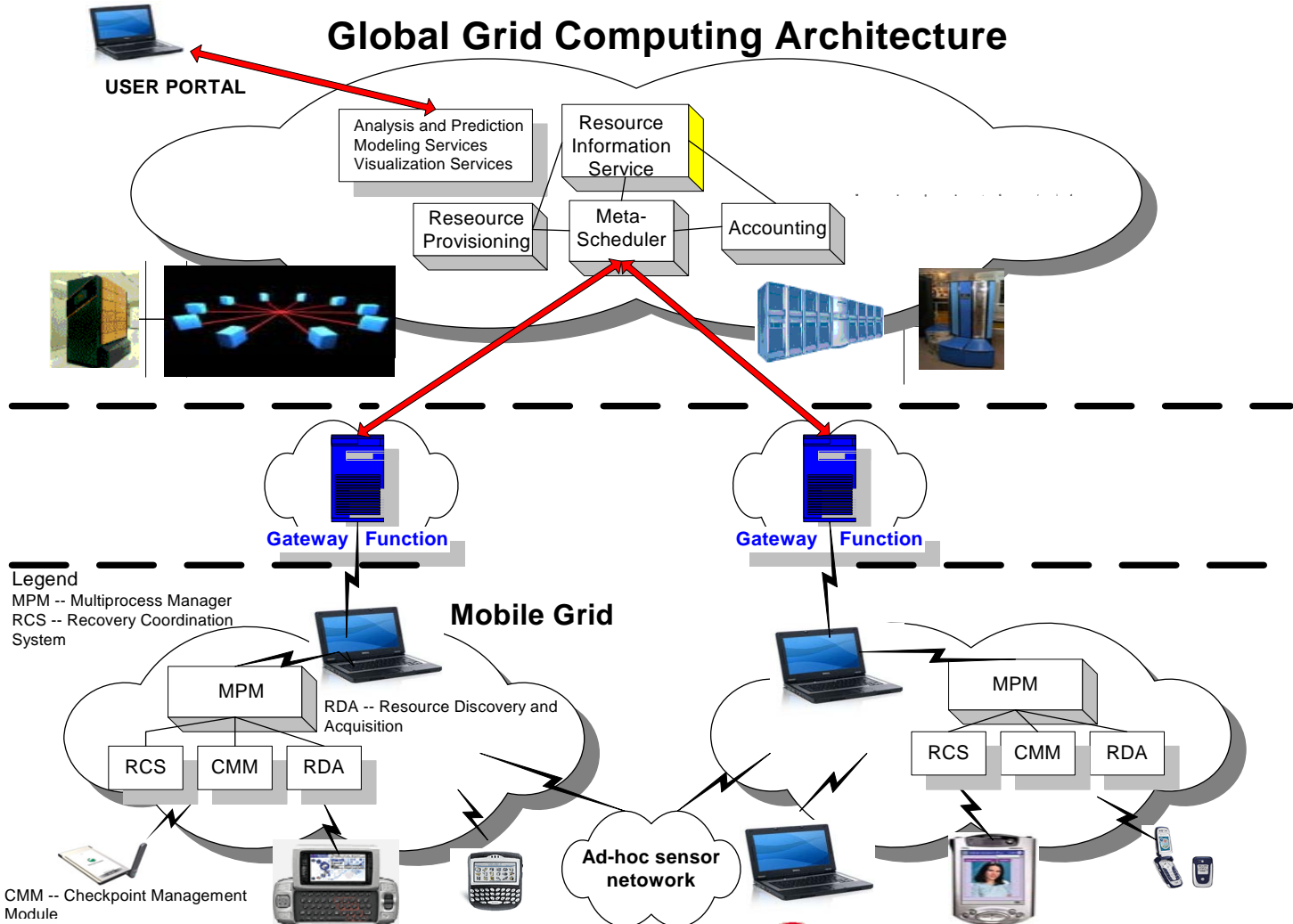


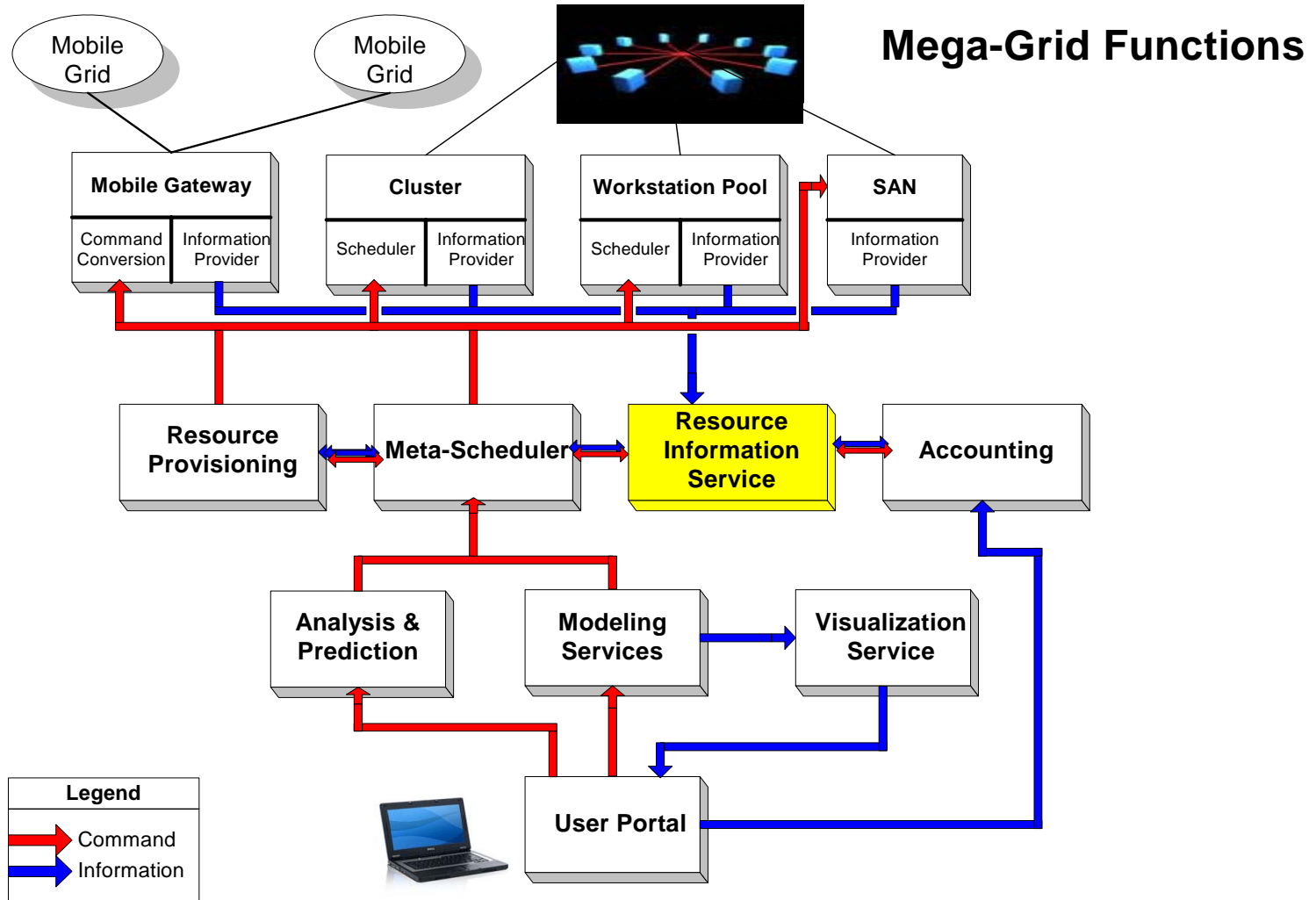
# Ubiquitous Computing and Monitoring System

