Wireless Joystick
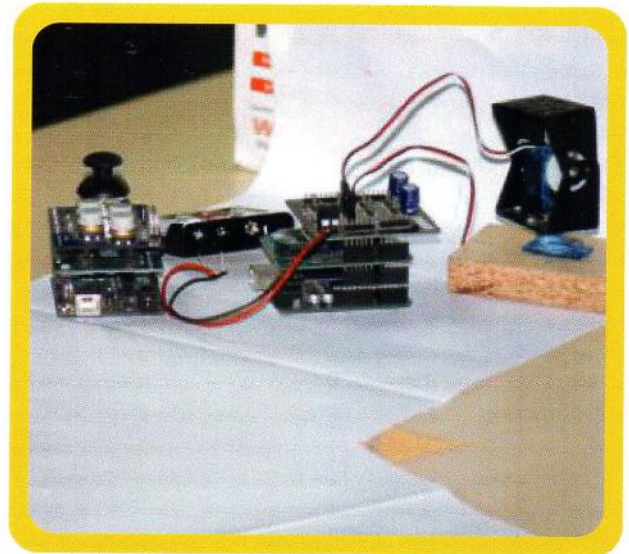
Features

- Wireless control of pan and tilt mechanism using remote joystick

- 2-axis joystick on transmitting side

- Servo motor based pan and tilt mechanism

- Wireless communication based on the ZigBee protocol

- Webcam can be used as payload of pan and tilt mechanism

Hardware

- Arduino UNO board based on the 8-bit ATmega328 microcontroller working at 16 MHz sboth on transmitting and receiving side

- Transmitting side: Joystick shield with X,Y analog outputs, GRIET's ZigBee shield with XBee module

- Receiving side: Servo shield which can interface upto 10 servo motors, battery pack for servo motor power, GRIET's ZigBee shield

Firmware

- Based on the Arduino programming language

- Uses Arduino's Servo library with functions for attaching a pin on which servo signals will be generated and specifying the angle (0 to 180 degrees)

- Serial object is used to communicate with XBee module

- Internal ADC of ATmega328 used for conversion of joystick analog outputs to digital

A GRIET-ECE project