HEALTHNET
TEST CASE DEMO
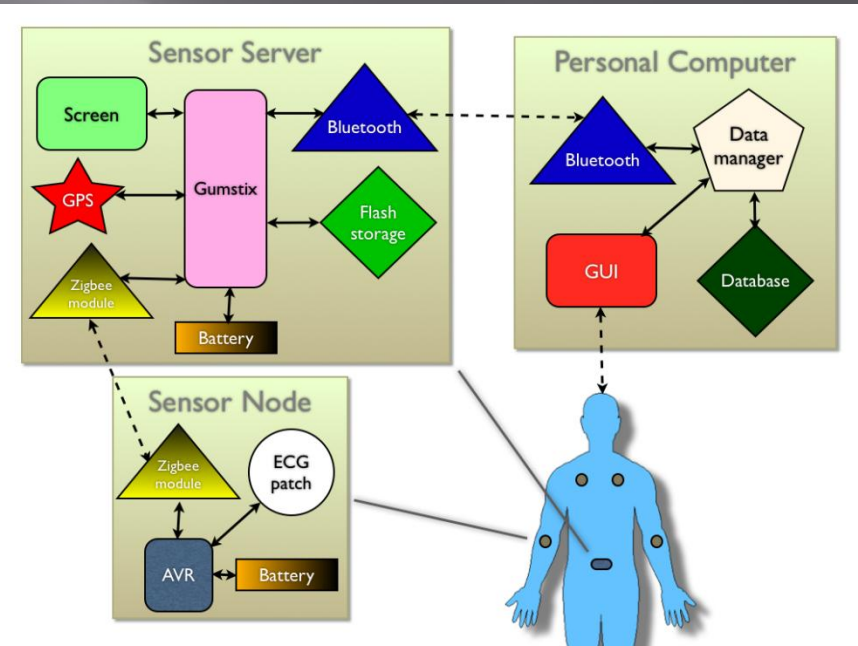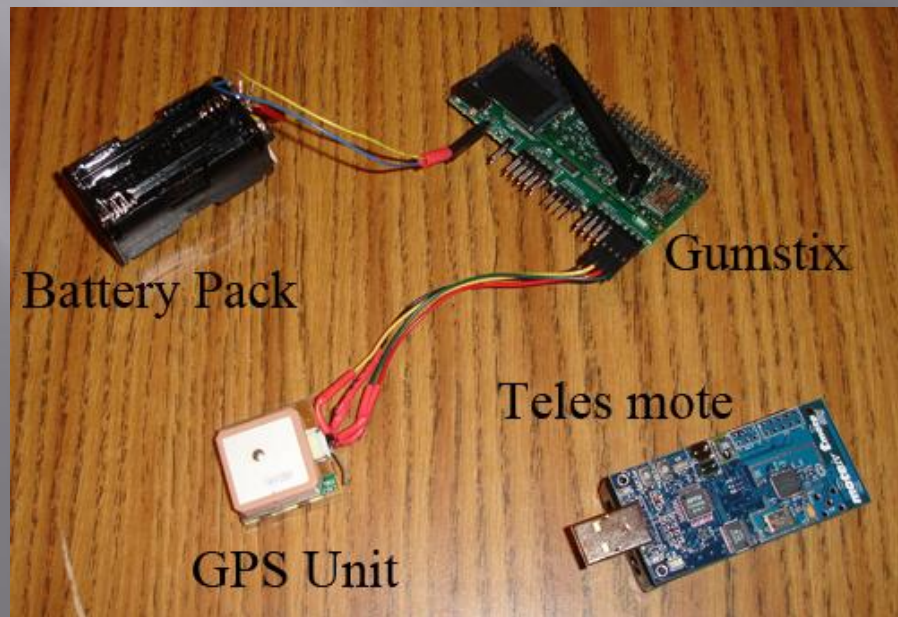## APRIL 02, 2008

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System Architecture

- Sensor Nodes
  - Provides various data to the sensor server
- Sensor Server
  - Collects data from the nodes and stores it in the database to be sent to the computer
- Computer (Not pictured)
  - Displays the data received from the sensor server in a user friendly manner

Test Cases

- **Sensor Nodes**
  - Data Transmission (Reliability)– Test for dropped packets and re-transmits.

