

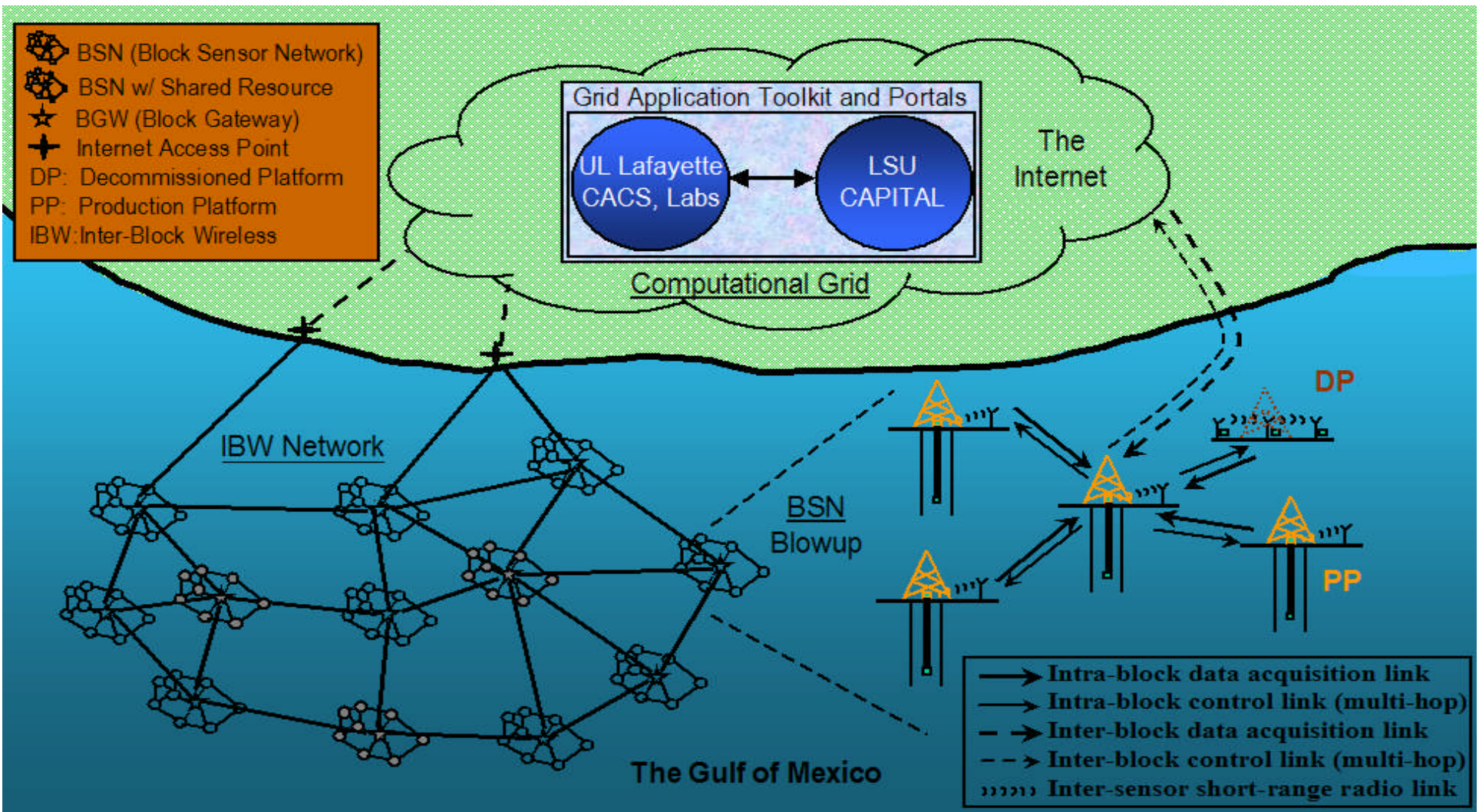
# Ubiquitous Computing and Monitoring System (UCoMS) for Discovery and Management of Energy Resources