*UCoMS for Discovery and Management of Energy Resources*



# Ubiquitous Computing and Monitoring System

*UCoMS for Discovery and Management of Energy Resources*

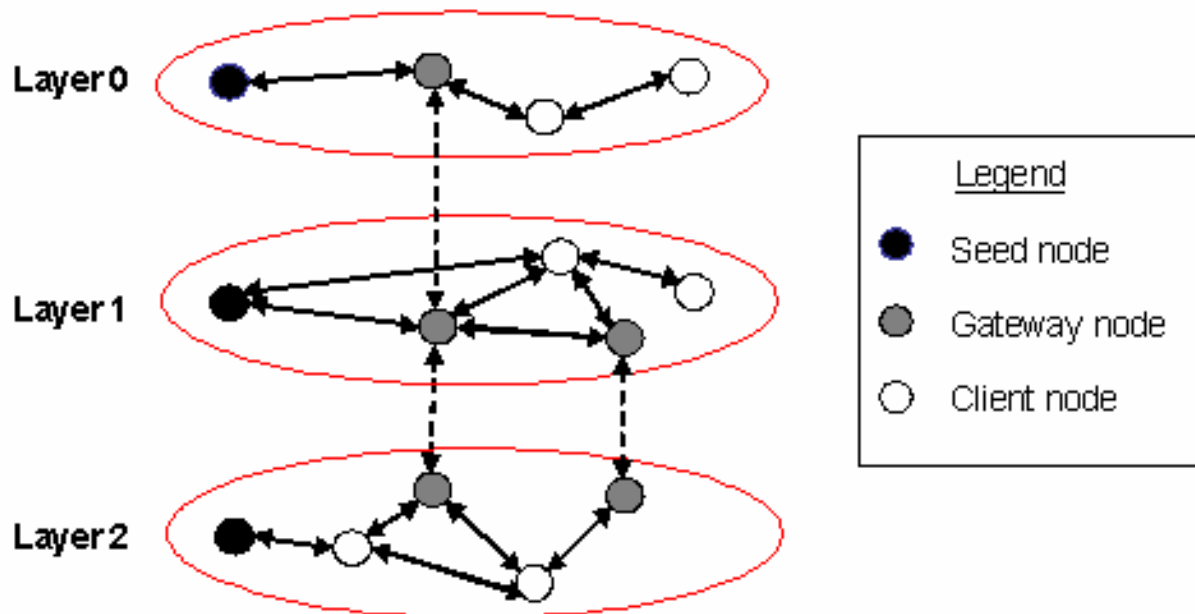


# Ubiquitous Computing and Monitoring System

UCoMS for Discovery and Management of Energy Resources

## P2P Resource Discovery System

- Decentralized, based on DHT overlay (Pastry)
- Multiple layers, each per resource type
- Layers involving different dissemination frequencies
- Layers linked by gateway nodes, leveraging DHT

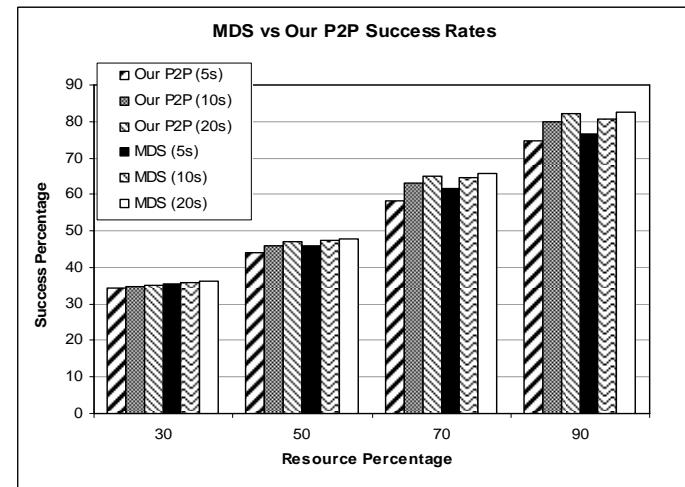
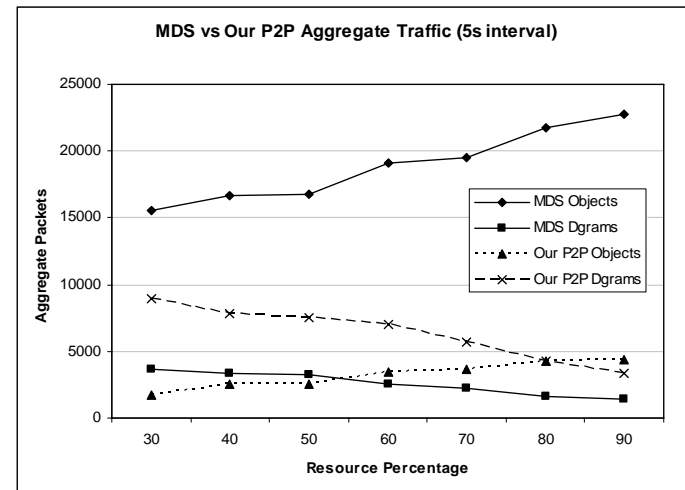


