Abstract

With the growing demand in wireless sensor network (WSN), adversary attack on sensor node becomes major issue in current WSN deployment. The replica nodes which are generated by attackers receive the valuable information from the network in turn sends to the adversaries and at the same time transmits inappropriate message to the sink in the sensor networks. One of the existing works presented Sequential Probability Ratio Test (SPRT) which reduces the overhead of sensor node transmission on the adversary conditions. However, the sensor node’s mobility affected the query range being invoked for detection of replica node location with probability ratio. The energy efficiency of the sensor node also needs to be monitored for effective adversary sensor node detection using SPRT. Our proposed work extends replica detection scheme of probability ratio test with Finite Range Query (FRQ) technique to effectively identify the mobile replica nodes (acting as adversary) and eliminate the varying query ranges of mobile sensor nodes. In addition energy efficiency of the sensor nodes are improved by minimizing the message query transmission on data aggregation.

References

- J. Ho, M. Wright, and S. K. Das, "Fast Detection of Replica Node Attacks in

Index Terms

Computer Science

Keywords

Finite Range Query (frq)  sequential Probability Ratio Test (sprt)
Energy Efficient Finite Range Query Scheme for Detecting Mobile Adversary Replica Nodes in Wireless Sensor Networks