities

Accelerate ship-based operations

- ▲ Enable instant, reliable ship-to-ship and ship-to-shore communications in the most remote locations
- ▲ Implement real-time connected operations, logistics, and intelligence solutions
- ▲ Bring superior VoIP and video communications to everyone onboard

Increase visibility and precision of air operations

- ▲ Live-stream missions on crewed and uncrewed aircraft in high resolution
- ▲ View radar and multispectral images in real time
- ▲ Improve navigation accuracy
- ▲ Use moving target indicator systems

Provide reliable, resilient, and assured access to LEO satellite services

Every component in the Telesat Lightspeed network — from the spacecraft to ground infrastructure and corporate IT systems — is based on Secure by Design principles. This proactive approach ensures that security is considered at every design stage and that protection mechanisms are built-in to hardware and software rather than added as an afterthought.

Rely on a Zero-Trust Architecture and stringent cybersecurity

To support the requirement for a Zero-Trust Architecture, Telesat has adopted the internationally recognized National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF), which has considerable overlap with the ISO/IEC 27001 standard. Telesat also implements the cybersecurity measures outlined in the:

▲ U.S. Space Force Infrastructure Asset Pre-Approval (IA-Pre) program for Commercial Satellite Communications (COMSATCOM) systems.

▲ U.S. Committee on National Security Systems Policy 12 (CNSSP-12) for cybersecurity in space systems.

Take PACE communications planning into space

Telesat Lightspeed is a resilient, self-healing mesh network that uses Optical Inter-Satellite Links (OISLs) to provide millions of potential data routes between any two points on earth. This extremely high path diversity supports primary, alternate, contingency, and emergency (PACE) communications planning and is essential for reliable service delivery.

Redundancies in ground-based technologies provide uplink diversity and seamless landing station switch-over capabilities to further increase the resilience and reliability of satellite communications.

Protect satellite communications end-to-end

With Telesat Lightspeed, your organization maintains responsibility for end-to-end data encryption so you can use government-owned key management systems and approved cryptographic devices for LEO satellite communications.

As the encrypted data travels through space, advanced satellite technologies such as narrow, steerable beams, DVB-S2X beam hopping, and fast frequency hopping within Ka-band help to ensure that communications are extremely difficult to intercept, decipher, and jam.
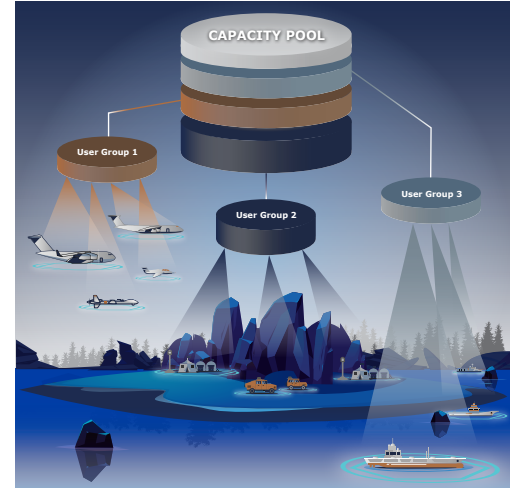
Control all aspects of SATCOM service delivery

Telesat Lightspeed gives you complete control over your own dedicated pool of satellite network capacity, including how network traffic is prioritized and where satellite data lands.

Allocate and redistribute network capacity as needed

You can create and manage satellite services through a user-friendly portal or APIs that integrate with your existing IT planning and management systems. This autonomy allows you to:

▲ Configure, activate, and modify service plans for fixed sites and mobile platforms

▲ Dynamically focus and reassign network capacity whenever required

▲ View the status of connectivity services and user terminals
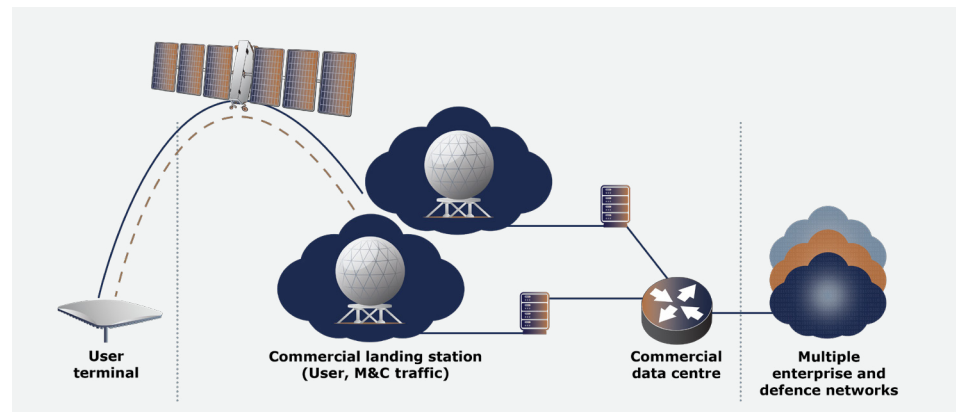
▲ View service performance and usage metrics

