Abstract

The IEEE 802. 15. 4 the ZigBee protocol finds numerous applications for commercial buildings and home automation, security, healthcare, medical monitoring, vehicle monitoring, agriculture and environmental monitoring etc. In this paper we have evaluated the effect of topologies variation i.e. Tree, Star and Mesh on load, delay and throughput in different bands using Zigbee wireless sensors by means of OPNET modeler. It is observed that star, tree and mesh topologies have less delay and maximum throughput in 2450MHz band as compared to other bands i.e. 915MHz and 868MHz. The obvious reason for this observation can be less resource overheads in 2450MHz band than other two bands resulting in better network metrics.

References

- Z. Alliance, ZigBee specification v 1. 0, 2008.
- IEEE 802. 15. 4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low- Rate Wireless Personal Area Networks (LR-WPANs) (2003), 3 Park
Avenue, New York, USA: IEEE.


Index Terms

Computer Science

Wireless
Keywords

Delay; Load; Throughput; Topology; ZigBee