

#### **SNS COLLEGE OF TECHNOLOGY** (AN AUTONOMOUS INSTITUTION)

Approved by AICTE & Affiliated to Anna University Accredited by NBA & Accrediated by NAAC with 'A++' Grade, Recognized by UGC Saravanampatti (post), Coimbatore-641035.



## **Department of Biomedical Engineering**

#### Course Name: 19BM0302 & WEARABLE TECHNOLOGIES Intel 3

# **Topic :** Wearable Devices with Global Positioning System **Semester :6**



# **INTRODUCTION TO GPS**



GPS, which stands for Global Positioning System, is the only system today able to show you your exact position on the Earth anytime, in any weather, anywhere.

The three parts of GPS are:

- ➤ Satellites
- Receivers
- ➢ Software

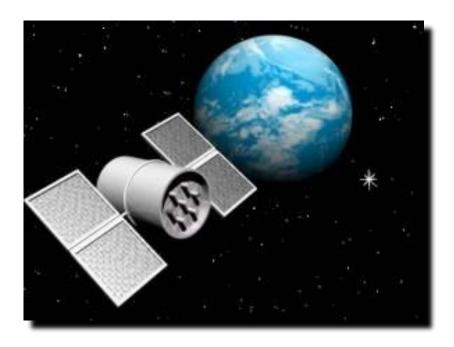








There are quite a number of satellites out there in space. They are used for a wide range of purposes: satellite TV, cellular phones, military purposes and etc. Satellites can also be used by GPS receivers.



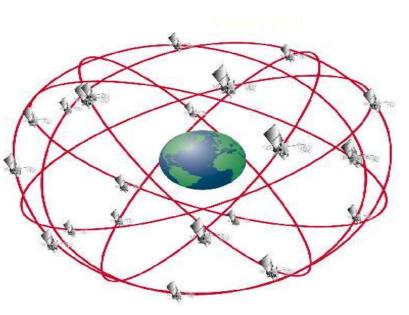
Vision Title 3



## **OPERATION OF GPS**



The GPS Operational Constellation consists of 24 satellites that orbit the Earth in very precise orbits twice a day. GPS satellites emit continuous navigation signals.



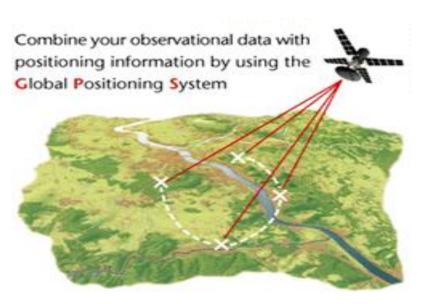
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## **GPS COMMUNICATION**



GPS units are made to communicate with GPS satellites (which have a much better view of the Earth) to find out exactly where they are on the global scale of things.



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## **IMPORTANCE OF WEARABLE TECHNOLOGY THROUGH GPS**



Each GPS satellite transmits data that indicates its location and the current time. All GPS satellites synchronize operations so that these repeating signals are transmitted at the same instant.

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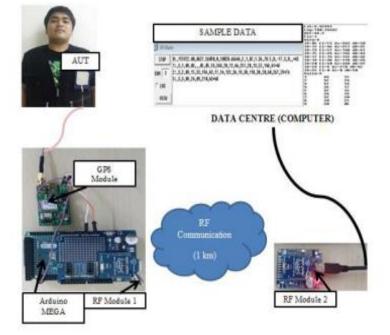
Physically the signal is just a complicated digital code, or in other words, a complicated sequence of "on" and "off" pulses.



#### **GPS & WEARABLE ANTENNA**



During the past decade, location tracking/monitoring systems have been actively developed for tracking children, elderly, disabled [1-4], vehicles and etc. Specifically, human location tracking systems are important to ensure human safety and to efficiently initiate search and rescue in the event of emergencies.







#### **HUMAN BODY TRACKER**



