Abstract

In recent years, Mobile sensor networks (MSNs) are significantly developed in various areas of applications. The most important feature of MSN is that the sensor nodes are small size, limited processing, low power and can able to change their location. In mobility, life time of the sensor nodes is the most critical parameter. Designing the energy efficient and reliable routing protocols for these applications is a great challenge task due to topological change of the networks and resource limitation in the environment. Existing energy efficient cluster based routing protocols like LEACH-M, LEACH-ME, and CBR-Mobile are designed for mobile sensor network which is efficient transmission of sensor nodes. But these protocols are not concentrating the well-organized cluster formation. So there is increase the end-to-end data transmission delay and more energy consumption. Therefore this paper propose an Energy Efficient Density Based Clustering for Mobile node (EEDBC-Mobile) algorithm which is on the density based clustering where as DBSCAN algorithm is used for cluster formation that are significantly more effective in discovering clusters of arbitrary shape. Then cluster head selection process is according to a node residual energy, Mobility and density such as node closeness to its neighbours. It also achieves quite uniform cluster head allocation across the network. A careful selection of the cluster head selection parameters can balance load among cluster heads. The Experimental results demonstrate that EEDBC-Mobile algorithm
outperforms LEACH-Mobile in terms of the Energy consumption, Network life time, Throughput, Delay and Data Delivery ratio.

References

- Jiawei Han, Micheline Kamber, &quot;Data Mining: Concepts and Techniques&quot;, Morgan Kaufmann Publishers, 2002.

**Index Terms**

Computer Science  
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**Keywords**

Mobile Sensor Network  
Mobility  
Energy efficient  
k-density  
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