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Q:- What is meant by space internet? How does it help in safe, secure and reliable communication? Discuss its advantage and latest applications.

Recently, the world's leading private company in space technology Space X has launched the Starlink Network in Lower Earth Orbit (LEO) aimed at providing low cost and reliable space-based internet services to the world.

Currently, fibre optic cables or wireless networks through mobile towers provide internet services.

HELP IN SAFE, SECURE AND RELIABLE COMMUNICATION:

1. Earlier Space Internet is being used in Geostationary Earth orbit. $\rightarrow 35,786 \text{ km}$ over the earth surface.

1.1 Its Coverage is larger. One satellite can cover third of the planet, but its latency is high (approx) 600 milliseconds.

2. The present Space internet is placed in LEO, hence it extends upto 2000 km above the earth surface.

2.1 Reduced latency $\rightarrow$ helps in fast and uninterrupted connection.

3. It doesn't use fibre cable or towers which can be easily attacked by Cyber attackers.

3.1 Hacking is impossible due to its cluster of satellite connection.

ADVANTAGES & LATEST APPLICATIONS:-

4. Reduced latency:- Bring the lag down to 20-30 milliseconds.

4.1 Its lag in time to transfer helps in fast-communication network and uninterrupted data sharing.

2. More Viable:- The signals from satellites in space can overcome obstacles faced by current networks like fibre or wireless networks easily.

2.1 In the remote areas or places with difficult terrain → traditional ways to deliver internet → not feasible.

2.2 The Space internet easily generate communication.

Through this kind of advantages, it is useful for the Internet of Things (IoT) applications. ^{Davidson Technology} In the future enhancement of automatic cars sector easily share the data in a frequent manner.

It can also helpful for the military and border management area which are unable to surveillance through GPS contact from traditional wireless network. In the time of disasters where normal terrestrial signals failure, the Space internet will helpful to communicate.

Thus for the Industrial revolution 4 (IR4) era, the Space Internet is very much helpful for the people at low cost and efficiency high in ITC.