**ASSIG 4 TE 303 - ADS19A00110Y**

**Why do we say the functionality of GEO and MEO satellites are similar?**

Answer:

GEO is a satellite that appears to be located at a fixed point in space when viewed from the earth’s surface. Satellites located in geosynchronous orbit move in time with the rotation of the earth. A geostationary orbit, also referred to as a geosynchronous equatorial orbit (GEO), is a circular geosynchronous orbit 35,786 kilometers (22,236 miles) in altitude above Earth's Equator (42,164 kilometers in radius from Earth's center) and following the direction of Earth's rotation.

MEO is a communications satellite in orbit roughly from 1,600 to 15,000 miles above the earth. Revolving around the earth, MEO orbits are higher than low-earth orbit (LEO) and lower than geostationary (GEO) satellites. Widely used for navigation systems such as GPS and GLONASS, MEO satellites can take from two to 24 hours to orbit the earth.

Similar Functionality between GEO and MEO:

They are both similar due to their movements. The satellites orbit around the Earth at the same rate as the Earth rotates so that the satellites are over the same spot-on Earth all the time. This allows them to collect a continuous stream of data for one location so that "movies" of the data can be made. GEO is a circular geosynchronous orbit 35,786 kilometers (22,236 miles) in altitude above Earth's Equator (42,164 kilometers in radius from Earth's center). it does have its downsides. These are the most expensive satellites to procure and, due to the curvature of the Earth, coverage cannot be provided above or below plus or minus 70 degrees latitude and MEO is a communications satellite in orbit at a lower altitude than GEO, usually occupying the space between 5,000 and 12,000 km (3,100 – 7,500 miles). Their relative proximity to Earth means they achieve far lower latency than GEO units, making them suitable for high-speed telephone signals and similar missions.

**Name the three satellite services and explain the one that is not commonly used in Ghana.**

Answer:

The three satellite services are;

* Fixed satellite service (FSS)
* Broadcast satellite services (BSS)
* Mobile satellite service (MSS)

The one commonly used in Ghana is the;

* Broadcast satellite services (BSS): It is a radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. They offer high transmission power for reception using very small ground equipment. Broadcast satellite services is best known for direct to customer television and broadband applications such as DIRECTV (AT&T). It is a system of content distribution using broadcast signals relayed to and from communication satellites, which are then received by parabolic antennae better known as satellite dishes. The signals are then passed through a low-noise block converter for conditioning. A satellite receiver decodes the incoming signals and presents them to the user through standard television or satellite radio. In the case of satellite television, the signals coming in are encoded and digitally compressed so as to minimize the size and so that the provider can bundle more channels into the signal. The user can then select which channel to decode and view. The compression used for satellite digital TV is often MPEG compression so that quality can be retained.