A Wireless Sensor Network Protocol for a Car Parking Space Monitoring System

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Abstract : This paper presents a wireless sensor network protocol for a car parking monitoring system. A wireless sensor network for the purpose is composed of multiple sensor nodes, a sink node, a gateway, and a server. Each of the sensor nodes is equipped with a 3-axis AMR sensor and deployed in the center of a parking space. The sensor node reads its sensor values periodically and transmits the data to the sink node if the current and immediate past sensor values show a difference exceeding a threshold value. The operations of the sink and sensor nodes are described in detail along with flow diagrams. The protocol allows a low-duty cycle operation of the sensor nodes and a flexible adjustment of the threshold value used by the sensor nodes.