**Wireless and Sensor Networks**



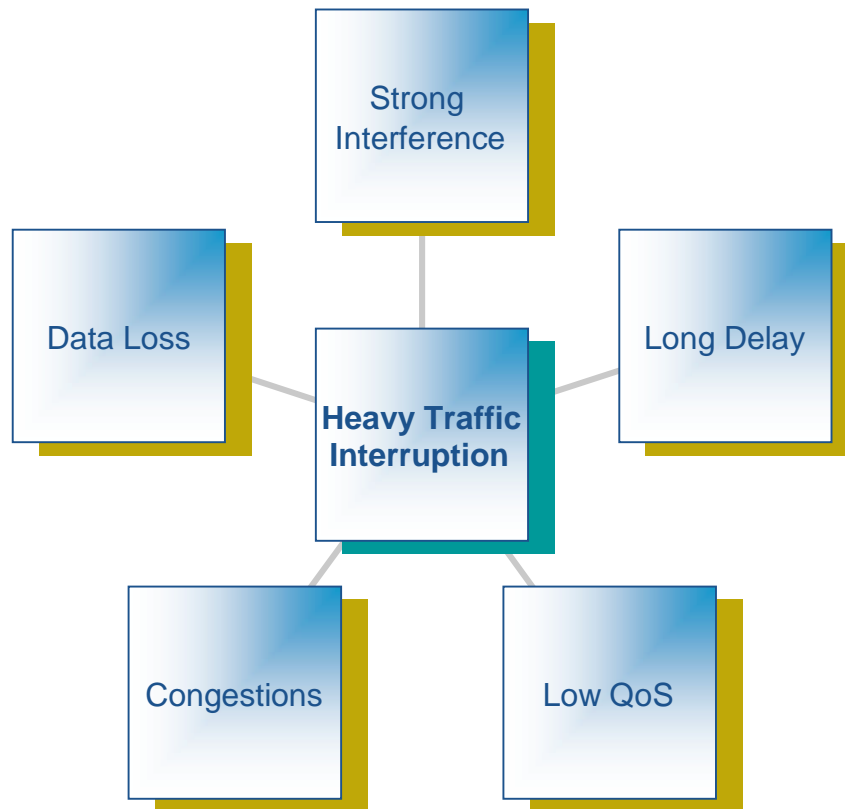
# System Overview





# Challenges and Goals in IBW

- Challenges



- Goals

- Sustained data rate of 10 Mbps
- Support delay-tolerant data delivery
- Support fault tolerability
- Support application oriented QoS
- Support self-configurability



