May 6, 2008

Reading:

- Veljo Otsason, Alex Varshhavsky, Anthony LaMarca, Eyal de Lara. Accurate GSM indoor localization. UbiComp 2005.
- J. Krumm, K. Hinckley. The Nearme wireless proximity server. UbiComp 2004.
- (Adaptation) Yi-chao Chen, Ji-rung Chiang, Hao-hua Chu, Polly Huang,Arvin Wen Tsui. Sensor-assisted Wi-Fi indoor location system for adapting to environmental dynamics. ACM MSWIM 2005.

Group discussion

A hypothetical company, called WiDontFly, has deployed some 4,000 WiFi access points throughout Taipei city. WiDontFly gets its revenue by charging users a monthly, daily, or hourly WiFi access. Unfortunately, WiDontFly has not been able to sign up enough customers to sustain its business. We would like to help WiDontFly leverage its metro-scale WiFi network to get additional revenue source from location-based add-on services. This involves designing a metro-scale WiFi localization system and creating novel location-based applications on top of it.

- Can you think about some novel location-based applications, on top of this metro-scale WiFi location system, to increase revenue for WiDontFly? Please note that many of good services on the Internet are free to users but get revenue from advertisements.
- What are the technical challenges for building a metro-scale WiFi localization system? Describe them in terms of calibration and positioning phase. Note that although WiDontFly has 4,000 WiFi access points, but they have limited coverage and are a small subset of overall home or business WiFi APs in Taipei citiy (numbered in 80,000+).
- Do you have any solutions to the technical challenges?
