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Abstract

In this work, the main focus is to provide Security in WSN (wireless sensor networks) as well as to provide the strategy to collect the high speed data in an efficient manner. Sensor networks are usually deployed in hostile and unattended environment where an adversary can read and modify the content of the data packet. In such situation the most popular type of attack is the external attack and replay attack. The node needs to be authenticated before data transmission takes place. In external attack the node does not belong to the network try to read and modify the packet. For that we also need to authenticate the node before data transmission. To overcome this problem we are using the concept of public and private key (Modified RSA Digital Signature Scheme). So this work tries to develop an algorithm which will form a network structure in wireless sensor network through which data can be transmitted faster to the base station without affecting life time of network and it also provide the security during communication. The cluster head in a cluster is generally involved in long distance transmission that's why its energy level decreases faster than other cluster members in a cluster. To overcome this problem we used the concept of re-clustering to rotate the responsibility of cluster head among the cluster members in a cluster so that energy can be

properly distributed among the nodes.

Refer

ences

- Yao, Y. and Gehrke, J. , September 2002. The cougar approach to in-network query processing in sensor networks. In SIGMOD Record.
- Karlof, Chris. and Wagner, David. , September 2003. Secure routing in wireless sensor networks: Attacks and countermeasures. Elsevier's AdHoc Networks Journal, Special Issue on Sensor Network Applications and Protocols, vol. 1, issue 2-3, pages 293–315.
- Newsome, James. Shi, Elaine. Song, Dawn. and Perrig, Adrian. The Sybil attack in sensor networks: analysis& defenses. In IPSN&04: Proceedings of the third international symposium on Information processing in sensor networks 2004, pages 259–268, New York, NY, USA, ACM Press.
- Anthony D. Wood and John A. Stankovic. , 2002. Denial of service in sensor networks", IEEE Computer, vol. 35, issue 10, pages 54–62.
- Heinzelman, W. R. Chandrakasan, A. and Balakrishnan, H. , October 2002. An Application-Specific Protocol Architecture for Wireless Microsensor Networks. IEEE Transactions on Wireless Communications. Vol. 1(4), pp. 660-670.
- Lindsey, S. and Raghavendra, C. S. PEGASIS: Power-efficient Gathering in Sensor Information System. Proceedings IEEE Aerospace Conference Mar, 2002, vol. 3, Big Sky, MT, pp. 1125-1130.
- H"useyin Ozg"ur Tan. and Ibrahim K Orpeoglu. , 2003. Power efficient data gathering and aggregation in wireless sensor networks. ACM Sigmod Record, 32 (4): 66–71.
- Sun, Xianwei. C-H Huang, Scott. and Li, Minming. , 2012. Data collection time in sensor networks", In Wireless Algorithms, Systems, and Applications, pages 120–131. Springer.
- Wang, Weizhao. Wang, Yang Li, Yu. Wen-Zhan Song, Xiang and Frieder, Ophir. Efficient interference-aware TDMA link scheduling for static wireless networks. In Proceedings of the 12th annual international conference on Mobile computing and networking, 2006, pages 262–273. ACM.
- Chatterjee, M. Das, and Turgut. , 2001. WCA: a weighted clustering algorithm for mobile ad hoc networks. Cluster Computing, Vol. 5, No. 2, pp. 193–204.
- Cheng-Hsi and Wu Tzung-Pei Hong, "An Improved Weighted Clustering Algorithm for Determination of Application Nodes in Heterogeneous Sensor Networks", Journal of Information Hiding and Multimedia Signal Processing, Vol. 2, No. 2, pp. 173-184, (2011).
- Bathla, Gaurav. Khan, Gulista. ,2011. Energy efficient routing protocol for Homogeneous WSN, International Journal of Cloud Computing services and Architecture(IJCCSA), Volume 1,Number 2.
- Khan, Gulista. Ali, Wajid. Arya, Swati. Sharma, Vaibhav. , Feb 2014. Green Routing Strategy For Dynamically Arranged Omogeneous Wsn- Msct2, International Journal Of Computers & Technology, Vol 12, No. 6.
- Heinzelman, W. R. Chandrakasan, A. and Balakrishnan, H. , Energy Efficient Communication Protocol for Wireless Microsensor Networks. in Proceedings of the 33rd Hawaii International Conference on System Sciences (HICSS&00), Jan, 2000, Maui, HI, pp.

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Computer Science

Index Terms

Networks

Keywords

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algorithm base
station
modified RSA digital signature scheme
re-clustering process and QoS parameters.