- Typical Network Layer Structure

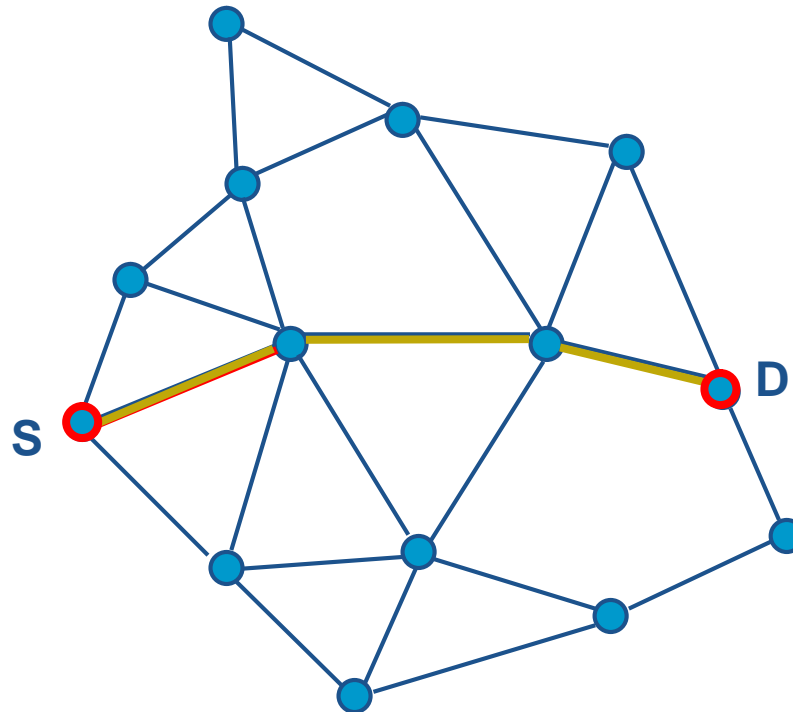
Application Layer

Transport Layer

Network Layer

Data Link Layer

Physical Layer

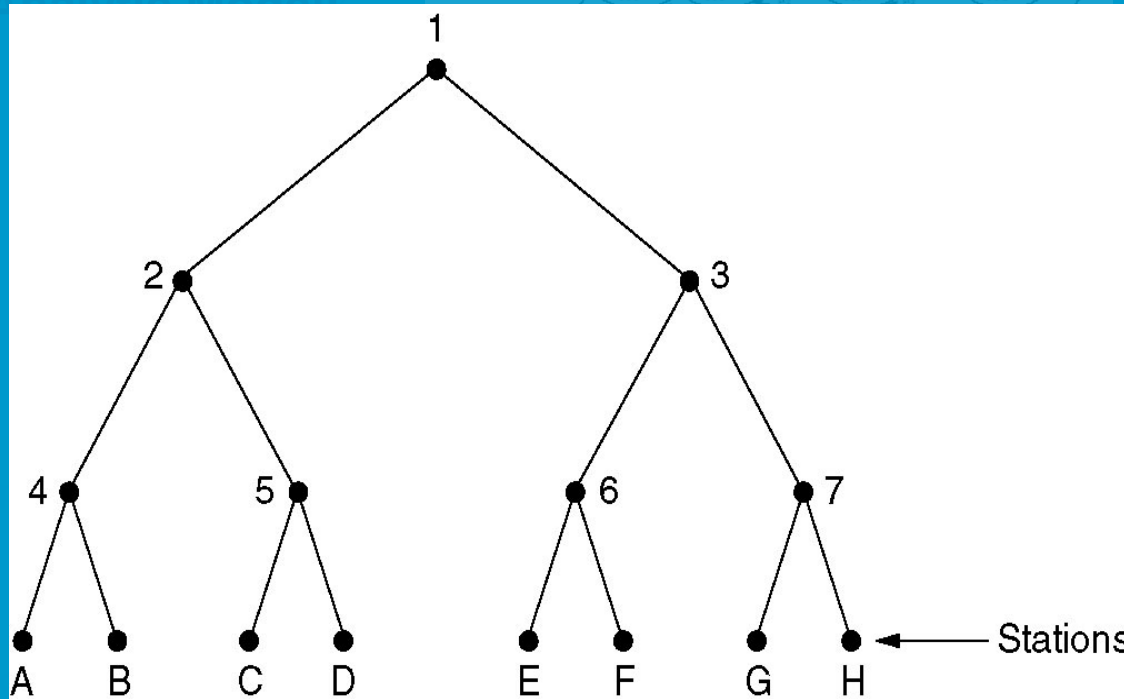




# Medium Access Control



Basic idea: distributed adaptive tree walk protocol to minimize channel access delay at low loads and maximize channel efficiency under high loads



