Power saving by incorporating mobile agents and clustering approach in wireless sensor networks

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Abstract

Roaming a mobile agent in an individual network for data aggregation implies high latency. However, generating multiple mobile agents in series overcomes the latency limitation; Conversely, dispatching several mobile agents consumes more power to invade the network. The power consumption problem can be reduced by combining mobile agent and clustering approaches, to avoid the mobile agent to visit each sensor node. The clustering approach is to aggregate the sensed data into the cluster heads instead of sending all sensed data to the sink. Furthermore, the mobile agent is to collect aggregated data from cluster heads; this incorporation improves the migration cost of mobile agents and power saving. In this paper, incorporating mobile agents and clustering approaches reduces the power consumption of data aggregation relative to exclusive clustering approaches in wireless sensor networks.

Keywords: *component; wireless sensor network, mobile agents and clustering algorithm.*