You can also define different transmission priorities for different data types, such as real-time, critical, and non-critical, to support each mission in a manner that meets operational imperatives and requirements.
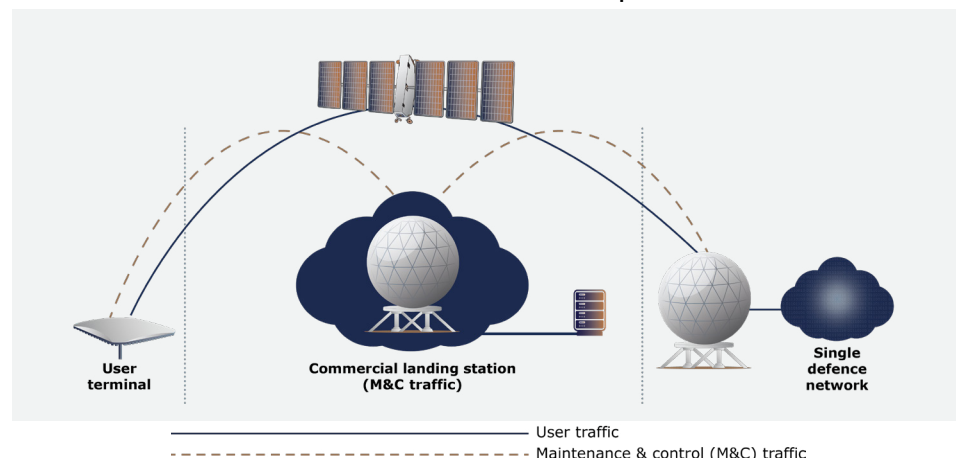

Use public or private landing stations

You also have the flexibility to land satellite data at commercial or defence-owned ground infrastructure. Commercial ground infrastructure is ideal for non-sensitive communications. Private access stations allow you to bypass all third-party ground infrastructure for secure, point-to-point communications globally and the ability to create fully private defence networks of any size.

Commercial infrastructure option

User terminal — Commercial landing station (User, M&C traffic) — Commercial data centre — Multiple enterprise and defence networks

Private access station option

User terminal — Commercial landing station (M&C traffic) — Single defence network

———— User traffic
- - - - - Maintenance & control (M&C) traffic

Evolve to a high-performance, hyper-connected future

Telesat Lightspeed supports current and future requirements for high-bandwidth, latency-sensitive applications as well as interoperability with satellites in other orbits, terrestrial networks, and military systems.

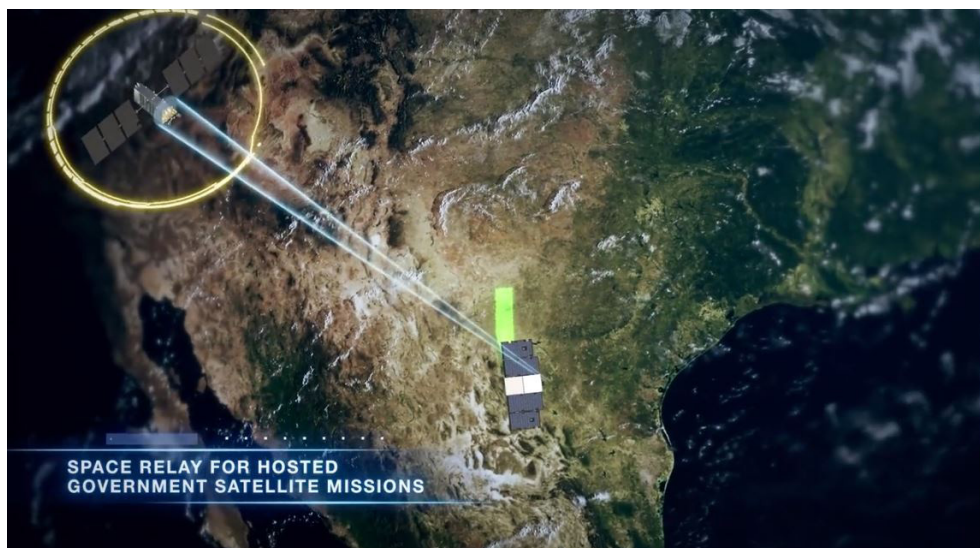## Advance ISR capabilities with guaranteed performance