- AC
- g and QoS port
- n, analysis, lation
- basic ideas

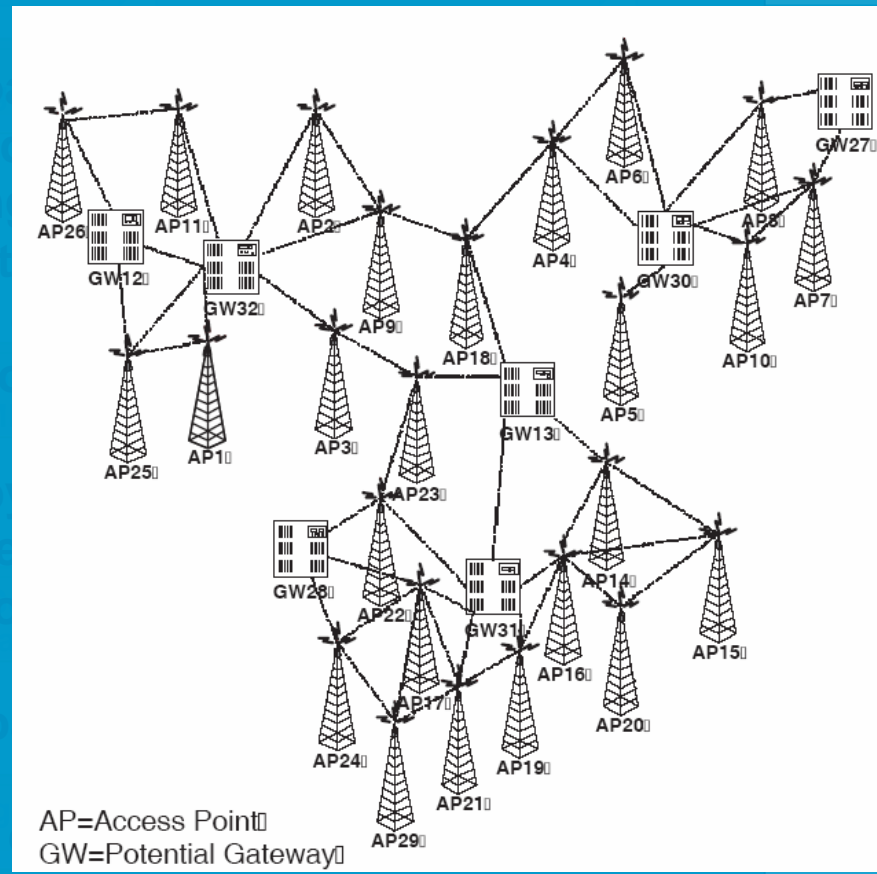


# Routing and Transport

Aug. 2006  
Feb. 2006  
Aug. 2005  
Feb. 2005  
Aug. 2004

Main Objective: finding a set of gateways and their optimal placement.

- Control...
- Congestion...
- Multiple layers...
- Prediction...
- Cross-layer...



