Abstract

In wireless sensor networks (WSNs), data transmission is secured by authenticating secret keys. Secure key management is most important for network reliability and consistency. In this paper, a hierarchical group key management technique using threshold cryptography in Wireless Sensor Networks is proposed. The technique considers hierarchical sensor network, where sensing nodes are coordinated by forwarding nodes (FN) and in turn they are connected to the BS which is responsible for key computation and distribution. FN estimates the group key using threshold secret sharing scheme. The acquired group key is divided into multiple shares and shared among member nodes. Thus, this reduces the possibility of key compromised. The proposed technique is simulated using network simulator 2 (NS-2). Simulation results show the proficiency of the technique.
Hierarchical Group Key Management using Threshold Cryptography in Wireless Sensor Networks

- Network Simulator: http://www.isi.edu/nsnam/ns

Index Terms

Computer Science

Wireless
Keywords

Wireless Sensor Networks (WSNs)  Forwarding Nodes (FN)  Key Management