Design and Simulation of a Communication Protocol for Wireless Sensor Networks to Optimize Energy Consumption and Network Lifetime

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Abstract

The goal of this paper is to develop a communication protocol for wireless sensor networks to optimize the network energy consumption and lifetime. The main idea is to eliminate the redundancy of data transmission from sensors to base station. Innovation lies in the approach used to achieve the goals: at the base station a probabilistic model based on data correlation is generated; using this model the new values that will be measured by each node are computed; these values are sent to nodes; if the measured value is different from the received one, the difference is send to base station, otherwise the node does not send anything. The architecture of the proposed protocol is presented and also the protocol is validated through simulations.

Biography

Claudiu Popescu was studying at "Lucian Blaga National College" in Sebes, Major in Mathematics and Informatics (2004-2008). Between 2008-2012 he was attending and graduated the Faculty of Electronics, Telecommunications and Information Technology, Cluj-Napoca (Major in Telecommunications Technologies and Systems). From 2012 he is Master Student at the Faculty of Electronics, Telecommunications and Information Technology (Major in Multimedia Technologies).

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