Pervasive Computing Research for Successful Aging

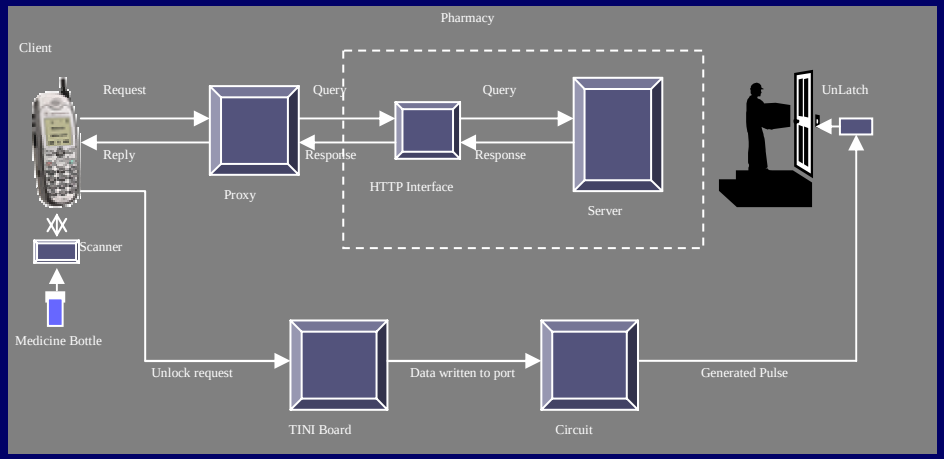
Sumi Helal, Ph.D., William Mann, OTR, Ph.D.
Rehabilitation Engineering Research Center (RERC)
University of Florida, Gainesville, FL-32611, USA

January 2004

University of Florida Smart House Initiative

Snapshots of the Smart House

Early Prototyping



Pervasive Technology for Smart House



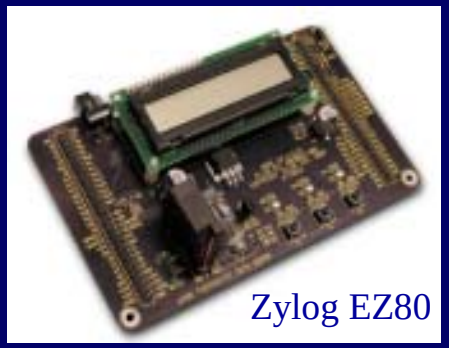








Technology for Pervasive Computing

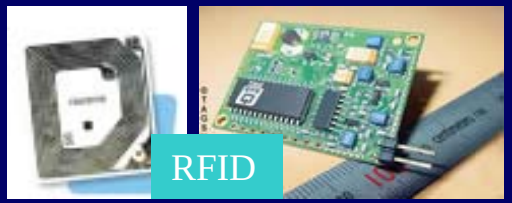

Zylog EZ80


SNAP


Ultrasonic Pilot


Ultrasonic Beacon


Systronix STEP Board


RFID


iButton

Wireless Sensors

Fig. 36. weC Mote.

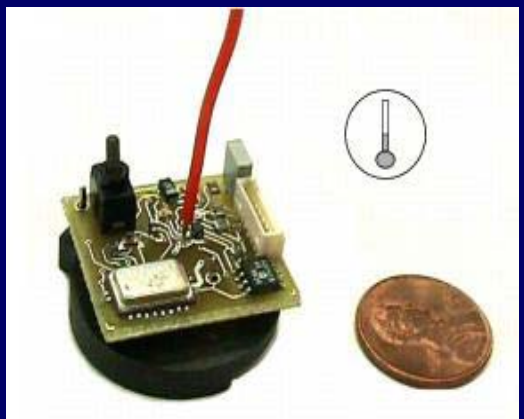


Fig. 35. First Mini RF Mote.

