Abstract

In multi-hop wireless sensor networks (WSNs), Optimization and security are two different design issues with non-refill energy resources. In this paper, we first introduce secure and efficient Cost-Aware Secure Routing (CASER) protocol to point two different issues by two specifications: energy balance control and possibility based random walking. Then we find that the energy loss is randomly for the given network topology, which very much reduces the lifetime of the sensor networks. To overcome this problem, we introduce an efficient random energy deployment approach to increase the lifetime and message sending part in the similar energy source and security requirement. We also provide a computable security analysis on
the proposed routing protocol. In this introduced CASER protocol which provides best deal between routing efficiency and energy balance, and significantly increases the lifetime of the sensor networks in all sides. For the random energy distribution, our analysis shows that we can increase the lifetime and the total number of messages that can be delivered by more than four times under the same assumption. In introduced CASER protocol, we show that it can produce a high message delivery ratio when secure routing from trace back attacks.

References

- C. V. Swathi1, Mrs. Nagarathna2, "Energy Efficient Routing Protocol with Secure Hash Algorithm for Multi Hop WSN"; International Journal of Research In Science & Engineering Volume: 1 Special Issue: 2
- B. Sireesha1, G. TagoreSai Prasad2, "an alternative secured and efficient routing strategy for wireless sensor networks"; (IJETER), vol. 3 no. 6, (2015)
- Mrs. Gowsiga, Dr. P. Senthil Kumar "a review study of various routing protocols based on routing information update mechanism of mobile ad hoc networks"; (IJERA) International Conference on Humming Bird (01st March 2014)
- Salonee Mishra and Binod Kumar Pattanayak "power aware routing in mobile ad hoc networks: a survey"; vol. 8, no. 3, march 2013.
- Junmo Yang, Kazuya Sakai, Bonam Kim, Hiromi Okada, and Min-Te Sun "Cost-Aware Route Selection in Wireless Mesh Networks";
- Roshni M. Bhave, Prof. Vijay Bagdi "Recovery of Nodes Failure in Wireless Sensor Network Using CASER Protocol and DARA"; Review; Volume: 3 Issue: 2
Index Terms

Computer Science

Wireless

Keywords