Energy-efficient Irregular Multicast Routing Strategies for Mobile Sensor Networks

歐陽雯, 許倫嘉

Computer Science & Information Engineering

Computer Science and Informatics

ouyang@chu.edu.tw

Abstract

For mobile sensor networks, part or all of the nodes are with moving capabilities. It's essential to find energy-efficient routing path for nodes to communicate with each other. Broadcast and multicast are important issues in mobile sensor networks and much work has been done in finding energy-efficient routing methods for the broadcasting and multicasting process. In previous methods, the possibility of having different query-receiving probability between nodes was not considered. We consider a novel problem, namely irregular multicasting problem with the situation when nodes in the network may have different probabilities of receiving queries from the base station. Then, a new protocol, called Distance Confined Multicast Routing (DCMR), is proposed to solve this routing problem efficiently. Simulation demonstrated that DCMR is more energy-efficient and energy-balanced than the previously proposed methods.

Keyword：Mobile sensor network, multicast, broadcast, irregular multicast, query, base station, frequency