# Ubiquitous Computing and Monitoring System

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## P2P System Performance

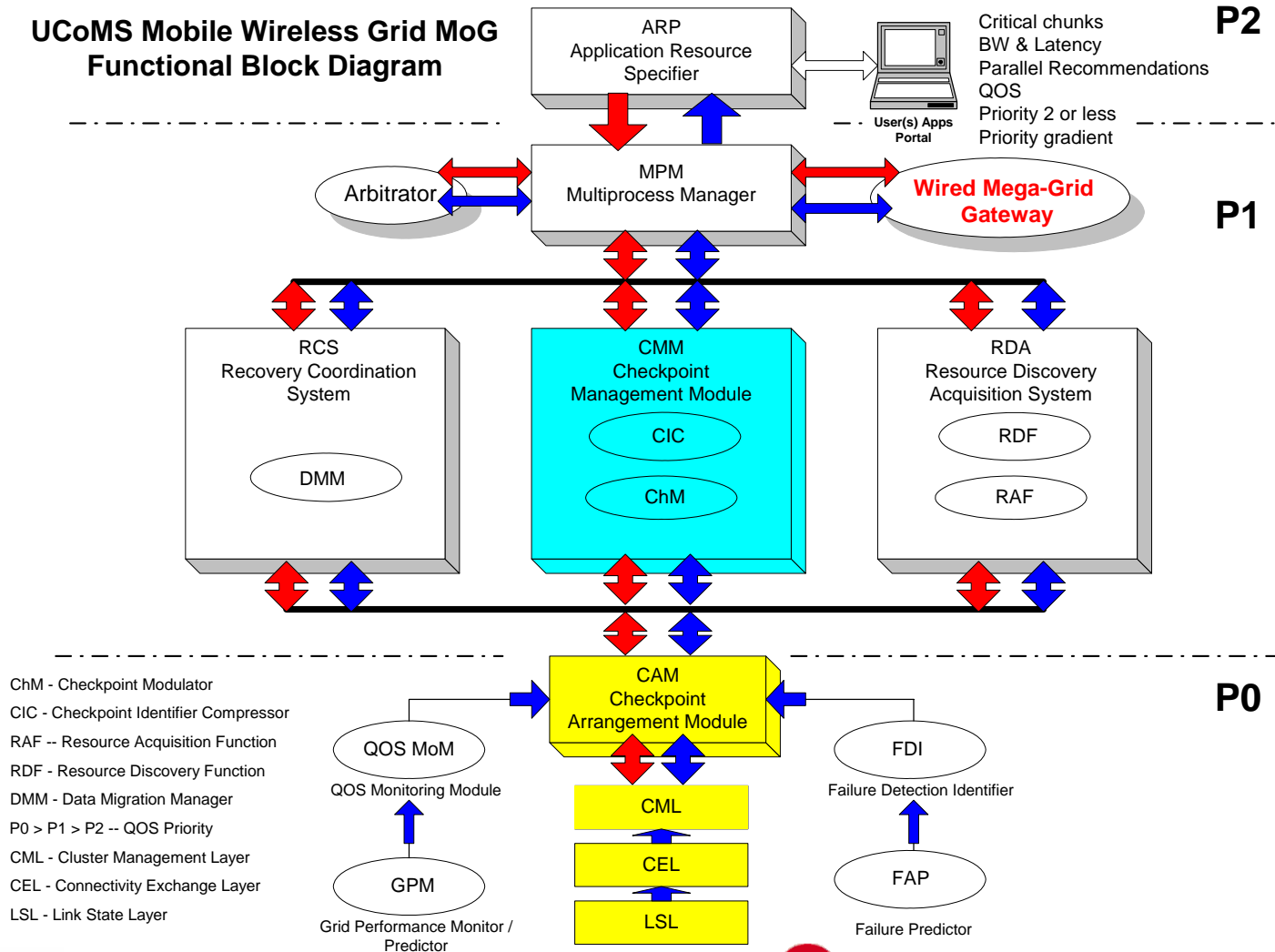
- Tested against MDS via simulation
- Significant reduction in traffic overhead
- Similar resource discovery performance
- Submitted paper for CCGrid '07