way Deployment

2006

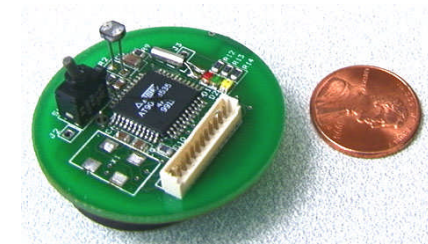
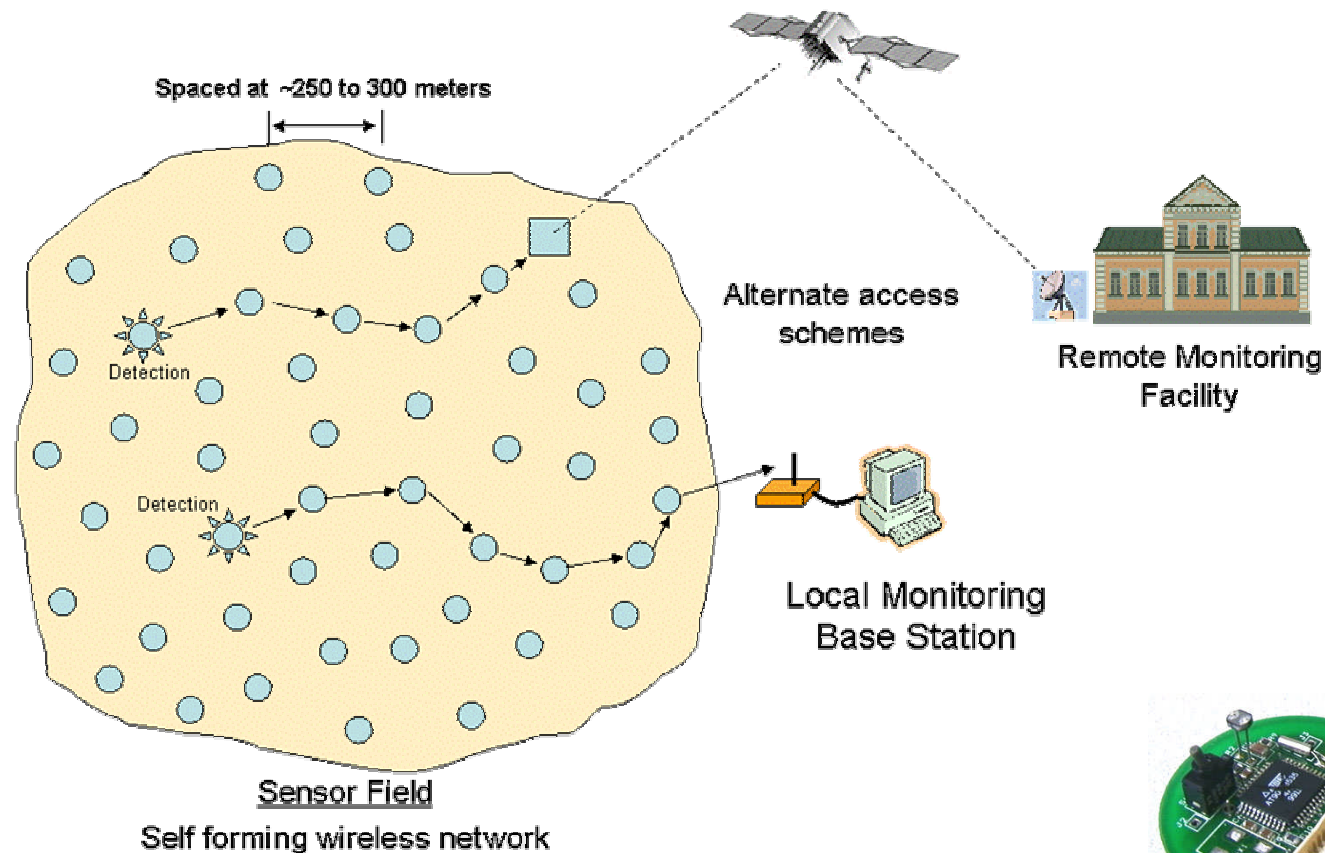
evaluation

