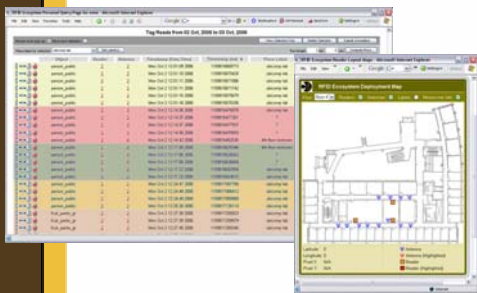


# The RFID Ecosystem: Experimenting with a Pervasive RFID-based Infrastructure

## rfid applications



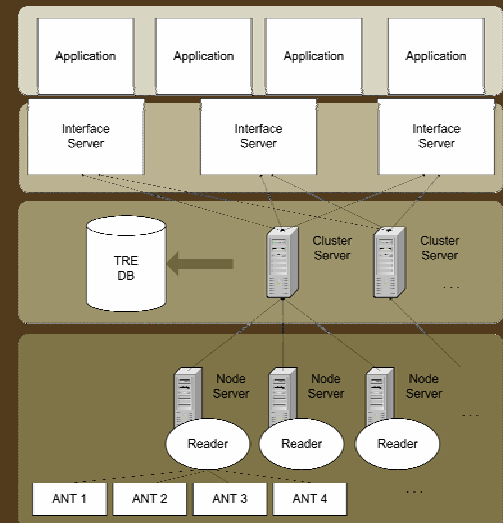
- Diverse and evolving
- Simple tag-location, logging
- Also more advanced work: activity inference, reminders, social networks, ...

## deployment

- Throughout Allen Center
- 100s of readers & antennas
- 1000s of passive tags
- People wear tags
- Personal objects are tagged



## Industrial Affiliates 2006

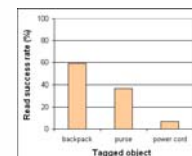
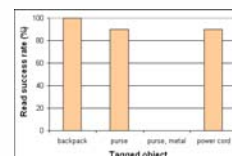
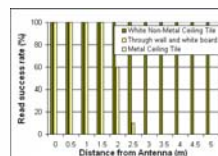


## goals

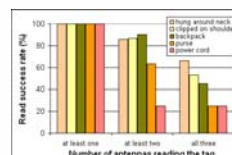
- Uncover issues in pervasive RFID-based systems
- Enable application research
- Devise solutions before such systems become common
- System goals:
  - Reliability
  - Scalability
  - Extensibility
  - Security and Privacy

## benchmarks and pilot study

- Benchmarks evaluate equipment in both optimal and deployment-like conditions
- Pilot study to uncover further issues
  - 10 readers, 34 antenna, 3 floors of AC
  - 6 users and 54 tags for 2 weeks
  - Web application allows queries
  - Ground truth from web diary



- Consider tag and antenna configuration
- Double-check each installation point
- Exploit redundancy
- Filter and/or clean erroneous input data
- Input streams are unpredictable
- Much can be inferred from objects and time of day



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<http://data.cs.washington.edu/RFID/>

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