



Research Article



A Novel Data Aggregation Methodology for Secure Data Gathering in Wireless Sensor Networks

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ABSTRACT

In Wireless Sensor Network (WSN), data aggregation is

used to have efficient data transfer between sensor nodes and base station. Data aggregation makes use of aggregate functions such as Count and Sum in order to reduce communication overhead and improve performance of WSN besides making it energy efficient. Thus, the network lifetime is increased. However, it is understood from the literature that there are many attacks launched on aggregation functions. Thus, it is inevitable to have secure aggregation in WSN. If not the aggregated data might have false contributions in sensing. There is relationship between security and data aggregation. When data aggregation process is not secured, it results in biased or compromised data collection that leads to potential risks to real world sensor applications. The aim of this paper is to investigate secure aggregation techniques and provide a new scheme based on iterative filtering that enhances secure data aggregation process. NS2 simulations are used to demonstrate proof of the concept.

Keywords: Wireless Sensor Network, data aggregation, security, aggregate functions

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