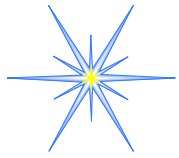
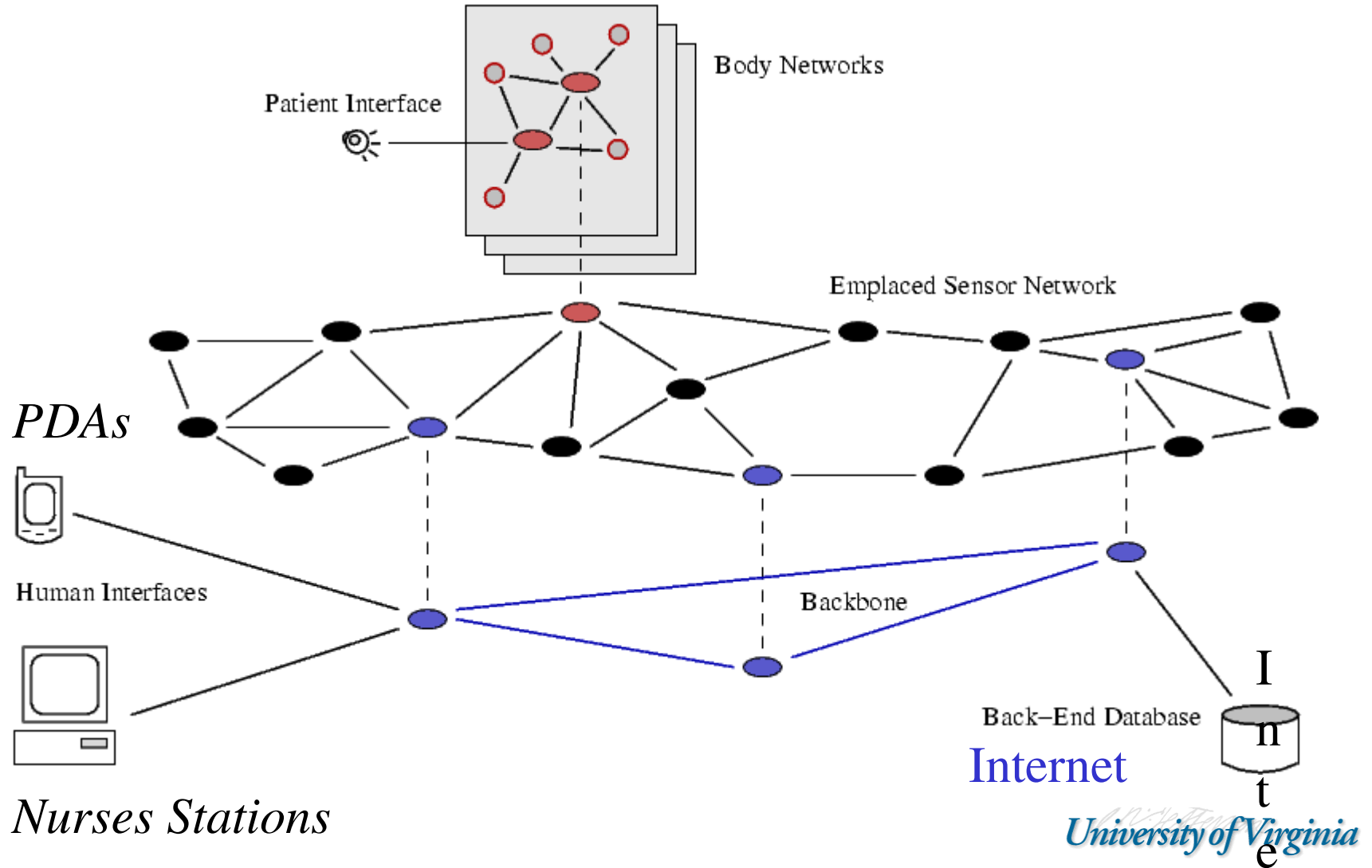


