Mobile and Ubiquitous Computing

Revision Class

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Module overview

- Ubiquitous computing paradigm
- RFID
  - Principle, middleware, network services
- Locations Sensing
- Software
  - Mobility, services
- Cross cutting theme
  - Privacy, security and trust
RFID

• Operating principle
• System components
  – reader, tags
• Middleware
  – Role
    • Single API, traffic reduction
  – Mode of operation
    • event based, filtering, aggregation
RFID

• Network services
  – ONS discovery
  – EPC DS (role, principle of operation)
  – EPC IS
    • Profiles
    • Containment
Location Sensing

- Location sensing techniques
- Properties/characteristics of different techniques
- Examples: GPS, proximity tags, EMF scene analysis
- Sensor fusion (how to)
Papers

• Mobile IP
  – Compare against traditional IP
  – Issues of managing mobility

• Service discovery
  – Characteristics
  – Examples of approaches

• Placelab
  – Techniques
  – Accuracy/advantages
Privacy, security, trust

• Issues
• Challenges
• Questions to address
  • Initial entitlement:
    • Allocation of property rights
    • Who should get the initial right to control the information generated by location sensing?
  • Coercion and choice:
    • If you want discount you will get the technology
  • Societal overrides:
    • When does society, regardless of your preference, get access to the data anyway?