Abstract

Wireless Sensor Networks (WSNs) consist of a large number of sensor nodes that are batteries powered, equipped with limited memory and computational capabilities. These constrained devices face many security threats and thus there is a need of some cryptographic mechanism for secure communication. Key distribution is of critical importance to provide security in WSNs. Till now a number of key distribution schemes are proposed in the literature but there are very few schemes considering mobility of sensor nodes. In this paper we have proposed a modification to the key management scheme supporting node mobility in heterogeneous sensor network. Our modification uses Hash collision keys to improve the network resilience and connectivity between the nodes. We have evaluated our scheme analytically and obtained results show that our proposed solution assures better network connectivity and resilience while increasing an insignificant computational overhead.

References

Improving Key Management Scheme Supporting Node Mobility in Heterogeneous Sensor Networks using Collision-Keys

H. Zhao, J. Hu, J. Qin, V. Varadharajan and H. Wan, "Hashed Random Key Pre-Distribution Scheme for Large Heterogeneous Sensor Networks," IEEE 11th Int. Conf. on Trust, Security and Privacy in Computing and Communications, 2012.


Index Terms

Computer Science

Wireless
Keywords

Wireless Sensor Network (WSN)  Heterogeneous sensor network  Resiliency
Auxiliary Node (AN)

Mobile node

Key management