Abstract

Wireless Sensor Networks (WSN) are self-configurable ad-hoc networks. To set up a seamlessly interoperable WSN, a wireless sensor device technology called ZigBee is used. Moreover, ZigBee is an IEEE 802.15.4 based specification for a group of high-level communication protocols used to build area networks having both small range and wide range coverage. The design of the communication infrastructure and hardware components are crucial in the large-scale ZigBee networks in order to ensure communication efficiency in the real world applications. This study presents a performance analysis of a large-scale ZigBee networks for three different topologies comparatively. The performance of ZigBee devices has been analyzed in the network simulator OPNET in terms of total end-to-end delay, MAC throughput and MAC load.
10. Huang, P. C., 2009. ZigBee Wireless Network Application Research Case Study within Taiwan University Campus, Proceeding of the 8th IC on Machine Learning and Cybernetics.
Technology.


Index Terms

Computer Science

Networks

Keywords

Large-scale WSN, performance analysis topologies, ZigBee