Perfect Power Demonstration

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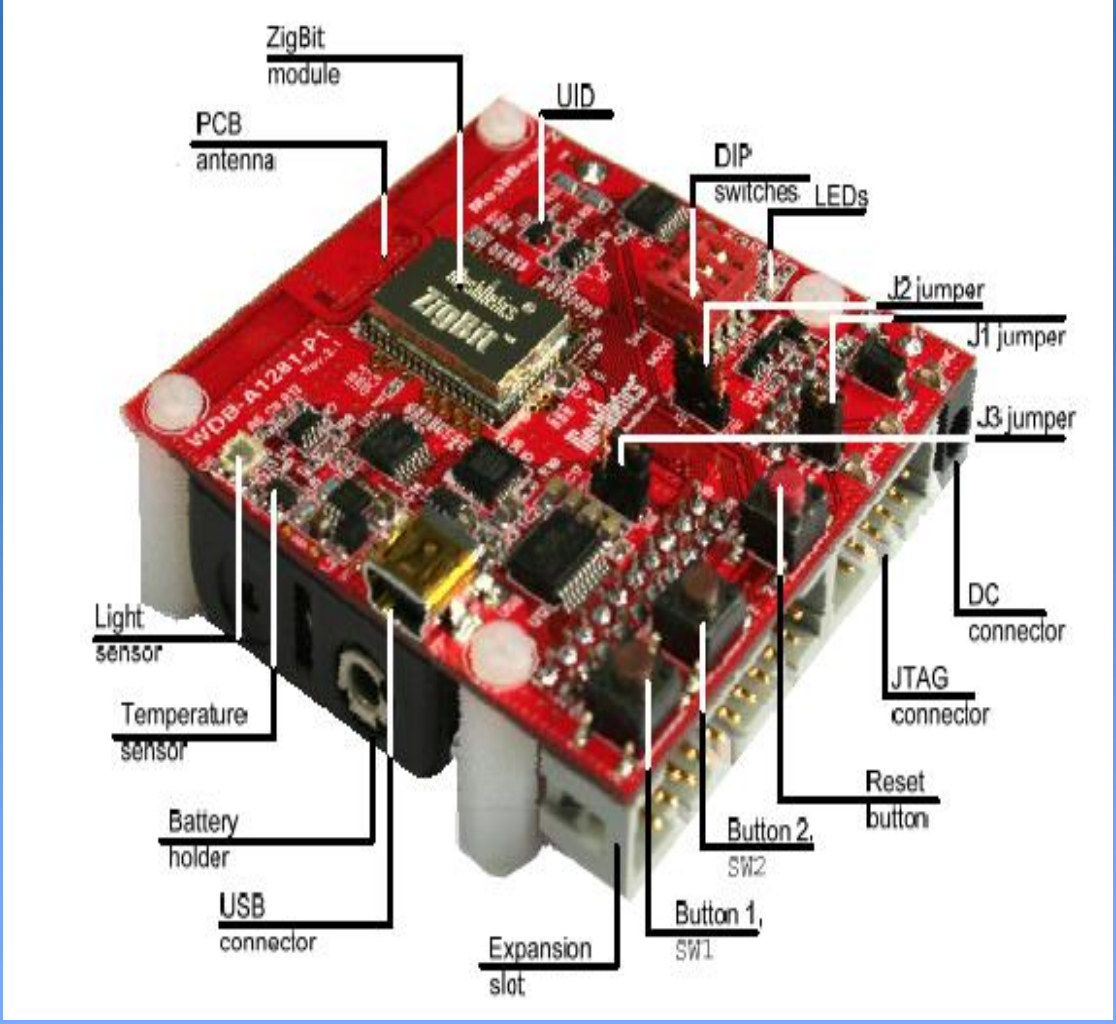
Demonstration Objectives

A proof of concept for:

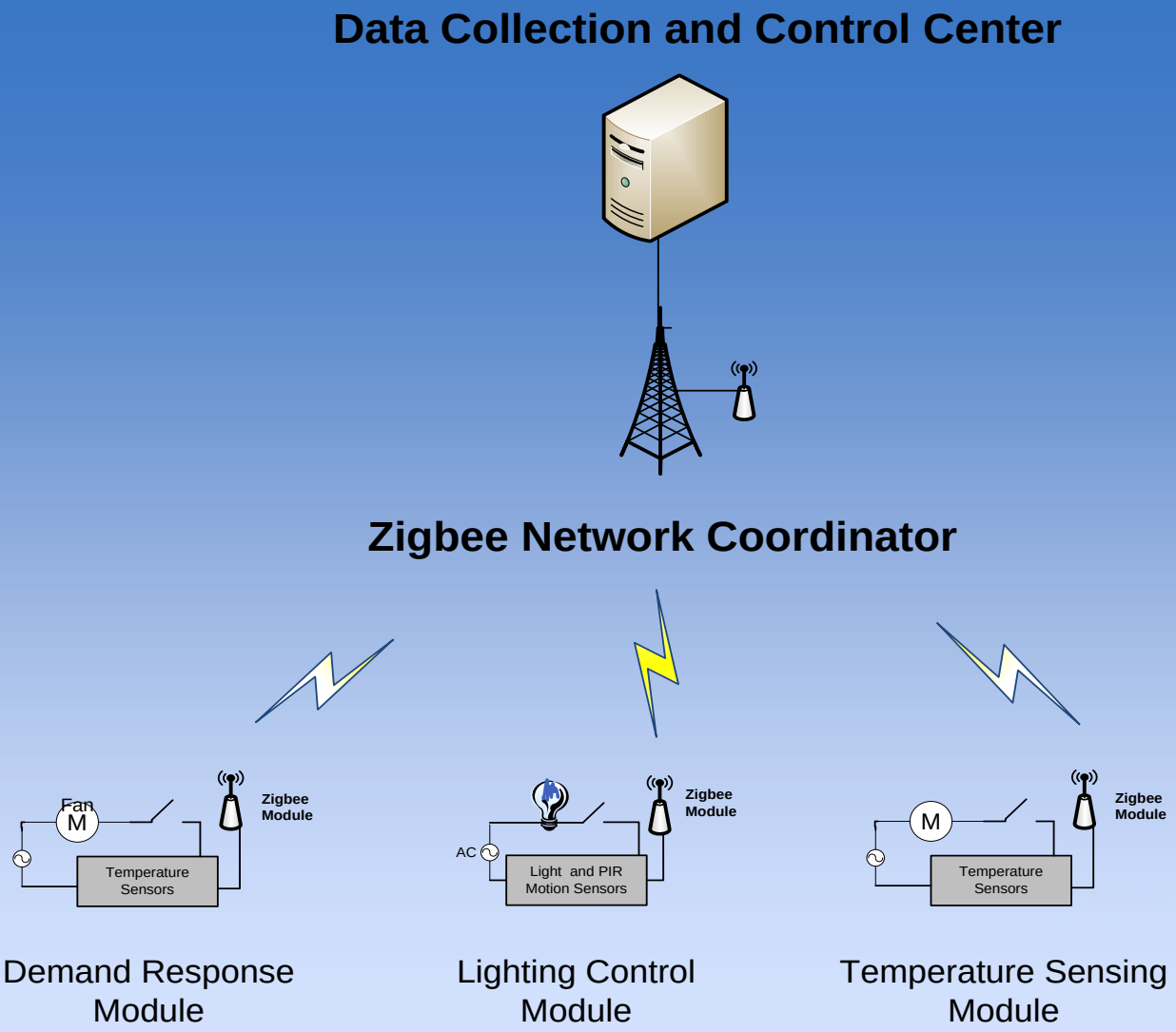
- The Perfect Power system controller
- Building energy management system
- Campus wide wireless networking using Zigbee for Smart grid applications