With guaranteed service delivery data rates from Mbps to multiple Gbps, you can smoothly scale satellite services over time as more sophisticated and demanding ISR applications become available. All Telesat Lightspeed data rates are backed by service level agreements (SLAs) that include guarantees for key performance indicators (KPIs) such as network availability, latency, jitter, and packet loss rates.

Increase collaboration nationally and internationally

Telesat Lightspeed delivers Carrier Ethernet services that follow the internationally recognized MEF standard for telecom network interoperability. This allows the satellite network to function as a space-based extension of any MEF-compliant telecom network to enable interoperability and improved collaboration across the Joint Force, government departments, and Allies.

Leverage information and intelligence from third-party satellites

Because Telesat Lightspeed OISLs comply with the Space Development Agency (SDA) standard, the satellites can connect to third-party LEO satellites. This "Allied by Design" approach simplifies and accelerates access to vital information such as ISR insights.

SPACE RELAY FOR HOSTED
GOVERNMENT SATELLITE MISSIONS

Extend the reach of key defence systems and platforms

Existing defence communications systems and platforms can connect to Telesat Lightspeed through secure user terminals at each endpoint. This capability allows you to extend the reach of vital operational systems, such as Command and Control (C2) systems, anywhere in the world.

See the Telesat Lightspeed network in action

Telesat is a proven and long-respected satellite service provider to defence organizations, and we designed Telesat Lightspeed to meet your evolving needs.
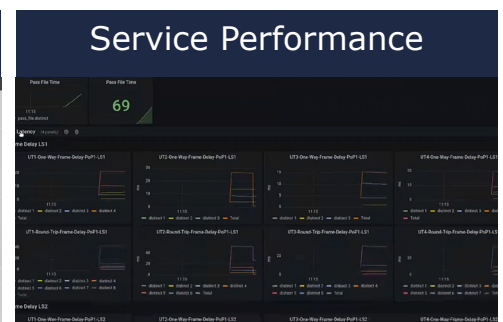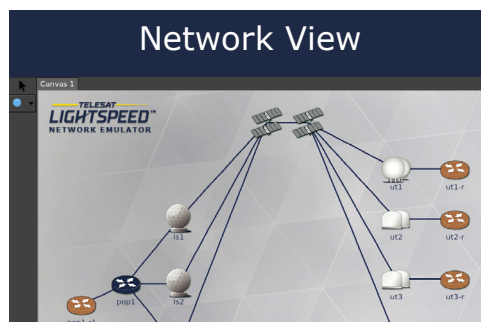
Every component in this revolutionary LEO satellite network is engineered from the ground-up to meet your requirements for secure, reliable, resilient, and assured satellite network access in a congested, contested, and competitive space environment. As with our GEO satellite services, Telesat's LEO satellite operations, network operations, and cybersecurity experts will provide live support to your operations teams 24/7/365.

Get your Telesat Lightspeed Network Emulator today

With the Telesat Lightspeed Network Emulator, you can see exactly how the Telesat Lightspeed network will perform under a wide variety of scenarios. This intuitive, plug-and-play platform is ideal to:

▲ Test and validate encryption technologies, applications and use cases

▲ View Telesat Lightspeed service performance data

▲ Pre-plan terrestrial infrastructure and user terminal selections

▲ And more…

Visit www.telesat.com/network-emulator

Constellation and Links	Network View	Service Performance

Contact Us

North America

Headquarters
Ottawa, ON, Canada
+1 613 748 0123

Washington, DC, USA
+1 301 771 4630

Telesat Government Solutions
Arlington, VA, USA
+1 571 559 1500

Latin America
Rio de Janeiro, Brazil
+55 21 3211 9700

Asia
Singapore
+65 6538 1738

Europe, Middle East, and Africa
London, United Kingdom
+44 20 3927 3720

https://www.telesat.com/

202540