

Artificial Bee Colony Algorithm based Optimized Cluster Head Election

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Abstract –Thanks to the great steps taken in recent years in technological development, and in particular microelectronics and wireless communication techniques, small networked and inexpensive communicating sensors are increasingly being used in industrial applications and observation of the environment. However, the use of wireless sensor networks in such applications has to face several limitations imposed by sensors such as processing capacity, small memory size and energy. Or the limits imposed by the network itself, such as the narrow bandwidth, the network dynamics due to the topological variation of the network and the appropriate communication protocols adapted to this type of network. In this paper, we test Low-Energy Adaptive Clustering Hierarchy (LEACH) and Artificial Bee Colony optimized LEACH based cluster head election under a few distinctive situations holding high level heterogeneity to low level heterogeneity. The performance comparison metrics are; network lifetime and network throughput.

Keywords – ABC, LEACH, Sensor Nodes, Wireless Sensor Networks.