# Ubiquitous Computing and Monitoring System

UCoMS for Discovery and Management of Energy Resources

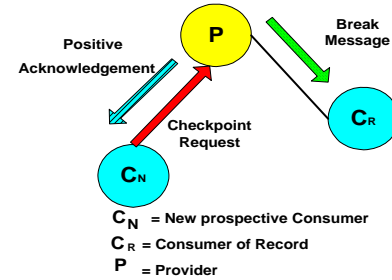
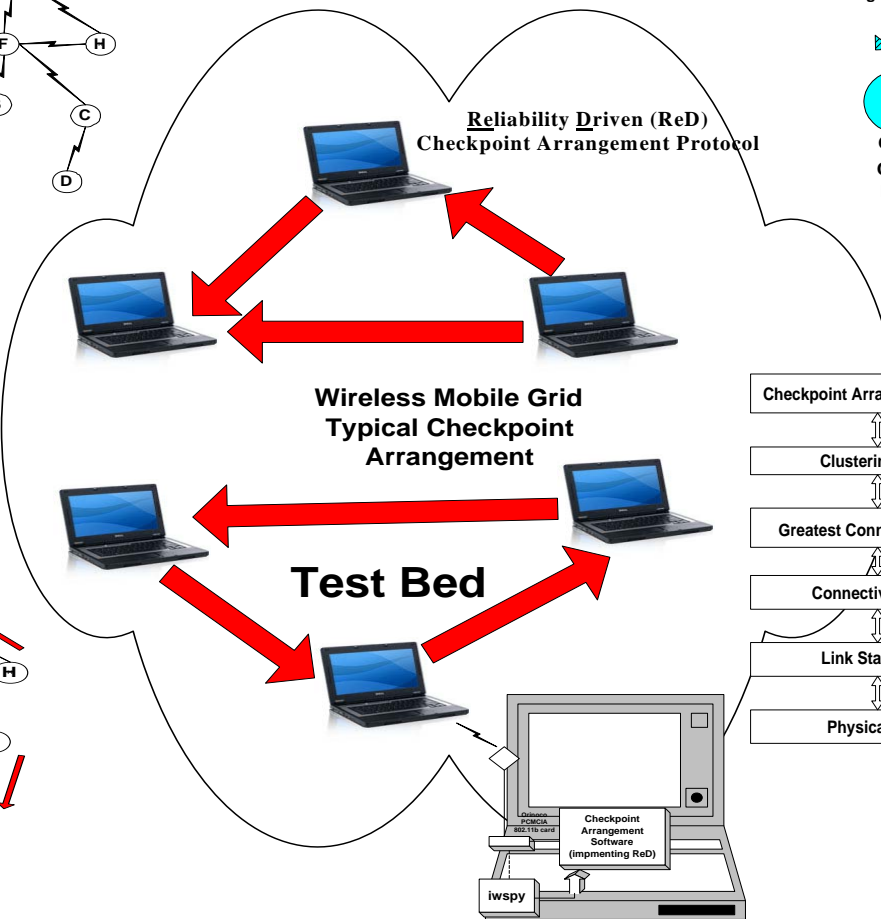
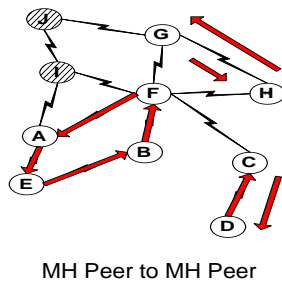
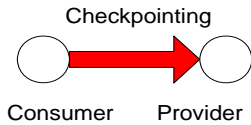
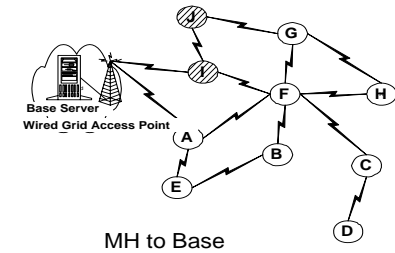
UCoMS Mobile Wireless Grid MoG  
Functional Block Diagram



