

LOW EARTH ORBIT SATELLITES

Satellite Technology & Alignment with BC Connectivity



Connectivity through satellites is not new; what's new is the emergence of broadband internet services through Low Earth Orbit (LEO) satellite technology. LEO satellites are smaller and cheaper to manufacture than other satellites, and orbit closer to earth in multiple orbital planes, so they provide better coverage and lower latency services.

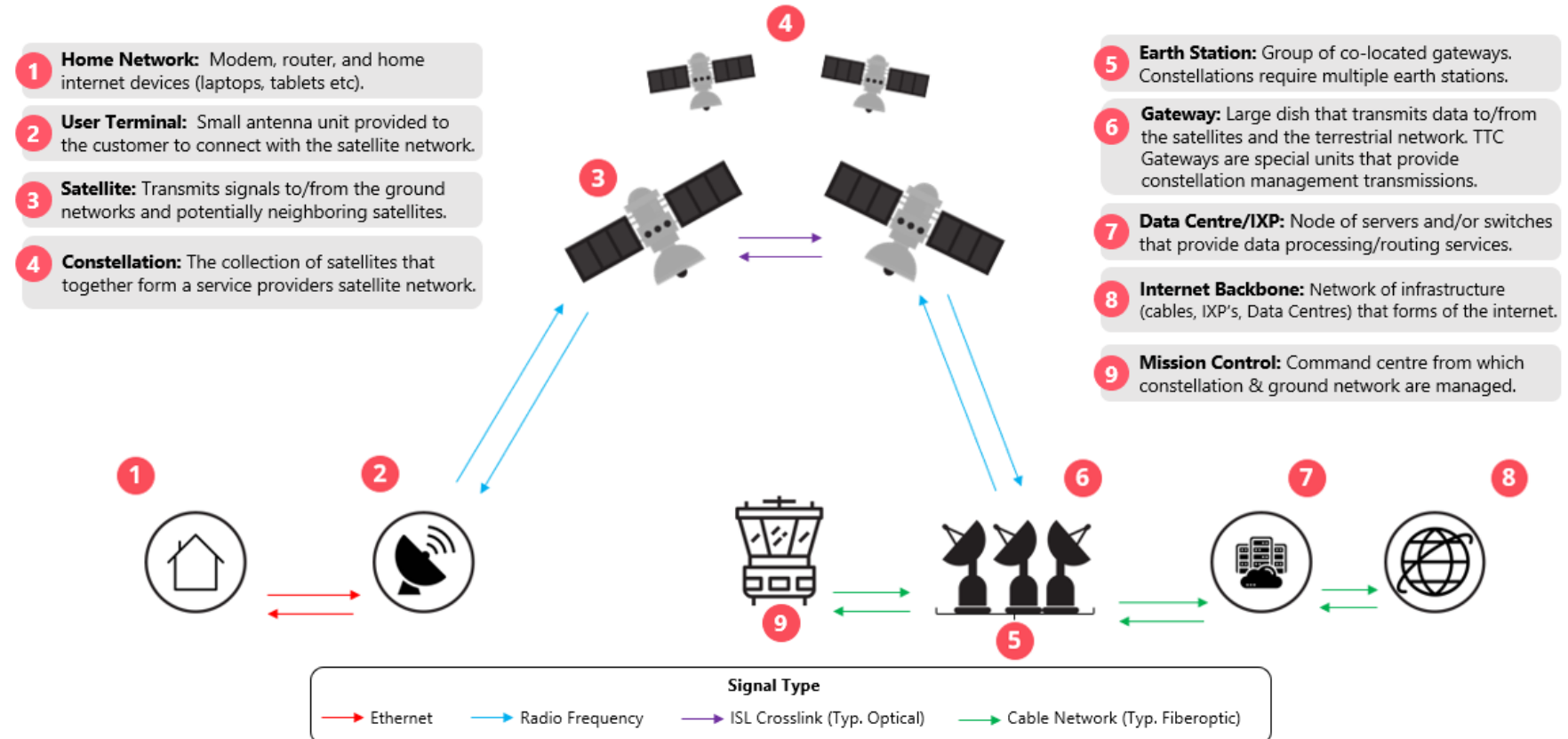
LEO satellite providers are on a mission to connect unserved and underserved communities in rural areas to broadband internet services. As LEO broadband service is an emerging technology, different service providers present different levels of risk and opportunity in the short, medium, and long term.

SATELLITE ECOSYSTEM FUNDAMENTALS

Satellite service is provided through satellites which transmit through radio waves a signal to an antenna (dish) on a residence or business. Most communications satellites are located above 1,000 km. LEOs are typically located below that line. This allows to limit delays inherent to transmission and associated latency that characterize traditional satellites which are further from Earth's surface.

The LEO broadband landscape is currently being led by SpaceX and OneWeb, each of whom are developing direct-to-consumer business models, wherein each user has their own user terminal they use to connect to the broadband internet services. Following players include Telesat. Telesat has adopted a community aggregator business model, where users are connected through a local network to a community terminal.

LEO Broadband System Architecture



ALIGNMENT WITH BC CONNECTIVITY

Satellite technology is an effective method of serving areas with low-population density, or that are hard to reach. LEO satellites do not, however, represent a fix-all solution to connectivity issues.

What will it solve?

- Connectivity in remote and rural areas where there is no other options;
- Connectivity in difficult to access areas, even if close to urban centres;
- Deployment in small communities with small bandwidth needs.

What will it not solve?

- Transport needs in remote areas;
- Mobile deployment;
- Cell access in underserved areas;
- Resilience in areas served by only one broadband provider.

For more information on connectivity in BC, visit our [website](#) or email us at ConnectedCommunitiesBC@gov.bc.ca.



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