- **Sensor Server**
  - Startup (Reliability)– Devices activate in a coordinated fashion. Data log system starts cleanly. Test repeated startup/shutdown sequence.
  - Pairing with computer/Data upload (functionality)– Test connection between computer and Sensor server; Specifically, try the cases of sensor server power failure, computer power failure, Bluetooth interference.
  - Test aggregating data (Functionality)- we want all data to be transmitted well - collect two or more types of data and upload all of them fault-free.
  - Shutdown (Reliability)– Test clean shutdown case (Sensor server issues shutdown commands to motes), power failure recovery (of motes), and salvage of partial data in gumstix power failure.
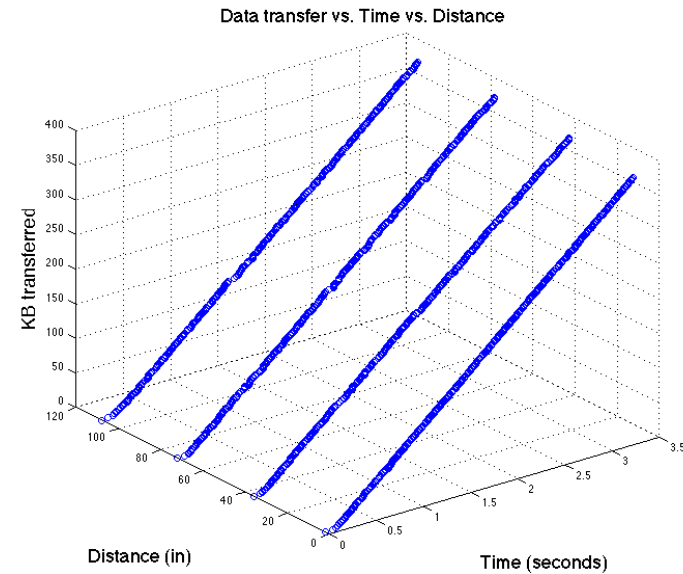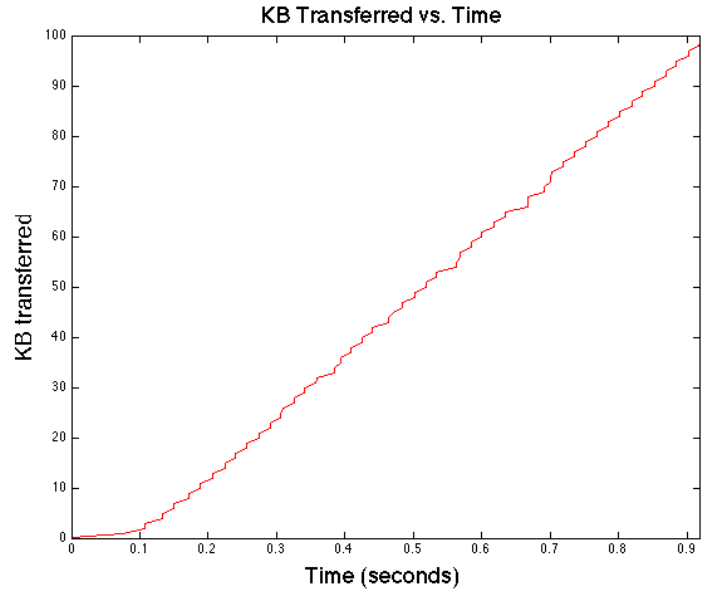
- **Computer**
  - Error catching (Reliability) – Test computer side code for correct response to corrupted or illegal data.

Metrics

- Transmission rate (Sensor server – Computer)
  - Time transmission of datasets of known sizes. Divide time by data set size.
  - Data must upload in a timely manner.
  - Units: s
- Amount of data that can be stored on sensor server
  - Run sensor server until memory is full, record data set size.
  - Document maximum time sensor server can run between uploading to a computer.
  - Units: MB or hr
- Battery life (nodes and sensor server)
  - Run unit till power failure.
  - Average battery life must be documented for users.
  - Units: hr

Test Case Result

Pairing with computer/Data upload

Slope (bandwidth): 114.5 KB/s