Abstract

Sherin M. Youssef

New Approach for Optimal Query sensor Cover in Self-Organized Wireless Sensor Networks

A new approach has been introduced that integrates an evolutionary-based mechanism with a distributed query sensor cover algorithm for optimal query execution in self-organized wireless sensor networks (WSN). Our objective is to self-organize the network, in response to a query, into a topology that involves an optimal subset of sensors that is sufficient to process the query subject to connectivity, coverage, energy consumption, cover size and communication overhead constraints. Query processing must incorporate energy awareness into the system by reducing the total energy consumption and hence increasing the lifetime of the sensor cover, which is beneficial for large long running queries.