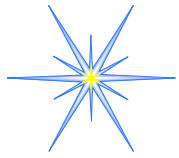
# Sensor Networks and Mobility

Professor Jack Stankovic  
Department of Computer Science  
University of Virginia

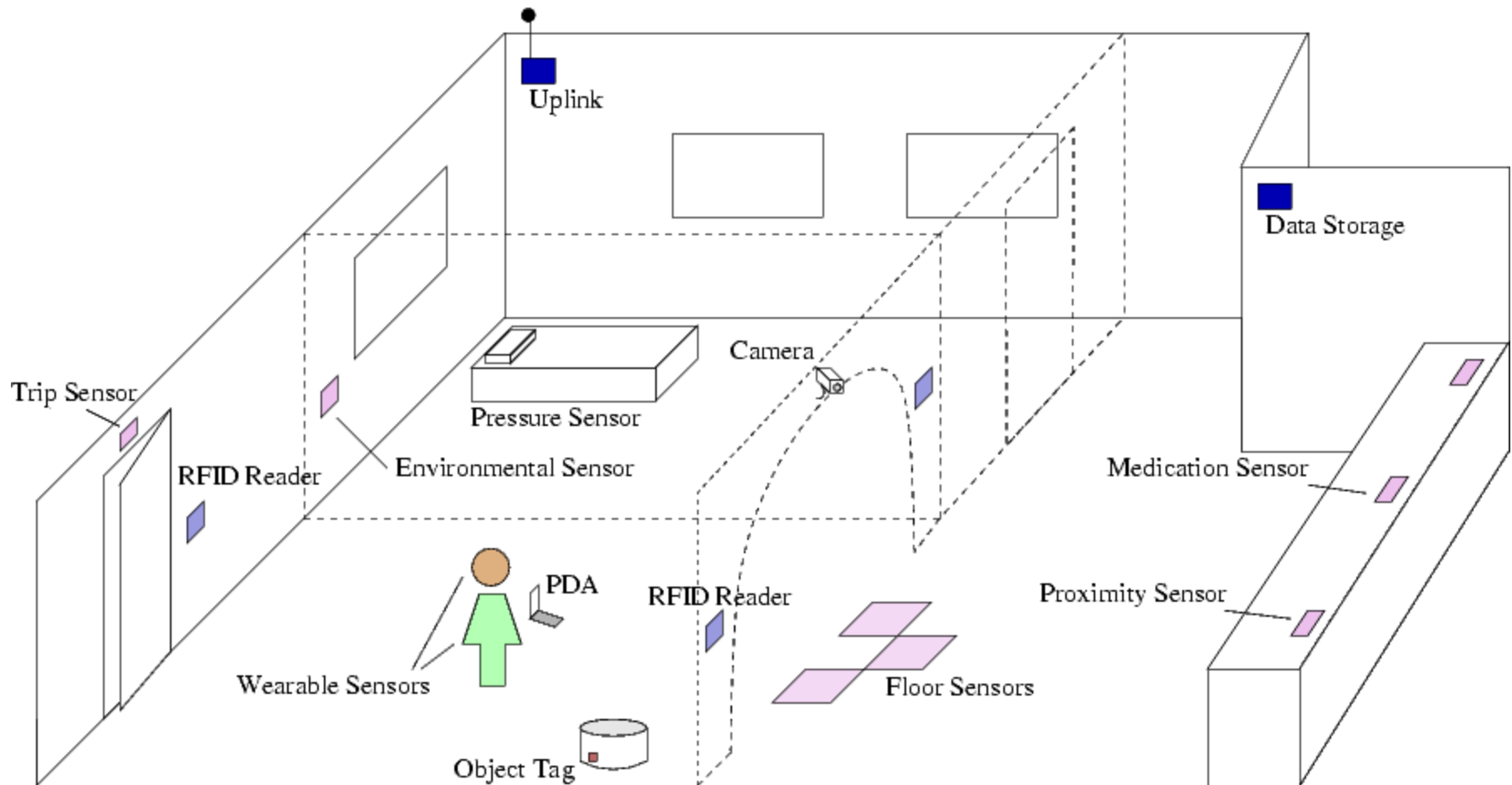


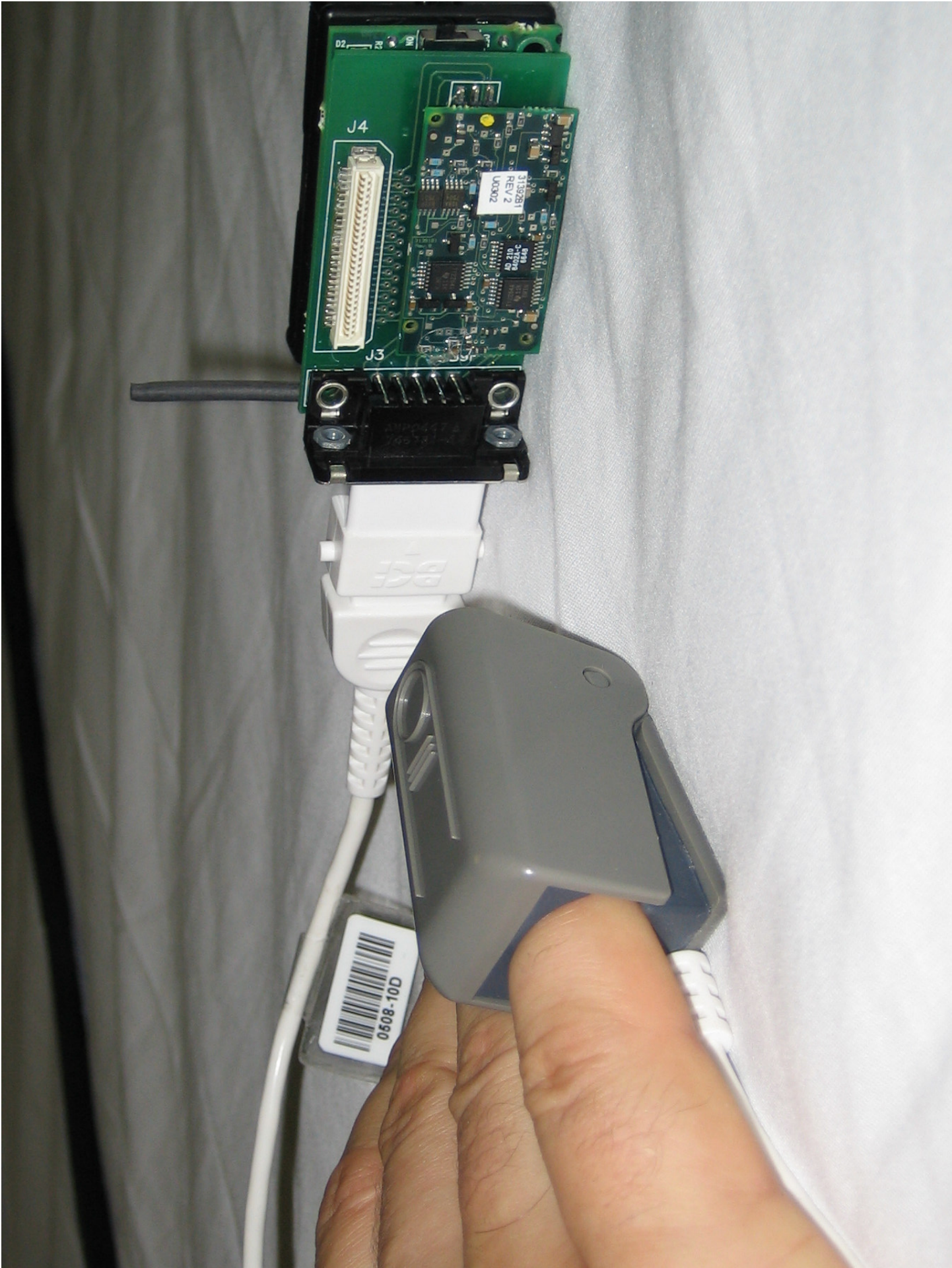
# Assisted Living and Residential Monitoring - AlarmNet



