Abstract

Due to significant advancement in network technology, wireless information gathering communication system has attracted a great attention in recent years. Wireless sensor network (WSN) is also such type of information collecting system which works autonomously with the help of tiny sensors. These tiny sensors form a network in such a way that they not only sense the information but also store this collected information at one place to the super node. This super node is also known as base station. WSNs are easily compromised due to wireless activity and unattended environment. Many secure symmetric key cryptography algorithms such as DES, AES and IDEA are used to achieve information security in the traditional network are not suitable in WSNs due to limited resource and computing constraints sensor nodes. There is currently enormous research potential in the field of wireless sensor network security. In this paper, we have presented a pairing based encoding scheme (PBES). This scheme is based on the pairing method. PBES scheme uses multiple encoding schemes which are very useful in WSNs to achieve security. The use of multiple encoding schemes along with light weight encryption scheme is economical in WSNs than using a heavy cryptography algorithm. The key size used in this method to secure the WSNs is very small. Simulation results show that this scheme is very efficient than any other types of heavy symmetric key cryptography algorithms.
References

Index Terms

Computer Science  Wireless

Keywords

PS  CPS  SPS  PBES  WSNs