velopment



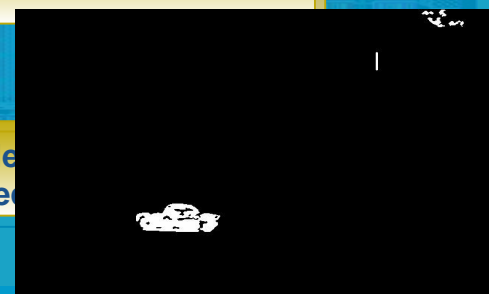
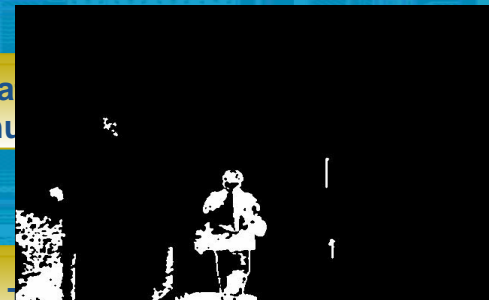
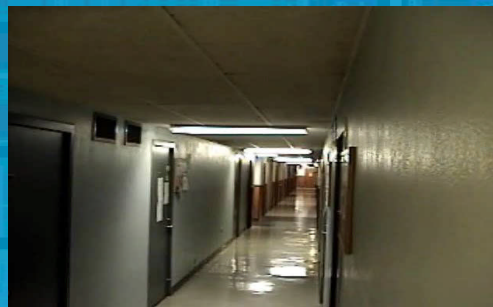
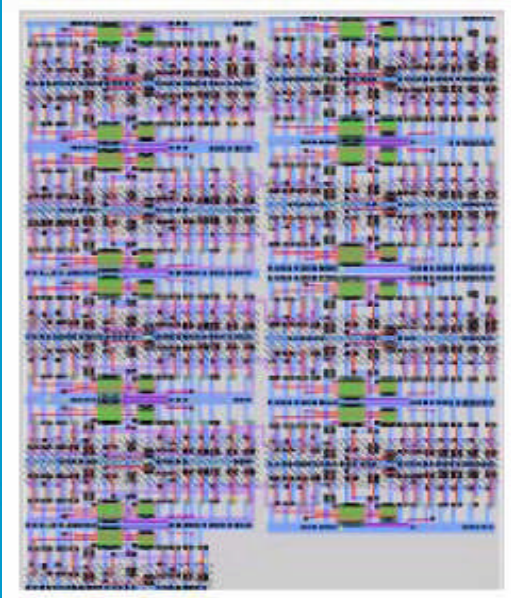
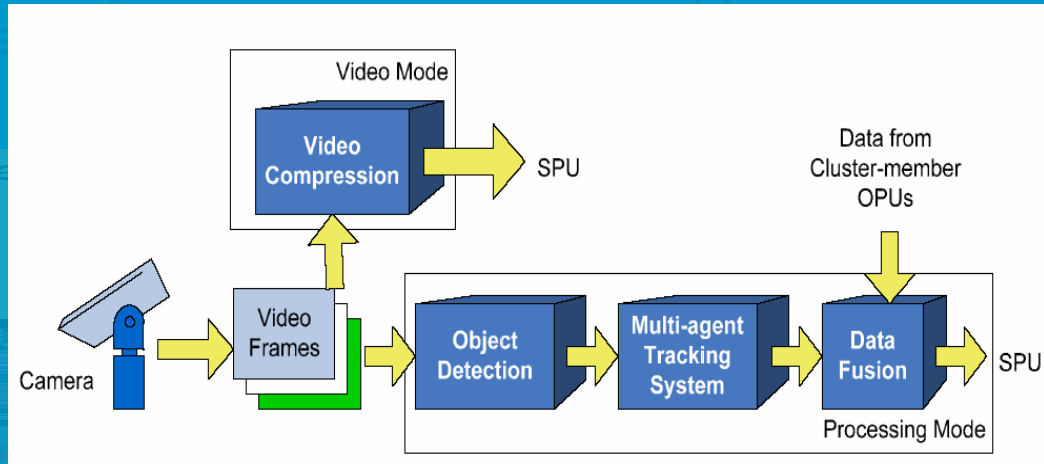
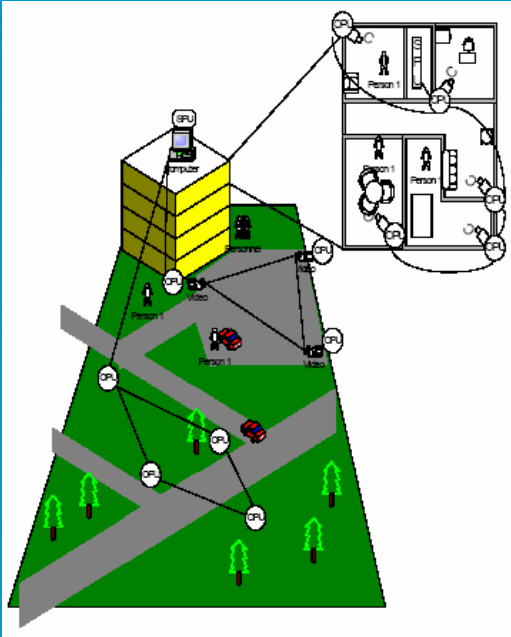
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# Wireless Sensor Network



