

A novel approach to maximize network lifetime using novenary network model in WSN

Sushree Pradhan¹

Sambalpur University Institute of information Technology, India¹

Network lifetime (NL) maximization techniques have been emerged as one of the most significant field of Wireless Sensor network. These techniques are used for extending the duration of the operations in battery-constrained wireless sensor networks (WSNs). It has become a critical issue to deal with a node failure where one node failure may cause the total network's operational failure. So efficient energy utilization is equally important for survival of fully operational network for the longest possible time period. I consider a network of wireless sensor nodes distributed in a region. Each node has a limited energy supply and generates information that needs to be communicated to a sink node. The focus of this paper is on the computation of optimal transmission powers, rates which can maximize the network lifetime. The network is considered to be alive as long as all nodes have some energy; the lifetime is taken to be the earliest time at which a node runs out of energy. In the network, basically due to uneven distribution of load some nodes in the network dissipate heavy power than other nodes causing dry of battery early and results in the nodes failure. The WSNs lifetime totally depends on the lifetime of the battery. Generally defined as the time duration in which the network is operational. In this paper the load is distributed on each node to maximize network lifetime (MNLT) as a whole keeping in mind to maximize the life time of each node and to minimize the average power consumed by the network, to the individual node, here the proposed model have been found that by a small increase in Novenary Network Model(NNM) percentage can increase the large percentage in terms of the total network lifetime when, compared it with conventional lifetime, hence the lifetime of this proposed network model can be extended.