

Telesat introduces Lightspeed broadband satellite network

Headquartered in Ottawa, Canada, [Telesat](#) today announced that it has entered into an agreement with [Thales Alenia Space](#) to be the prime manufacturer of its global low Earth orbit (LEO) constellation, Lightspeed, a broadband network of 298 satellites with advanced ground network.

Thales Alenia Space and its affiliate [Telespazio](#) have made a Lightspeed capacity commitment in connection with the agreement.

The two companies have collaborated on the design of Lightspeed. It is optimized to serve the fast-growing broadband connectivity requirements of fixed and mobile network operators, aeronautical and maritime users, enterprise customers and governments. Operating under Telesat's global Ka-band priority spectrum rights, the first Lightspeed satellites are expected to be launched in approximately two years, with customer beta testing beginning shortly thereafter and commercial services commencing in the second half of 2023.

What it offers

Lightspeed will provide fiber-like connectivity across the entire Earth at price points that allow network operators to efficiently and economically enhance their network coverage. Operating roughly 1,000 kilometers above Earth in LEO, Lightspeed will be free from the long latency delays and capacity limitations that are inherent to satellites in geostationary and medium Earth orbits.

Technologies and features include:

- Phased array antennas on each satellite combined with advanced beam hopping technology to create approximately 135,000 beams that can dynamically focus multiple Gbps of capacity into demand hot spots like remote communities, large airports or major sea ports
- Nearly 1,200 high capacity optical links - four on each satellite - that combine to create a highly resilient, flexible and secure space-based IP network, moving data across the network and around the world at the speed of light
- Data processing in space, including full digital modulation and demodulation on the satellite, coupled with an end-to-end network operating system, that improves link performance and gives customers flexibility for routing traffic across the globe eliminating gateway hops
- A patent-pending architecture for the constellation which features satellites operating in both polar and inclined orbital planes. This results in true pole-to-pole global coverage, concentrating capacity in areas to maximize network efficiency and improve cost economics

Telesat is developing affordable end-user terminals, with a range of antennas and modems optimized for each of the market verticals Lightspeed will serve. In addition, Lightspeed leverages industry-wide network interface standards to enable simple, seamless integration with customers' terrestrial networks, without the need to integrate proprietary hardware or software.

Under the terms of the agreement, the companies have provided for the advancement of the program while the financing for the project is being finalized.