

GPS

- It was discovered that because of the Doppler effect, the satellite's exact position around the globe could be accurately calculated.
- GPS was built and is currently maintained by the Department of Defense. Developed during a brainstorm by the Pentagon in the 1970s, it became fully operational in the mid-1990s.
- The main principle behind GPS is that speed X time = distance. EM waves travel consistently at the speed of light. Satellites are in geosynchronous orbits.
- The exact location of the receiver can be determined by triangulation, where the location is the interception of several distances from the satellites.
- Atmospheric effects, natural and man-made jamming sources, and other electromagnetic waves can decrease the accuracy of the GPS system.
- Special and General relativity predict issues with the atomic clocks within GPS satellites that can be easily remedied.
- Purpose is to aid the demand for information required by the modern military commander in a fast-paced electronic battlefield
- GPS military applications include navigation, targeting, tracking, rescue, bomb and missile guidance, map updating, and facility management.
- GPS helps ensure the safety and productivity of various applications and those who use them in the world today.
- GPS is used to great effect in space, aeronautics, railways, automotive transportation, the environment, disaster relief, and even agriculture.

