Wireless Night Vision
Motion Activated Camera

Andrew Byrne and Daniel Peroni
Overview

Goal: Create a low cost, motion activated camera which supports night vision and remote viewing of images, while minimizing power consumption.

Applies to several markets including home security, surveillance, and wildlife monitoring.

Low cost alternative to many commercial products.

Provides the option of battery-powered operation and quick system setup and re-configuration.
Hardware

- Raspberry Pi 2
- HC-SR04 Ultrasonic Distance Sensor
- RPi NoIR Camera
- RPi Camera Light Breakout Board (SC620)
- Edimax WiFi USB Dongle
Software

- AlertCam: C-based multi-threaded application which handles motion detection and image capture. Utilizes wiringPi and RaspiCam libraries.

- Mail Script: Detects new image capture and sends to mailing list via SSMTP.
Results and Potential Improvements

Achieved > 25% power reduction

Moving Forward:
- Host server for picture storage with a front end app for easy image viewing
- IR color correction
- Improve camera API to properly release camera resources