

Node Optimization in Wireless Sensor Network: An Energy Approach

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Abstract : Wireless Sensor Network (WSN) is an emerging technology, which has great invention for various low cost applications both for mass public as well as for defence. The wireless sensor communication technology allows random participation of sensor nodes with particular applications to take part in the network, which results in most of the uncovered simulation area, where fewer nodes are located at far distances. The drawback of such network would be that the additional energy is spent by the nodes located in a pattern of dense location, using more number of nodes for a smaller distance of communication adversely in a region with less number of nodes and additional energy is again spent by the source node in order to transmit a packet to neighbours, thereby transmitting the packet to reach the destination. The proposed work is intended to develop Energy Efficient Node Placement Algorithm (EENPA) in order to place the sensor node efficiently in simulated area, where all the nodes are equally located on a radial path to cover maximum area at equidistance. The total energy consumed by each node compared to random placement of nodes is less by having equal burden on fewer nodes of far location, having distributed the nodes in whole of the simulation area. Calculating the network lifetime also proves to be efficient as compared to random placement of nodes, hence increasing the network lifetime, too. Simulation is been carried out in a qualnet simulator, results are obtained on par with random placement of nodes with EENP algorithm.

Keywords : energy, WSN, wireless sensor network, energy approach

Conference Title : ICGHOST 2020 : International Conference on Ghost Conference

Conference Location : ghost city, Other

Conference Dates : December 12-13, 2020