Abstract

Mobility of sensor node in Wireless Sensor Network (WSN) is one of the key advantages of wireless over fixed communication system. But to track the sensor node in the heterogeneous network is more challenging and difficulties. In heterogeneous system, generally power consumption is more then homogeneous system. Thus, tracking the location of sensor node is not only one of the challenges for location management but to prolong the system lifetime is also very much important in WSN. Fuzzy application is a new era in communication system. Using fuzzy in heterogeneous system, can easily track the sensor node and consequently prolong the system lifetime. In this paper we introduce a movement pattern learning strategy...
system to track the node's movement using adaptive fuzzy logic. Every node of different category identified as a cell in a location. Here fuzzy inferences system extracts pattern from the past data records as occupying cell number, date and time of sensor node of particular type. Here in this paper this strategy has been implemented and we propose a mathematical model, that model has been verified with real time data. This mechanism reduces sensor node's location tracking cost. All together overall it prolong the system lifetime. Here in this paper we have discussed and proposed a mathematical model to find an optimal solution to optimize energy consumption of the sensor node and to maximize system life time. Through an extensive simulation results show that the proposed model has good performances in the aspects of energy consumption and efficiency of the system network to prolong the system life time.

References


**Index Terms**

Computer Science  
Emerging Trends in Technology

**Keywords**

Sensor Nodes  
System Life Time  
Fuzzy Logic  
Wsn  
Node Deployment  
Fuzzy Inference System