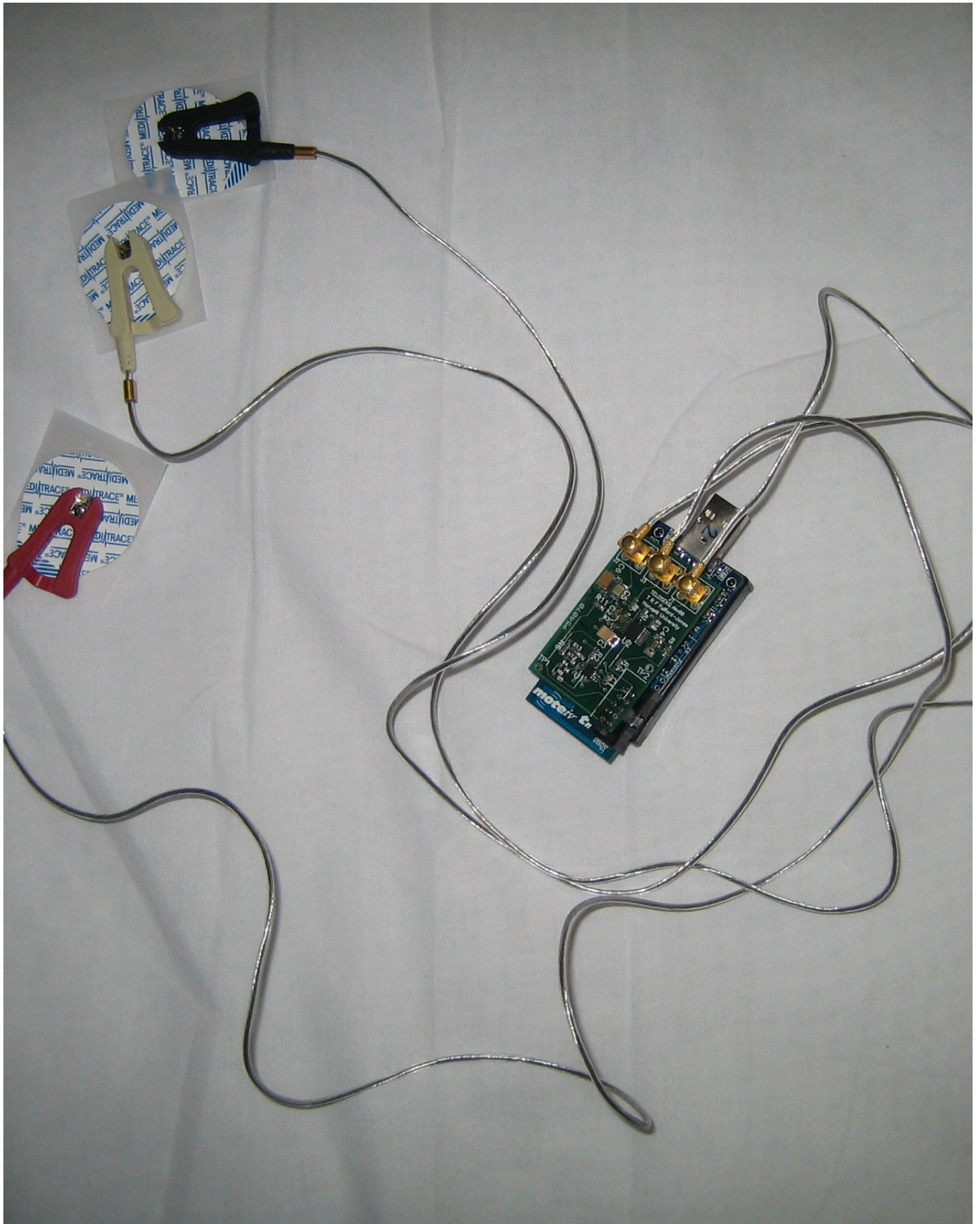


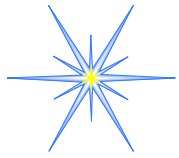
# Smart Living Space





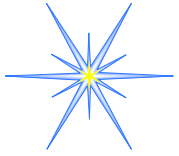






# Real-Time Display

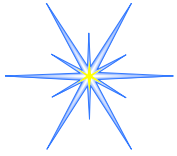




# Sensors Everywhere

- Cell phones with sensors
- PDAs with sensors
- Laptops with sensors
- Workstations with sensors