Zigbee

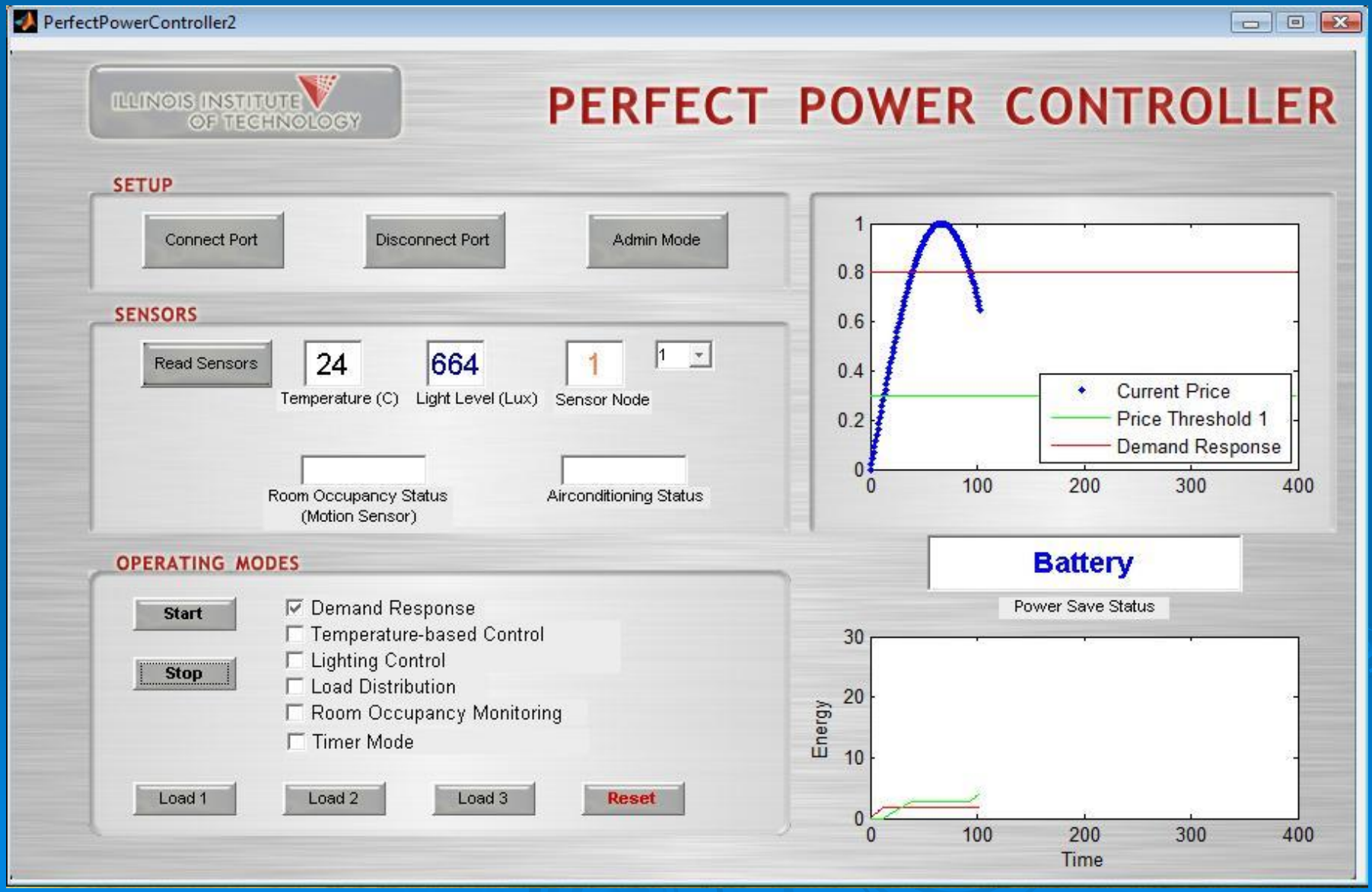


Meshbean2 Zigbee Mote

Test Bed Architecture



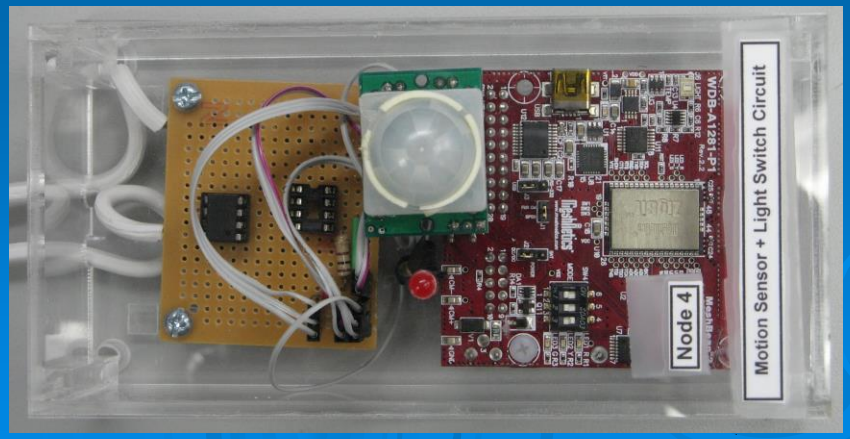
User Interface



Lighting Sensing & Control

Lighting sensing and actuation module is developed to turn on/off lighting using the following inputs:

- Room occupancy sensing result (via PIR sensor)
- Ambient lighting sensing result (onboard light sensor)
- Time of day



Temperature Monitoring & Control

Ambient temperature monitoring and control performs

- Periodic temperature measurements using the on-board temperature sensor on Zigbee motes
- Load actuation by comparing the temperature with a user configured threshold value

Work in Progress

- Deploy a Zigbee sensing and control network throughout the Electrical and Computer Engineering building at IIT
- Monitor HVAC systems, measure ambient lighting levels and temperature, and control designated lighting systems within the building.