

Analysis of the IEEE 802.15.4 MAC Parameters to Achive Lower Packet Loss Rates

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Abstract : The IEEE-802.15.4 standard utilizes the CSMA-CA mechanism to control nodes access to the shared wireless communication medium. It is becoming the popular choice for various applications of surveillance and control used in wireless sensor network (WSN). The benefit of this standard is evaluated regarding of the packet loss probability who depends on the configuration of IEEE 802.15.4 MAC parameters and the traffic load. Our exigency is to evaluate the effects of various configurable MAC parameters on the performance of beaconless IEEE 802.15.4 networks under different traffic loads, static values of IEEE 802.15.4 MAC parameters (macMinBE, macMaxCSMABackoffs, and macMaxFrame Retries) will be evaluated. To performance analysis, we use ns-2[2] network simulator.

Keywords : WSN, packet loss, CSMA/CA, IEEE-802.15.4

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