User Interaction: Ubiquitous Computing

Asst. Professor Donald J. Patterson
INF 133 Fall 2010

Application Themes

- Context-aware computing
  - Sensed phenomena facilitate easier interaction
- Automated capture and access
  - Live experiences stored for future access
- Toward continuous interaction
  - Everyday activities have no clear begin-end conditions

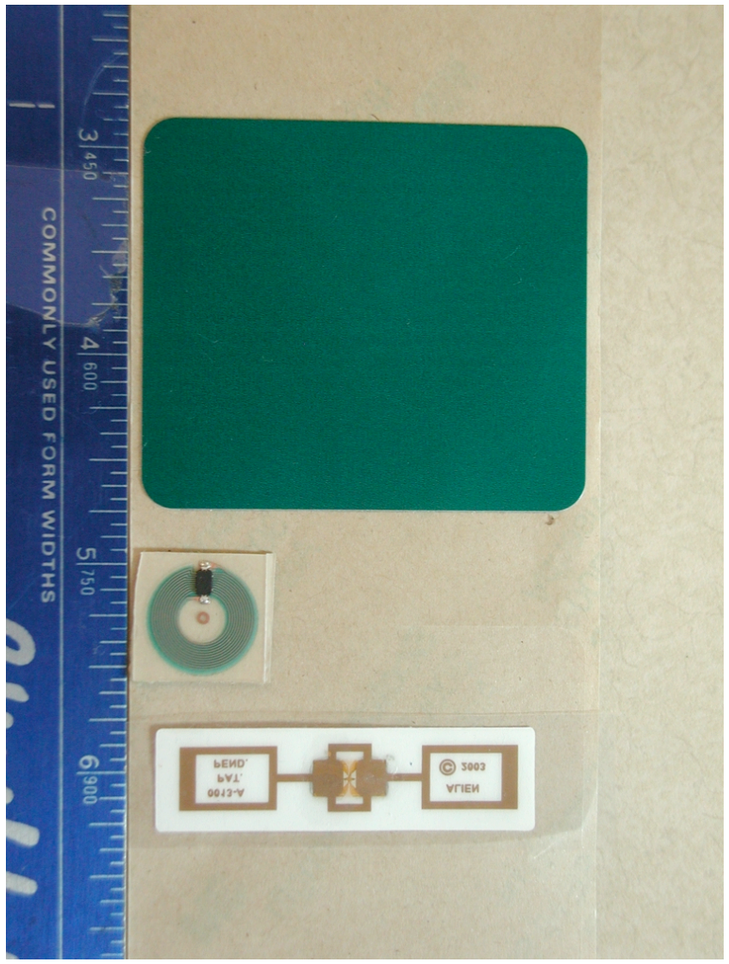
New Opportunities for Theory

- Knowledge in the world
  - Ubicomp places more emphasis on the physical world
- Activity theory
  - Goals and actions fluidly adjust to physical state of world
- Situated action and distributed cognition
  - Emphasizes improvisational/opportunistic behavior versus planned actions
- Ethnography
  - Deep descriptive understanding of activities in context

Simultaneous Multi-Scale Input and Output

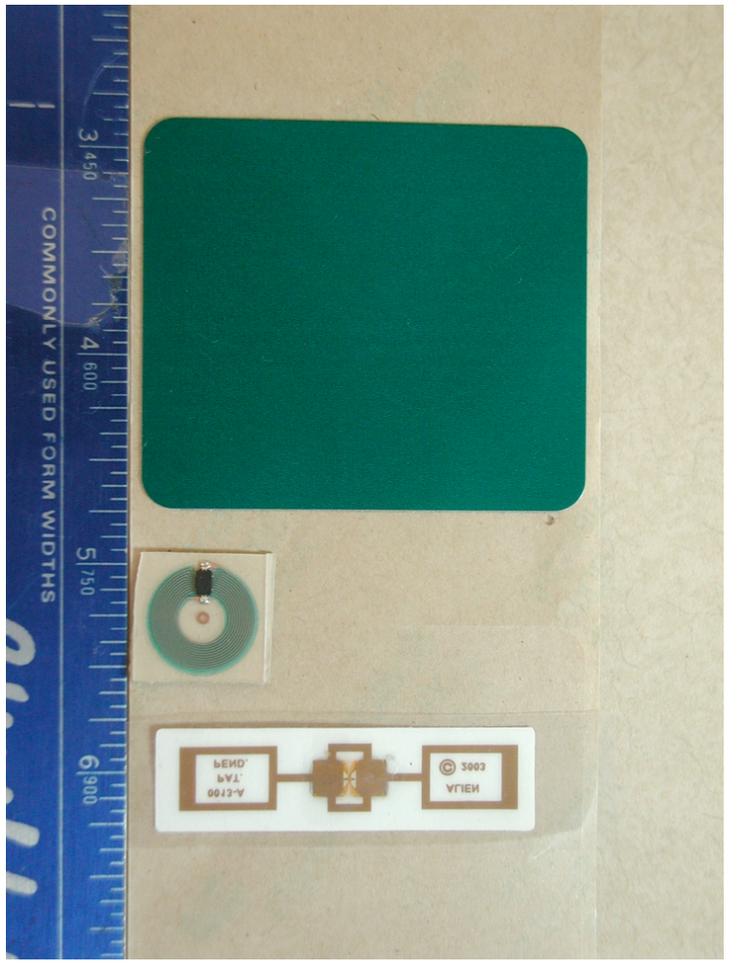
- Screens
  - Of many sizes
- Distributed in space, but coordinated

RFID



- Radio Frequency IDentification tags
  - are small, durable, cheap
  - have no batteries
  - are designed to replace barcodes
  - GUID

