Abstract

Wireless Sensor Networks are vulnerable to communication failures and security attacks. It is quite challenging to provide security to data aggregation. This paper proposes Authenticated Data Aggregation for Wireless Sensor Networks, where the nodes organize themselves into tiers around the sink. Message Authentication Code (MAC) is generated and transmitted along with the synopsis to ensure integrity. All nodes in the network store the same key that is used for rekeying operation during each round to generate MAC. Thus ADA ensures data freshness and integrity at a communication cost of $O(1)$. Simulation results show that the proposed ADA protocol results in high security, low energy consumption and low communication cost compared to the state-of-the art protocol.

References

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Index Terms

Computer Science  Wireless

Keywords

Data aggregation, Synopsis, Tiers, WSN.