Efficient Energy and Data security in Wireless Sensor Networks

R. Jegan[1], Mr. S. Venkatesh ME (CSE) [2]

PG Student, Department of Computer Science and Engineering, Valliammai Engineering College, Chennai[1]

Assistant Professor, Department of Computer Science and Engineering, Valliammai Engineering College, Chennai[2]

Abstract: The basic architecture of Wireless Sensor Networks are usually a Hybrid type where it is a combination of Infrastructure Oriented and Infrastructure less Networks. The Communication from sensor to sensor head takes place through p2p Architecture (Infrastructure less) and the communication from Cluster Head to Base Station involves Broadcast Based(Infrastructure Oriented).This Hybrid Architecture is to reduce the Energy Consumption of Sensor nodes as it will be depleted soon when each sensor broadcasts sensed data to Base station as and when senses. Hence a Cluster Head will be elected for each cluster by considering the battery, Memory and processing ability. All the Sensors will be sending their sensed data to the Cluster Head in a p2p manner. this is process we can improve the energy of wireless sensor and secure method of deal. The Elagamal algorithm has three main parts: 1.secure data transaction, 2.Encryption, deception 3.Signature based secure.

Keywords: Energy efficient in wireless sensor, data security, reduces overlape, data aggregation.

1. INTRODUCTION

A wireless sensor network is the method spatially dispersedseparate sensors to monitor physical of environmental conditions, fever, superficial, force, etc. and to compliantly pass their data through the network to a main location. Then more models networks are bi-directional also enable can control sensor activity, now days such networks are used in many industrial consuming application, datatrans missing of multiple network connected one base station.in this paper cluster based group sensor connected and using data transmission to using shortest path algorithm. Save the energy of wireless sensor networks.

The main aim of this project is to construct a energy efficient Wireless Sensor Network and to transmit the sensed data in a secure way, reaching the Base Station, for apply Data Prediction strategies. We are proceed to three module of this paper data secure, shortest path algorithm and sensor energy consummation process.

The Communication from sensor to sensor head takes place through p2p Architecture (Infrastructure less) and the communication from Cluster Head to Base Station involves Broadcast Based(Infrastructure Oriented).This Hybrid Architecture is to reduce the Energy Consumption of Sensor nodes as it will be depleted soon when each sensor broadcasts sensed data to Base station as and when senses infrastructure places all network support and communication available places is infrastructure area easy to access and infrastructure less area rural area low message area can access to use of the architecture.

In this paper elagammal algorithm is using to group based connected the wireless sensor, mass is collection client is attach to one part. This is process we can improve the energy of wireless sensor and secure way of business.

2. RELATED WORK

In this paper author used in mobile sensor network applications, sensors move to increase many of the area coverage and to compensate for the failure of other sensors. In some applications, loss of sensor data, and missing sensor data, its happened to various reasons, powerconsummation, missing sensor data. In this module way to develop a technique that can effectively and efficiently find the missing data and access the missing data can read. In converts mobile sensor readings into virtual fixed sensor readings and applies the revealed relationships on virtual static sensor readings to estimate the values of the missing sensor data.

DEMS concept to mobile sensor reading data set convert into virtual sensor and its estimate real time of sensor and finding missing dataset to improve life time of sensor .In this paper a novel concept using to find the issues addresses of mobile sensor networks utilizing the virtual static sensors. We are going to establishes these virtual static sensors to divide the entire monitoring data area.it converts to reading data and missing data of wireless sensor .When mobile sensor reading is missing that it discovers based on the history virtual sensor readings to calculate the expected value of the misplaced mobile sensor.

This paper describes a tested for general practical involving Cooperating Objects. In this architecture co2evel same. It allows a multiple schemes including multi-robot, WSNs experiments and robot wsn cooperation working is peers. The main experiments already carried out, some of which are designated in this paper, focused on cooperative perception and robot-WSN collaboration for network repairing.

In this paper author used to Awireless sensor connect of more then sensor nodes which are deployed and connect to node gathered information detect and sensing physical

environment surroundings. Each node connect to based on energy and cluster head rotation process to depend upon the energy and mobility. Energy is important saving of sensor wsn sensor energy cannot easily recharge ad-hoc environment.to using shortest path algorithm to improve energy and communication speed. Head rotation based energy can improve and saving all sensor wsn.

In this paper data overlap reducing to transmission data putting packet after packet data sent destination will wait for time collect the packet to using broadcast technology sent the data to sent all base station and store database.