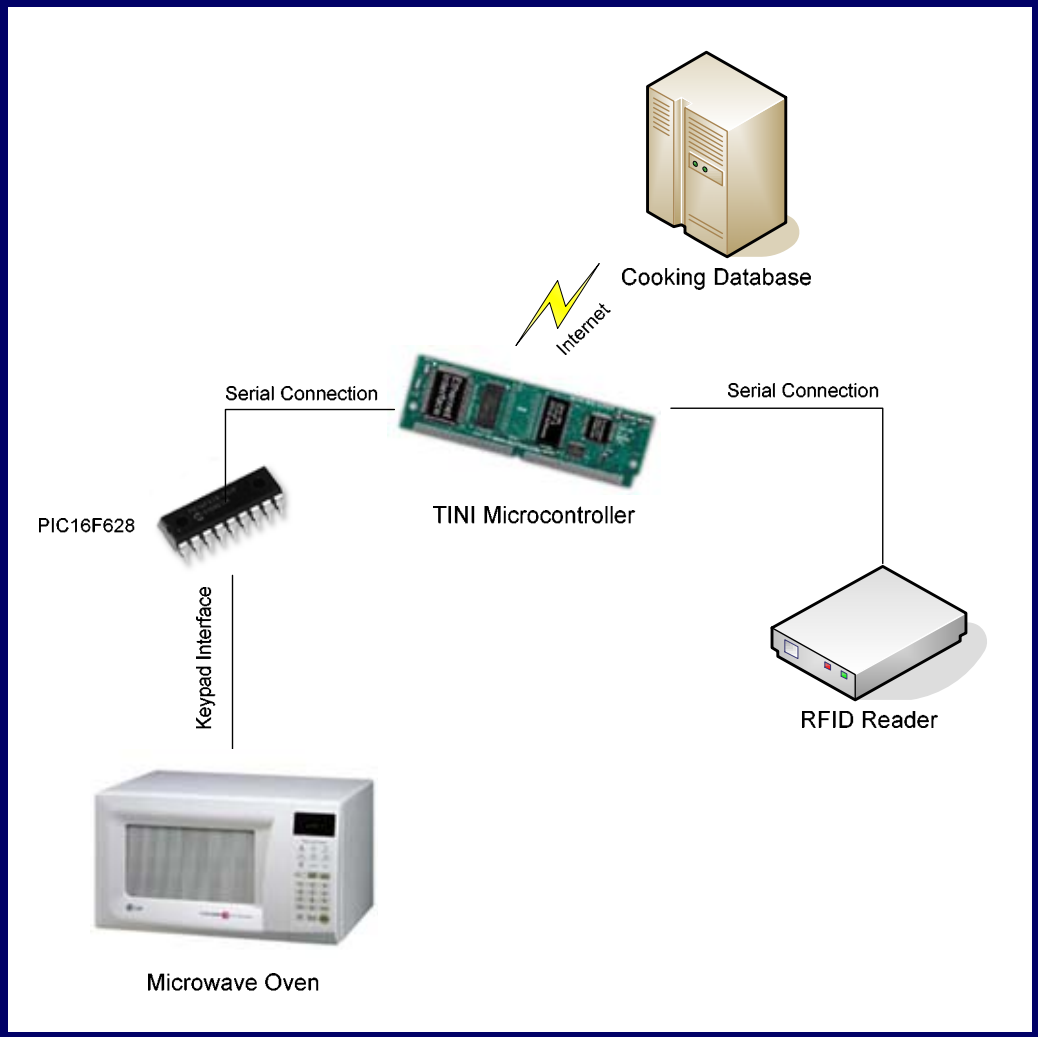
Applications

- Locating elders & objects (e.g. Car in parking garage, TV remote)
- Home appliances and device control (e.g. switching functions & A/C control)
- Smart Microwave Ovens, Talking Food, etc
- Alerts and alarms (e.g., medicine reminders & postal mail notification)
- Grocery shopping assistant
- Weather Awareness

Applications

- Integrated indoor/outdoor location tracking
- Map maker and navigation
- Security Alerts (doors, windows, water leaks)
- Access Control (lock/unlock doors, windows)
- Next generation Lifeline
- Home Entertainment
- Push to Eat (and other automated services)
- Dictation
- Others...

The SmartWave Project



Gator-Tech Smart House
June, 2004