Abstract

In Wireless Sensor Networks (WSN) nodes communicate with each other and their Base Station (BS). Since, the networks are battery operated and are deployed in challenging areas utilizing the resources effectively is a must. Clustering solves the issue of resource allocation to a great deal with proper selection of the cluster head (CH). The proposed work uses Mamdani Fuzzy interface. The fuzzy rules are defined on the basis of Centrality of the node, bandwidth, energy and probability. Once the CH is selected and task assigned to the node a mitigation process is proposed to reallocate the nodes with the resources and update the network. The updated resources manages the energy and bandwidth more efficiently without compromising the time. The results observed confirms that the proposed algorithm performs better than SEP, TSEP, ETSEEP, and base algorithms in terms of energy, time and throughput.

References

1. W. R. Heinzelman, A. Chandrakasan, and H. Balakrishnan, “Energyefficient
Fuzzy based Enhanced Clustering Protocol using Mitigation for Multi-Hop in WSN


18. Z. Arabi, “HERF: A hybrid energy efficient routing using a fuzzy method in wireless...


Index Terms

Computer Science Fuzzy Systems

Keywords

Energy efficiency, fuzzy type, mitigation, WSN