3. PROPOSED ALGORITHM

We Propose an Efficient hybrid data prediction technique with data Aggregation which can drastically reduce energy consumption of sensor nodes during communication. In data prediction the communication can be significantly reduced by avoiding transmission of each raw sample to the sink. This is achieved by using a model to estimate the sensed values, and by communicating with the sink only when there is a change in the sampled data when the Aggregation time out is triggered in cluster head. Each node is using a model to predict its own sensor data, and compares the predicted values with those actually observed and generates a confidence value.

1. In our Proposed Design we promise to give high authenticity of each sensing data and Integrity of the same in a recoverable environment for concealed Data Aggregation (CDA) by privacy Homomorphism Encryption Scheme using Ecc-Elgamal Signature in a Binary transmission for Three completely different Network Clusters.
2. Base Station can recover each sensing data as well as can compute on it. Overhead is greatly reduced as Cluster Heads of High and Hate Sensors can respond for Base Station Requests.
3. So communication cost is drastically reduced that a Low Cluster Network can also be deployed to a WSN.
4. Binary Transmission of data ,Encryption using Public Key ,Private Key ,Cluster Key and thus creating a Signature for each data and (Two Layer authenticity) verifying authenticity at both cluster heads and in Base Station helps to securely send data in huge WSN containing different clusters.
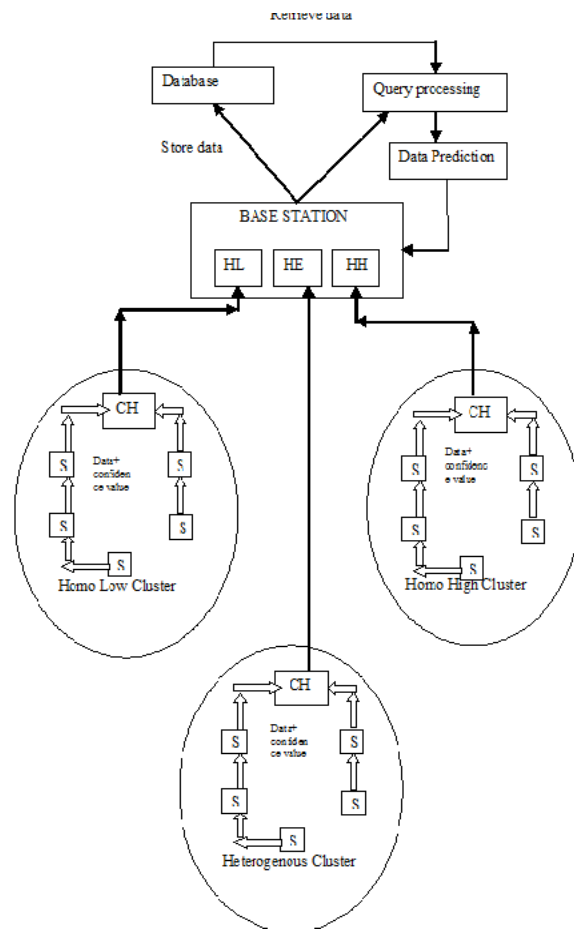
4. ALGORITHM

In this paper we are using elgammal algorithm, its a public keycryptosystemtechnique. .this this method message is encrypted a symmetric cryptosystem and elagammal is used to encrypt asymmetric crypto system.

Data Aggregation by privacy Homomorphism Encryption Scheme using Ecc-Elgamal Signature in a Binary transmission for three completely different Network Cluster.the secure communication process using to elagammalalgorithm,signature based on encryption and decryption transaction of data transfer secure communication Of binary transmission to stored the data base.