**Main challenge: energy efficiency**

# Objective: realize low power and high speed object detection algorithms in silicon

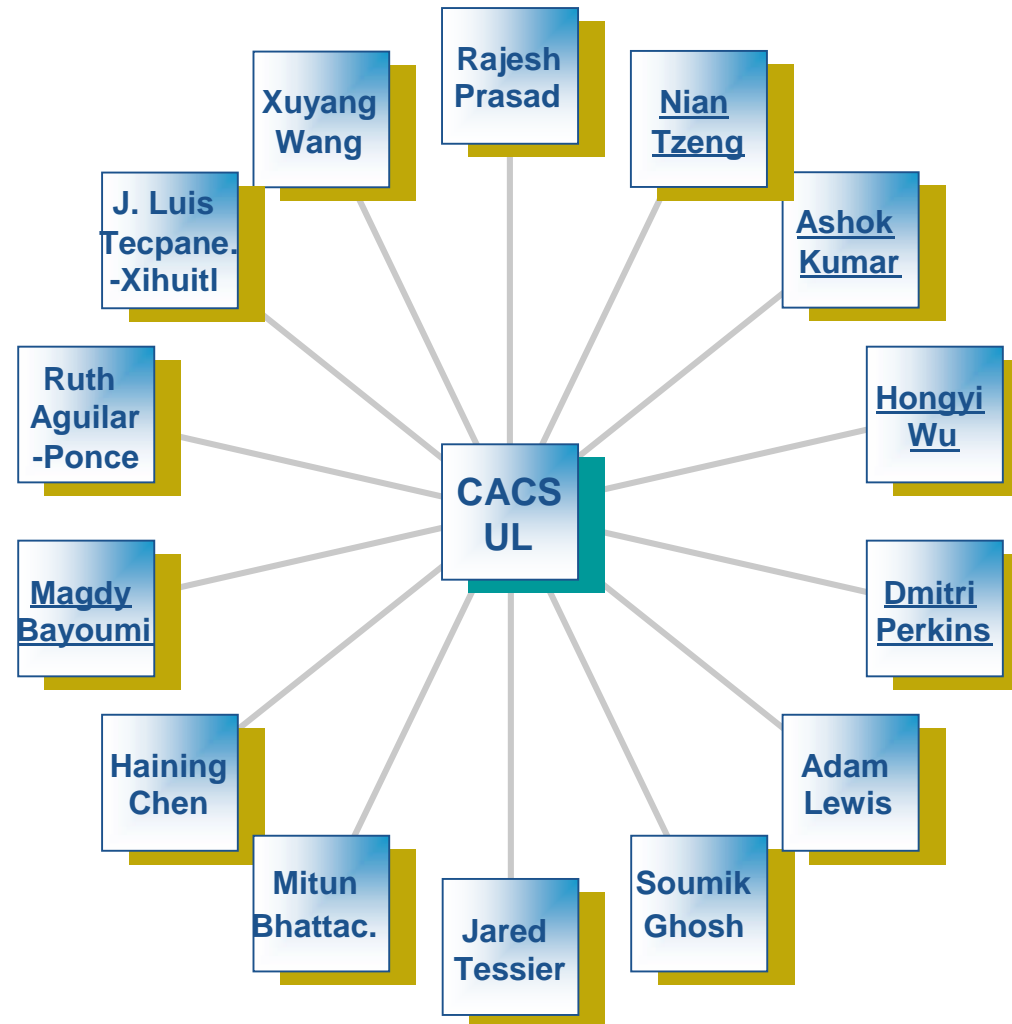




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# Team

Five faculty members, ten graduate students, and three undergraduate students





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# Thank You

## Questions, Discussion

