عنوان مقاله:

Energy Efficient Clustering Algorithm for Wireless Sensor Networks

محل انتشار:

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خلاصه مقاله:

In Wireless Sensor Networks (WSNs), sensor nodes are usually deployed with limited energy reserves in remote environments for a long period of time with less or no human intervention. It makes energy efficiency as a challenging issue both for the design and deployment of sensor networks. This paper presents a novel approach named Energy Efficient Clustering Algorithm (EECA) for Wireless Sensor Networks which is based on two phases clustering model and provides maximum network coverage in an energy efficient way. In this framework, an effective resource-aware load balancing approach applied for autonomous methods of configuring the parameters in accordance with the signaling patterns in which approximately the same bit rate data is provided for each sensor. This resource-efficient clustering model can also form energy balanced clusters which results in increasing network life time and ensuring better network coverage. Simulation results prove that EECA is better than LEACH, LEA۲C and EECS with respect to network lifetime and at the same time achieving more network coverage. In addition to obtained an optimal cluster size with minimum energy loss, the proposed approach also suggests new and better way for selecting cluster heads to .reduce energy consumption of the distributed nodes resulting in increased operational reliability of sensor networks

کلمات کلیدی:

Wireless Sensor Networks; Energy-Efficient Clustering; Cluster Head Selection; Network Coverage; Network Life Time