IRI-MAC: An Improved Receiver Initiated MAC Protocol for Wireless Sensor Network

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Abstract

Now a day's wireless sensor network takes much attention to researcher. A lot of Medium Access Control (MAC) protocol has been proposed to improve the efficiency in case of increase throughput and energy preservation. Receiver-Initiated MAC (RI-MAC) is one of the most popular MAC protocol due to its ultra-low duty cycle and good throughput. But RI-MAC major disadvantages are exposed terminal collision problem and hidden terminal collision problem. In this paper we only addressed exposed terminal problem using an unique time Clear Channel Assessment (CCA). According to Improved Receiver-Initiated MAC (IRI-MAC) protocol the receiver beacon is not respond immediately but wait a random time and perform a CCA either the channel is clear. If channel clear then transmit its data immediately. More precisely, we provide such an equation that generate an unique CCA time for each node in order to avoid collision for exposed terminal problem. Our proposed system is implemented in omnet/Mixim platform and result shows that IRI-MAC perform better than that of RC-MAC and RI-MAC.
References


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Index Terms

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Keywords

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