Abstract

Wireless Sensor Networks (WSNs) are gaining a lot of recognition, since it has extensive areas of applications. These networks consist of tiny sensor nodes, powered by a battery source having less power and computational capabilities. These nodes are mostly deployed in remote areas where it is very difficult to replace their batteries. As battery power is a crucial parameter in the algorithm design, a system based on clustering using a genetic algorithm has been proposed to maximize the lifespan of sensor nodes. In this clustering algorithm, energy is distributed and network performance is enriched by choosing cluster heads on the basis of (i) the remaining energy of sensor nodes (ii) nearest hop distance between the sensor nodes and (iii) trust of the sensor nodes. To further enhance the network lifetime, the proposed algorithm
additionally implements a multihop routing mechanism from source sensor nodes to destination sink using intermediate cluster heads. To prove the effectiveness, this proposed algorithm has been simulated using Matlab and compared with "Design and Implementation of a New Energy Efficient Clustering Algorithm using Genetic Algorithm for Wireless Sensor Networks"[11]. From the result analysis, it has been shown that the proposed algorithm is far better in terms of energy efficient than the (DINEECAGA) [11].

References

- Norouzi, Ali, and A. Halim Zaim. "Genetic algorithm application in optimization of

**Index Terms**

Computer Science

Wireless

**Keywords**

Genetic Algorithm  Cluster Head  Clustering  Wireless Sensor Network  Trust  Multihop.