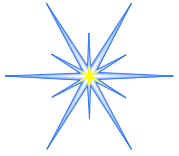
} *Mobile*



# Requirements (1)

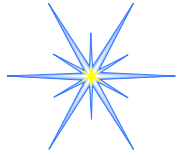
- Real-time
- Location based
- Discontinuous operation
- In network aggregation
- 2 mobile end points
- Spectrum coordination
- Energy aware





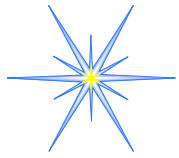
## Requirements (2)

- Security
- Privacy
- Multi-cast and anycast
- Ad hoc formation
- Reliable and available



# Fundamental Principles

- Asymmetric Placement
- Adaptation via Reflection
- Spatial-Temporal
- Overlays
- Self-Healing

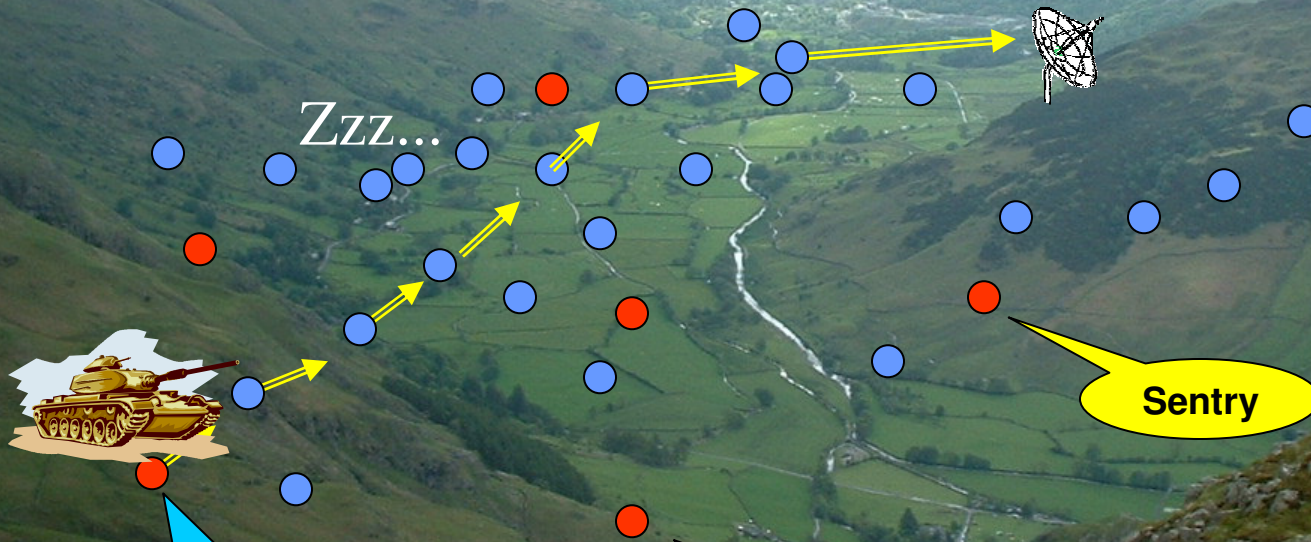


# Creating This Today

- New architectures based on fundamental principles
  - IP for Internet
  - SP for sensor network
  - MP for mobile network
  - Maybe an ISMP
- Allow for "sensing"

# VigilNet

1. An unmanned plane (UAV) deploys motes



3. Sensor network detects vehicles and wakes up the sensor nodes

2. Motes establish a sensor network with power management