**Magnetic field sensing**

we will use four magnetometers (sensors) and we will put the electromagnets on our fingernails

the idea of magnetic field sensing is very similar to gps

the idea of gps

first step : calculate distance from mobile (device that has gps) to the satellite

second step: triangulation (calculation of distance of destination )

in magnetic field sensing is very similar to this but instead of tracking phone we will track electromagnets and the satellite in the sky is the sensor on the board

the possible position of the electromagnet will be a sphere and its center is the sensor .we will do this to the other 3 sensors on the board . the intersection of the four spheres tells us where the electromagnet in the 3d space relative to the sensor.

Some issues

Noise : earth magnetic field and electrical noise .

We use band pass filter to eliminate the effect of the earth magnetic field .

Useful links

Pdf : <https://ubicomplab.cs.washington.edu/pdfs/finexus.pdf>

Video: <https://www.youtube.com/watch?v=9dFHmUjWW14>