

Firefly Algorithm based Optimization of Cluster Head Election

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Abstract –Sensor nodes in WSN are powered with a battery. Sensor nodes consume the battery power mainly in the tasks like data transmission, data reception and sensing. Sometimes it is impractical to replace a battery in WSN because humans can't reach. Therefore once energy or computational resources are consumed, immediate recovery of these resources is a complex task so it is necessary to make use of battery power efficiently to increase the lifetime of the sensor nodes that will also increase the lifetime of the whole network. This paper is based on indoor wireless sensor networks, in conjunction with an appropriate management methodology that allows us to analyze and verify the behaviour of these wireless networks in an internal way. To make WSN energy efficient and to increase the lifetime of the network, this paper presents an energy efficient clustering algorithm optimized by Firefly Algorithm (FF). Performance of this approach is evaluated using certain evaluation parameters; Throughput and Network Lifetime.

Keywords –FF, LEACH, WSN.