Abstract

In this final project, Prototype of Smart Parking System for Indoor Parking based on Microcontroller and Wireless Sensor Network was built. Microcontroller used as WSN sensor node processing subsystem and equipped by ultrasonic sensor, XBee, RFID, LED and buzzer. Ultrasonic sensor as sensing subsystem function is to detect available parking space, by sensing whether there is a car that is parked or not. If it receive a waveback from the car, XBee module as communicaation subsystem will transmit the data to sink node XBee using IEEE 802.15.4/Zigbee network standard dan single hop topology. After then, the data will update java application in computer server with change the status of parking space from available to filled. The prototype determines parking space for the driver. To determine it, a policy that give a priority value to each parking space used. More higher the value, the parking space must filled first. To verification their car parked in it, tag RFID will be given to them. When parked the car, they must tap the RFID tag to its reader. If they parked the car on the wrong parking space, then buzzer will turned on. If correct, LED do.

Keywords : WSN, ZigBee, ultrasonic sensor, smart parking, parking monitoring