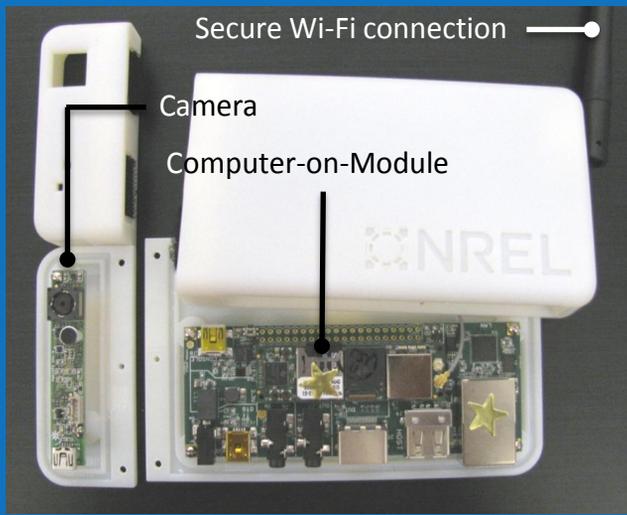
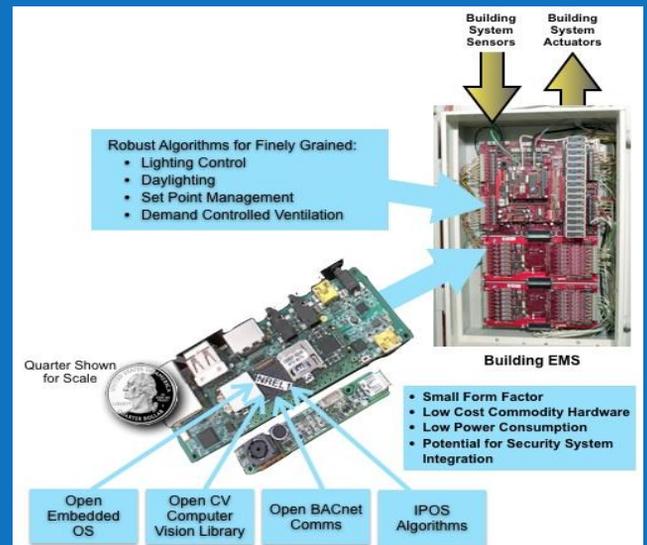


IPOS is:

- An alternative technology approach to current infrared or ultrasound occupancy sensors
- More reliable and feature-rich than conventional technology
- Able to identify occupancy regardless of motion
- Built with commodity hardware used for the smart phone industry
- Based on open-source computer vision libraries
- Can be integrated with building security systems



- Reliable detection accuracy
- Occupancy classified with additional information:
 - Number of occupants and their positions in polar coordinates
 - Activity level (sedentary/active)
- Illuminance level estimation
 - Daylighting modulation potential
- Communication with Building Automation Systems via standard protocols (BACnet, others)

- Motion detection is part of a multiple detection strategy for robust occupancy determination
- Multiple-frames image subtractions to isolate moving objects and remove background
- Computes number of areas moving, motion history, direction and speed
- Computes a confidence level associated with motion detection



- Synergistic approach with face and people detection computer vision algorithms
- Detects stationary occupants
- Training sets for traits recognition can be changed for other occupancy applications (e.g. vehicles in parking garages)



IPOS System Performance:

- Accuracy of detection 20% better than current technology
- Better energy efficiency with the use of adaptive time delays



- Small form factor
- Low-cost, powerful processing hardware
- Software based on Linux OS
- Low power consumption



Localized control with a single IPOS sensor through image partitioning:

- Multiple independent lighting controls
- Daylighting control using illuminance readings
- Ventilation rates and schedules based on location and number of occupants



Single sensor technology:

- Multiple functions in one
- Covers a larger area than current occupancy sensors
- Cost-effective through sensors reduction
- Potential of further cost reduction through security systems integration

Learn more about the IPOS technology and the potential for new innovative energy management strategies for buildings, including licensing and commercialization opportunities.

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