

عنوان مقاله:

A Novel Energy-Efficient Weighted Based Multi-Level Clustering Protocol

محل انتشار:

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نویسندگان:

E Farahmand - *Department of Electrical Engineering Shahid Bahonar University of Kerman, Kerman ۷۶۱۶۹۱۳۳, Iran*

A Mahani - *Department of Electrical Engineering Shahid Bahonar University of Kerman, Kerman ۷۶۱۶۹۱۳۳, Iran*

خلاصه مقاله:

Wireless sensor networks (WSNs) consist of a large number of sensor nodes that allow users to accurately monitor a remote environment by intelligently combining the data from the individual nodes. These networks require robust wireless communication protocols that are energy efficient and reliable. Due to energy capacity limitation of sensors, enhancing the lifetime and the reliability of WSNs are essential factors in designing of these networks. Among many approaches, clustering of sensor nodes is proved as an effective method to reduce energy consumption and increase the lifetime of WSNs. In this paper, a new Energy-efficient multi-level Clustering Protocol (EWCP) is proposed. Cluster heads (CHs) are selected based on the allotted weight to each sensor nodes. The weight includes the essential parameters such as density, residual energy and distance, to prolong the lifetime of the network and increase its efficiency. Then, the cluster members are selected based on their distance to the selected CHs. Comparing with the other benchmark protocols, the lifetime of EWCP is improved significantly. This improvement is attributed to the fact that EWCP is equipped with energy-efficient parameters in clustering protocol.

کلمات کلیدی:

Wireless Sensor Networks (WSNs), Clustering of WSNs, Weight-based Clustering

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