Abstract

The wireless communication has shown its improvement in sensor skills which motivates the wireless sensor networking. IEEE 802.15.4 was created with having few tremendous advantages like low-power, very low cost and low energy consumption in wireless consumption. From the last few years it has been used in many applications including hospitals, hotels, home, industrial controlling networks and the environmental monitoring. It is the basic standard which specifies the MAC layer and Physical layer for low rate wireless PAN at 2.4GHz ISM band. IEEE802.15.4 is susceptible to interference from the other wireless technologies such as IEEE802.15.1 and IEEE80.11. Here we have given an overview of the IEEE 802.15.4 and IEEE 802.11 and analyze the performance of IEEE 802.15.4 and IEEE 802.11. The parameters on which the simulation is done are packet loss, packet received, End-to-End delay, Energy consumption, bandwidth used and packet delivery ratio by using NS2 simulator software. The final simulation results evaluated by taking 30 and 50 nodes for both 802.11 and 802.15.4 based networks.
- S. Haani Masood, "Performance comparison of IEEE 802. 11g and IEEE 802. 11n in the presence of interference from 802. 15. 4 networks," Department of Electrical Engineering, McGill University.
- Marina Petrova, Lili Wu, Petri Mahonen and Janne Riihijarvi, "Interference Measurements on Performance Degradation between Colocated IEEE 802. 11g/n and IEEE 802. 15. 4 Networks," RWTH Aachen University Kackertstrasse, Germany.
- Leopoldo Angrisani, Matteo Bertocco, Daniele Fortin, and Alessandro Sona, "Experimental Study of Coexistence Issues Between IEEE 802. 11b and IEEE 802. 15. 4 Wireless Networks," IEEE transaction on instrumentation and measurement, VOL. 57, NO. 8, August 2008.
- Sofie Pollin, Ian Tan, Bill Hodge, Carl Chun, "Harmful Coexistence Between 802. 15. 4 and 802. 11: A Measurement-based Study," Ahmad Bahai University of California, Berkeley.
- Hussein Khaleel, Claudio Pascione, Federico Penna, Maurizio A. Spirito, Roberto Garello, "Impact of Wi-Fi Traffic on the IEEE 802. 15. 4 Channels Occupation in Indoor Environments," IEEE 2009.

**Index Terms**

Computer Science

Networks

**Keywords**

Wireless personal area network

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NS2