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Coding of RMAC and Its Theoretical and Simulation-Based Performance Comparison with SMAC

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Abstract : We present an implementing of RMAC in TinyOS 1.x. RMAC is a cross layer and Duty-cycle MAC protocols that was proposed to provide energy efficient transmission services for wireless sensor networks. The protocol has a unique and efficient packet transmission scheduling mechanism that enables it to overcome delivery latency and overcome traffic congestion. Design details and implementation challenges are divulged. Experiments are conducted to show the correctness of our implementation with numerous assumptions. Simulations are performed to compare the performance of RMAC and SMAC. Our results show that RMAC outperforms SMAC in energy efficiency and delay.

Keywords : MAC protocol, performance, RMAC, wireless sensor networks
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