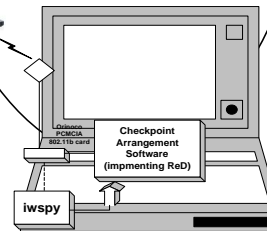
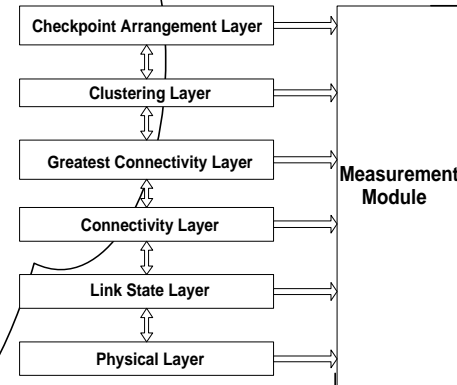
# Ubiquitous Computing and Monitoring System

UCoMS for Discovery and Management of Energy Resources

UCOMS - Peer-to-Peer Checkpointing Arrangement for Mobile Grid Computing Systems  
Submitted to IPDPS 2007 on Oct. 9, 2006



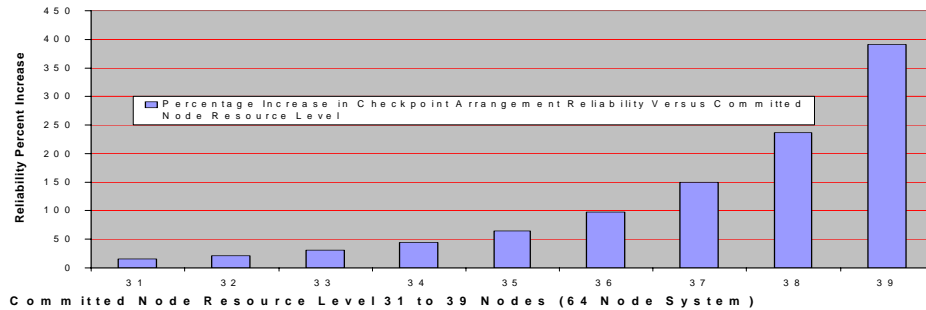
Discrete Event Simulator



# Ubiquitous Computing and Monitoring System

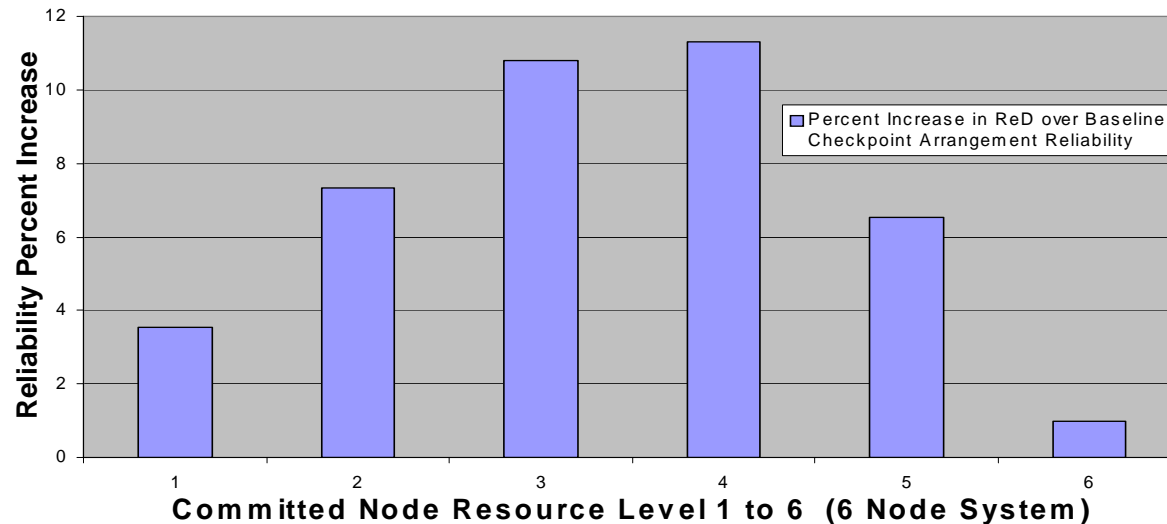
UCoMS for Discovery and Management of Energy Resources

## Wireless Mobile Grid Results



Simulator Results Showing ReD Protocol Improvement over Neutral Protocol as network scale becomes larger

Percent Increase in ReD over Baseline Checkpoint Arrangement Reliability versus Number of Nodes committed to the MoG



Actual Testbed Results Showing ReD Protocol Improvement over Neutral Protocol as network scale becomes larger