

Indoor position system

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GPS

- Global positioning system
- Multiple devices
- Does not work indoors

IPS

- Indoor position system
- Works indoor
- Locate people, objects
- Track objects
- Guidance

Techniques

- Infrared
- Ultra-sound
- Radio frequency
 - RFID, WLAN, Bluetooth
- Magnetic positioning
- Vision based
- Audible sound

WLAN

- No extra hardware
- WLAN widely used (mobiles, tablets)
- Not very accurate (few meters)

PLAN

- Make an Android app and map some area (third floor)
- App should be built in a way that allows code offloading
- Test app with Galaxy S2 without offloading, measure performance and battery life
- Do the same measurements with code offloading and compare results

Code offloading

- COMET is a distributed runtime environment aimed at offloading from smartphones.
- We use it to delegate most of our computations to server.
- CyanogenMod is an aftermarket firmware for Android phones.

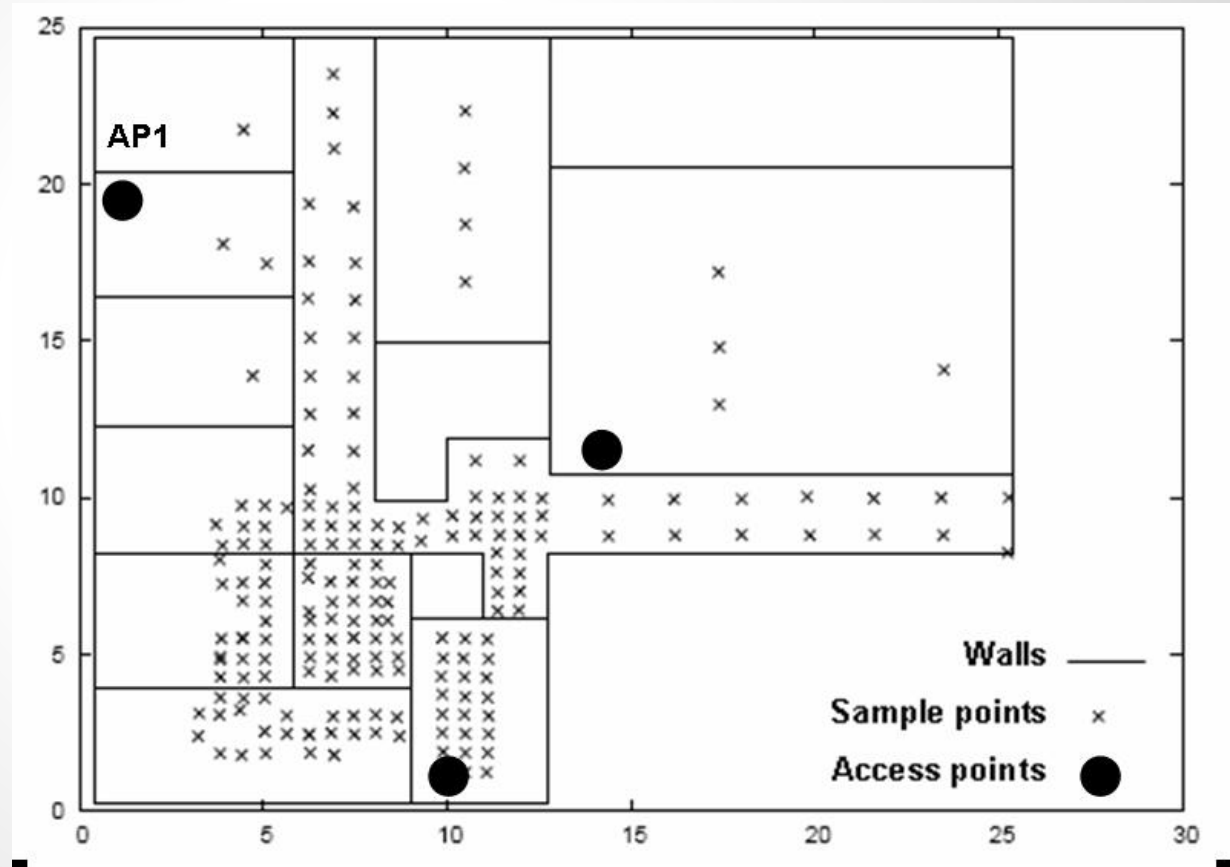
Techniques

- Triangulation
- Fngerprinting

- Proximity
- Vision analysis

Fingerprint technique

- offline training
- online positioning



Triangulation

