GPS-Global Positioning System

# **Introduction**

GPS abbreviation is Global positioning system. Global stands for Earth, positioning indicates the location of points in earth surface, System tells the entire monitoring structure. So, GPS is the system which helps to find locations on earth’s surface.

Till now, there have been 32 satellites launched in 6 orbits for GPS tracking above 20200 km. One satellite travels around the orbit at speed of 11,000 km/hr. Each satellite travel around the orbit 2 times/day. Satellite devices transfer data to GPS receivers on the earth at the speed of light. It uses an atomic clock.

It works in the ***Trilateration Mechanism***. The GPS receiver receives data of longitude value, latitude value, altitude value, and time from the visible satellites at orbits.

Satellites

B’

A’

GPS Receivers

C’

# **GPS segments**

* Space segment (Satellites)
* Control segment (Ground Station)
* User segment (GPS Receivers)

## **Space segment**

Each satellite broadcast navigation messages with exact position, clocks, Status, and orbits details. Satellites are solar powered with nickel cadmium buffer with back up batteries to overcome the shadow of earth.

Electrical and fuel controlled roc