Sensors send its own sensing data to its cluster head as each and every sensor knows its own cluster head and generates a shortest path to reach it and transmits through it. Each Sensed data is converted into a packet and is encrypted and the cipher is subjected to signature generation process. The Cluster Head receives the encrypted cipher text and signature is verified and the data is aggregated. Cluster Head recovers the data and in Homo High and Hete and generated the signature using elgamal. For Homogenous Low and Hete Clusters only Aggregation process takes place as Homogenous low cluster is memory constrained.
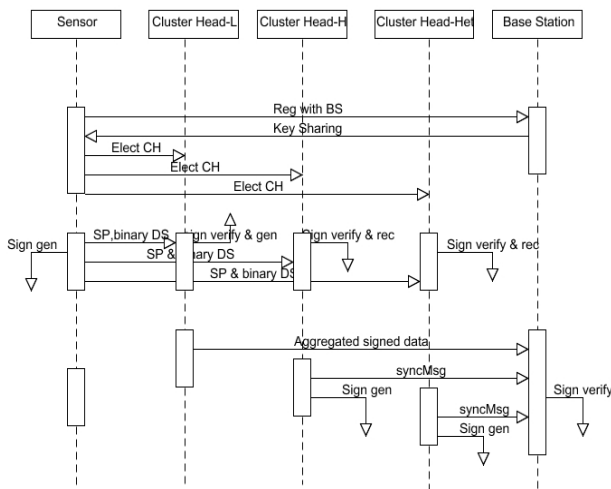
5. ARCHITECTURE DIAGRAM

6. RESULT

In this paper proved by using wireless sensor prediction the data and transfer the secure gate way of process.to using simple algorithm predicted the data to signature based algorithm to aggregation to binary transmission of data store the files.

To query processing to multiple data can store and not overlap of the data base, to Sensor consummation of transaction data store. The multiple data store and transaction ton shortest path transaction of the secure communication and cluster based connected to sensor depend upon energy and head rotation process and efficient energy process this paper. this is process we can

improve the energy of wireless sensor and secure way of transaction**.**

7. CONCLUSION AND FUTURE WORK

In this paper proved by using wireless sensor prediction the data and transfer the secure gate way of process.to using simple algorithm predicted the data to signature based algorithm to aggregation to binary transmission of data store.

To query processing to multiple data can store and not overlap of the data base,toSensorconsummation of transaction data store. The multiple data store and transaction on shortest path transaction of the secure communication and cluster based connected to sensor depend upon energy and head rotation process and efficient energy process this paper. this is process we can improve the energy of wireless sensor and secure way of transaction**.**

In this paper future work multiple wireless sensor network connect to cluster based depends on energy cluster head rotation and data transmission secure communication process wsn used in shortest path algorithm and data security in elgammal algorithm public key, signature and binary transmission secure way of communication in wireless sensor network**.**

REFERENCES

[1] L. Gruenwald, M. S. Sadik, R. Shukla, and H. Yang, "DEMS: a datamining based technique to handle missing data in mobile sensornetwork applications," in Proc. of the Int. Conf. on Data Mgmt. forSensor Networks (DMSN), 2010.

[2] T. Palpanas, M. Vlachos, E. J. Keogh, and D. Gunopulos, "Streaming time series summarization using user-defined amnesic functions," IEEE Trans. on Knowledge Data Engineering, vol. 20, no. 7, 2008.

[3] U. Raza, A. Camerra, A. Murphy, T. Palpanas, and G. Picco, "What Does Model-driven Data Acquisition Really Achieve in Wireless Sensor Networks?" in Proc. of the 10th IEEE Int. Conf.   on Pervasive Computing and Communications (PerCom), 2012.

[4] J. Polastre, R. Szewczyk, and D. Culler, "Telos: Enabling ultra-low power wireless research, in Proc. of the Int. Conf. on Information Processing in Sensor Networks (IPSN), 2005.

[5] O. Gnawali, R. Fonseca, K. Jamieson, D. Moss, and P. Levis, "Thecollection tree protocol," in Proc. of the Int. Conf. on EmbeddedNetworked Sensor Systems (SenSys), 2009.

[6] D. Moss and P. Levis, "BoX-MACs: Exploiting Physical and LinkLayer Boundaries in Low-Power Networking," Stanford InformationNetworks Group, Tech. Rep. SING-08-00, 2008.

[7] M. Ceriotti, M. Corr`a, L. D'Orazio, R. Doriguzzi, D. Facchin,S. Guna, G. P. Jesi, R.L.Cigno, L. Mottola, A. L. Murphy,M. Pescalli, G. P. Picco, D. Pregnolato, and C. Torghele, "Is therelight at the ends of the tunnel? Wireless sensor networks foradaptive lighting in road tunnels," in Proc. of the Int. Conf. onInformation Processing in Sensor Networks (IPSN), 2011.

[8] D. Tulone and S. Madden, "An energy-efficient querying frameworkin sensor networks for detecting node similarities," in Proc.of the Int. Conf. on Modeling, Analysis and Simulation of Wireless andMobile Systems (MSWiM), 2006.