

Cellular Backhaul

In a world increasingly inter-connected, cloud-based and data-driven, LeoSat Enterprises is launching a constellation of up to 108 low-earth orbit (LEO) communications satellites to providing the first commercially available, enterprise grade, extremely high-speed and secure data service worldwide.

Using optical inter-satellite links and operating in polar orbits at an altitude 5 x closer to earth than MEO and 25 x closer than GEO, LeoSat has many advantages when it comes to throughput, latency and true global coverage. As such, LeoSat offers a unique data network solution with the highest performance offered by any existing or planned system, including fiber.

Combining the Speed of Fiber with the Ubiquity of Satellite



The LeoSat system is being developed in conjunction with Thales Alenia Space, a company with unmatched expertise in designing and manufacturing low earth orbit constellations. The high-throughput satellites (HTS) will form a mesh network interconnected through laser links, creating an optical backbone in space which is about **1.5 times faster** than terrestrial fiber backbones, thus creating a paradigm shift in the use of satellites for data connectivity – rather than a gap filler or last resort where no terrestrial alternative is available. LeoSat will offer a **highly secure** and ubiquitous service that can rival and often beat fiber in terms of latency.

Increased Capacity for Cellular Backhaul



As cellular protocols become more and more sophisticated and cellular use accelerates, there is an ever increasing need to transport cellular signals for long distances, at high speeds, in high volume and native form. These growing backhaul **needs are not being met by current terrestrial networks** and existing and planned satellite networks are too slow and the bandwidth limited. For existing and emerging market telecom operators, LeoSat offers significant advantages as its latency, timing and transport are in compliance with the network standards of the newer **4G, 5G and LTE cellular systems**. And with the continued growth in Internet use, streaming media, smart phone use, mobile apps and the "Internet of Things", the **low latency of the LeoSat system** will become increasingly an **attractive alternative** to the high latency of GEO systems.

Leo Sat Connectivity Solutions:

-  Backhaul to "islands"
-  Backhaul towards remote locations
-  Backhaul towards mobile base stations
-  Event ready backhaul and seasonal hotspots
-  Service hubs

System Overview

The Most Advanced Commercial Satellite System Ever Built

The LeoSat satellite constellation uniquely provides customers with **symmetric, very high-speed, low latency and highly secure communications between locations anywhere on earth, completely independent of existing terrestrial networks.**

This system which consists of up to 108 satellites orbiting at approximately 1,400 kms, is being developed together with Thales Alenia Space, the leading satellite manufacturer with unmatched expertise in developing and manufacturing constellations. Each satellite in the LeoSat constellation utilizes **optical inter-satellite links (ISLs)** to connect to the satellites around it, creating fiber-like symmetric connectivity with speeds of up to 1.6 Gbps and even 5.2 Gbps where needed. Customers use their LeoSat terminal to connect to the nearest satellite from where the data is routed onwards by On Board Processors (OBPs) through LeoSat's space-based optical backbone until the data reaches the destination satellite which connects with the customer's destination terminal. Contrary to bent-pipe HTS solutions, gateways are not a pre-requisite for LeoSat to operate its network. For customers, this unique use of technology allows for premise-to-premise connections with no terrestrial touch-point in-between and sets a new bar for high-speed networks.

Satellites

Each satellite in the constellation supports:

- 10 Ka-band steerable antennas, each providing up to 1.6 Gbps of symmetrical data connectivity
- Two steerable high-performance antennas, each providing up to 5.2 Gbps of symmetrical data connectivity
- 4 optical inter-satellite links

Availability

- 2019 Launch of two Early Birds offering GigaByte Store and Forward Services
- 2021 Start of launch of the constellation offering real-time, point-to-point connectivity with coverage growing from the Poles to the Equator on completion
- 2022 Full Worldwide Service Available



For more information on LeoSat Enterprises, please visit our website or follow us on social media