Evaluation of Lifetime Performance for WSNs by the Arrangement of Sensor Nodes

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ABSTRACT

In this paper some factors of analyzing to promote the energy efficient, increase the accuracy of sensing data and prolong the lifetime of sensor nodes for WSNs (wireless sensor networks) is proposed. On the basis of adopting sensor management includes sensor movement sequence and sensor location arrangement the issue of lifetime requirement for sensor nodes which deployed surround surveillance environment and the data fusion center are addressed too. First of all, the lifetime performance of the sensor nodes defeated by some parameters around the WSNs is illustrated. Such as, the sensing range, the path loss factor, the number bits of a transmitted packet, and the interference suffered in the transmission path etc.. Furthermore, the algorithm of sensor location arrangement is modified for the purpose of improving the lifetime performance in WSNs environments. According to the simulation results which definitely show that the proposed algorithm in this paper is not only to improve the energy efficient sufficiently, but the sensing accuracy and the lifetime performance of the sensor nodes are also obtained significantly promoted.

Keywords : : lifetime, path loss factor ; sensing distance, sensor location arrangement, ; WSNs, wireless sensor networks

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