RFID



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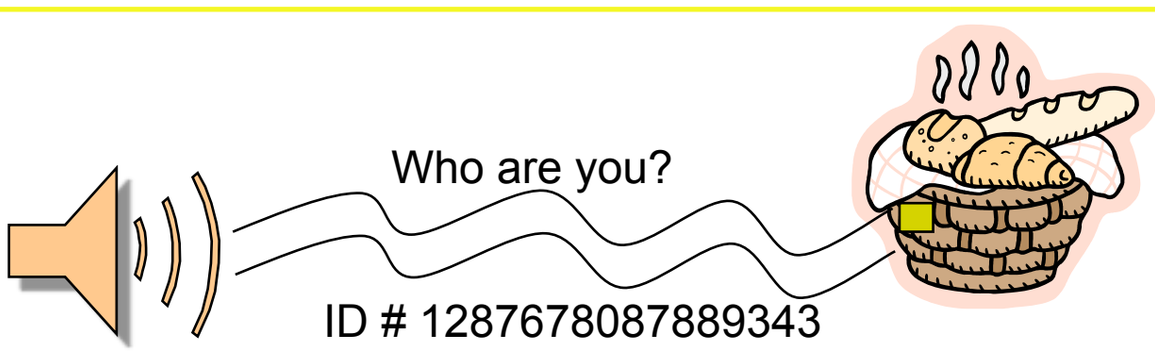
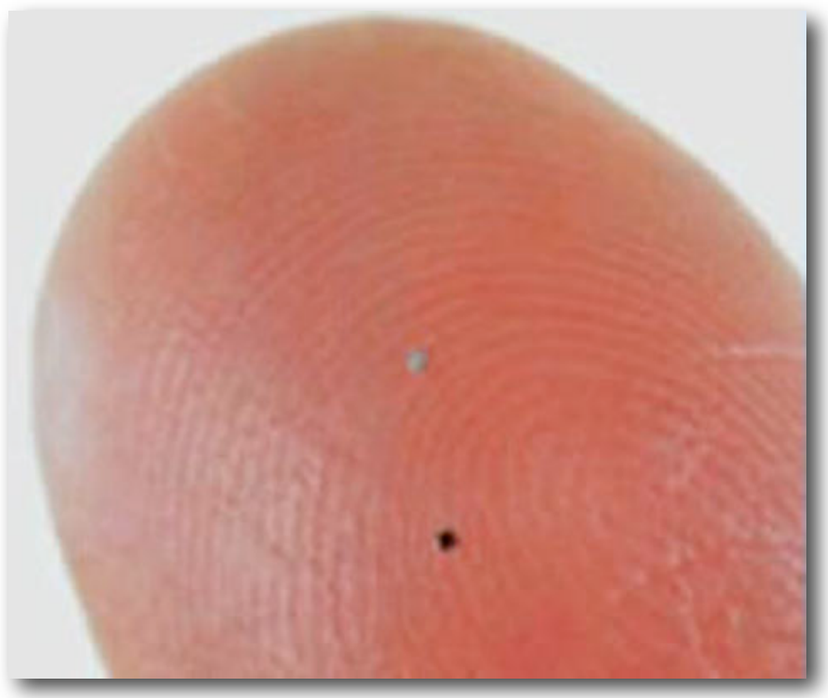
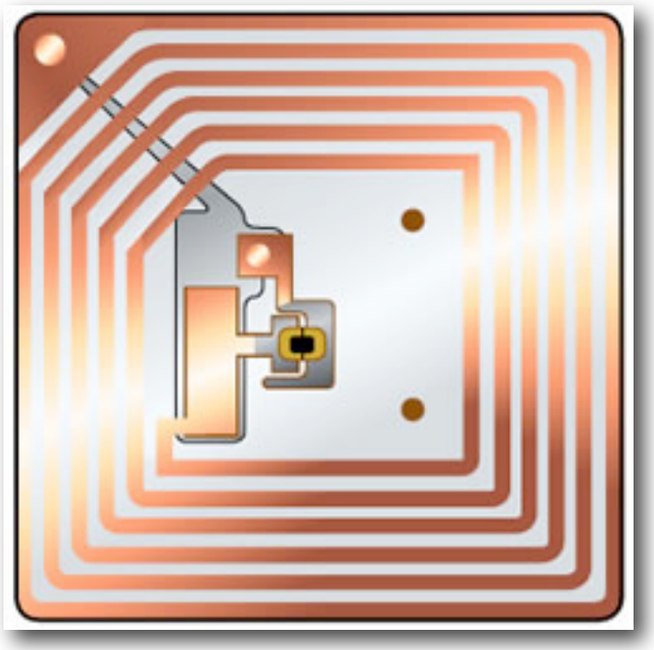


RFID

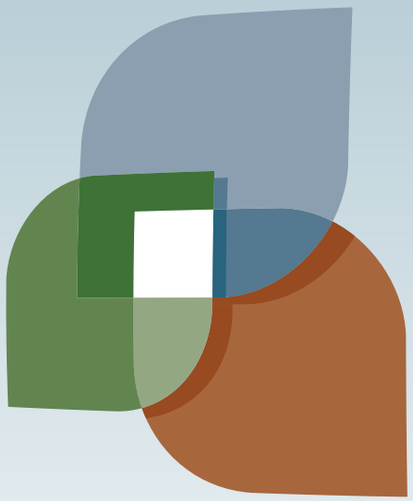

Large
Fred Meyer
grade AA
Eighteen
Grade AA
Large
Eggs
Grade AA
Large
18 Eggs





Conclusion

- The biggest challenges for technology engineering in UBICOMP:
  - Creating reusable libraries
  - Creating reusable patterns
  - Creating reusable infrastructure
- That work in more than one deployment



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