Abstract

Wireless networks and wireless sensor networks (WSNs) provide great benefits over the traditional approaches for several applications. These include smart homes, healthcare, environmental monitoring, and homeland security. WSNs can be integrated with the Internet Protocol (IP) to develop the Internet of Things (IoT) for connecting everyday life objects to the internet. Hence, major challenges of WSNs include:

To efficiently utilize low-power nodes to implement security during data transmission among several sensor nodes.

To resolve security issues during data transmission over a long coverage range.

Encryption is a vital process to ensure the confidentiality of the information transmitted over the insecure wireless channel.
In this paper, a study of various algorithms for secure wireless transmission was performed. To facilitate energy-efficient data encryption, a method based on efficient key generation mechanism was required. The proposed TBSA based system gives an outstanding performance by fulfilling all the necessary security requirements. The experimental results showed that the proposed TBSA algorithm consumed less energy in comparison with some other existing methods.

References


Index Terms

Computer Science  Wireless

Keywords