Abstract

One of the active research fields in wireless sensor network is that of coverage. Coverage can be defined as how well each point of interest is monitored by sensor network. In addition to coverage it is important for a sensor network to maintain connectivity. Both of these are measure of quality of service of wireless sensor network. In this paper we have improved Coverage and connectivity in heterogeneous wireless sensor network. Routing protocol for coverage and connectivity (RPCC) is proposed in which point coverage as well as connectivity is enhanced. In this paper both CCPRP and RPCC algorithms are compared in two level and three level heterogeneous network. In two level heterogeneous network RPCC provides 68% more increase in service time with 100% sensing coverage ratio. In three level heterogeneous network RPCC provides 21% more increase in service time with 100% sensing coverage ratio and connectivity is maintained till 5551th round in case of RPCC as comparison to 2833th round in CCPRP.

References

- Amitabha ghosh and Sajal k. Das, Department of Computer Science and Engineering,
- Xin Liu, Department of Computer Science University of California, "Coverage with Connectivity in Wireless Sensor Networks"; NSF.
- Nurcan Tezcan, Wenye Wang, Department of Electrical and Computer Engineering North Carolina State University, "Effective Coverage and Connectivity Preserving in Wireless Sensor Networks".
- S. Kumar, T. -H. Lai, A. Arora, Barrier coverage with wireless sensors, in: Proceedings
- S. Sor o, W. B. Heinzelman, Cluster head election techniques for coverage preservation in wireless sensor networks, Ad Hoc Networks (Elsevier) 7 (5) (2009) 955-972.

**Index Terms**

Computer Science

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Improved Routing Protocol for Coverage and Connectivity (RPCC) in Heterogeneous Wireless Sensor Network (HWSN)

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