Data Aggregation Strategy Using of WSN Increasing Network Lifetime Using READA

Amol Jadhav, Amol Kotkar, Sarang Metkar, Anil patil

Abstract— **Basic component is represented by the nodes in wireless sensor network. The sensor nodes consumes energy during sensing, constrained sensor networks. Averaging is method for aggregation data from multiple nodes. In Wireless sensor network resources like energy, powers etc. are limited. In this paper the monitoring system and READA technique will be used for the grouping and compression mechanism. In single target of interest the number of sensor nodes can detect simultaneously. Redundant and correlated data are collected and also data aggregation we reduce the energy consumption by eliminating redundancy. Energy will be wasted data aggregation we reduce the energy consumption by eliminating redundancy thus the network energy will be consume quickly. Redundancy Elimination for Accurate Data Aggregation (READA) uses a grouping and compression technique to remove duplicate or same type of data in the aggregated set of data to be sent to the base station without large amount losing data the of accuracy the final aggregated data. In WSN security and energy efficiency issues are found.**

Index Terms— **Wireless Sensor Networks, Network Lifetime, Collision attack, Data Aggregation techniques**.

I. INTRODUCTION

Wireless sensor networks are mostly redundant they are composed of nodes with the capacity of sensing, communication and computation. It is necessary to define the capability of computing due to limitations of the energy resource and computing power in sensor nodes, data is aggregated by extremely simple technique such as averaging and transporting special functions of sensor measured to the sink node. In network aggregation plays a very important role in enlarging such capacity for wireless sensing network. The aggregation technique is to be used to aggregate the sensor data effectively. This strategy enhances the network lifetime by gathering and aggregating the data in and for robustness of monitoring and minimum cost of the nodes, wireless sensor networks are usually redundant very efficient manner. The paper is organized as follows. Various strategies and techniques available for the lifetime maximization are given. It also described about the advantages and disadvantages related with all these solutions.

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Finally it proposes a new system using READA algorithm for exploring the network lifetime. A data aggregation framework on WSN's is presented and a survey on various energy-efficient mechanism for data aggregation.

II. WORK THAT ARE REQUIRED

Data packets can be traverse particular organizational, information domains or security in order to be results Delivered and processed. These calls for efficient organizational design approaches technique which include means for secure data transfer or receive. Various facts of secure information exchange are already being addressed by many researches. Data aggregation is done using following techniques.

A. Iterative Filtering Reputation Systems

This algorithm is used to reduced the energy consumption in an efficiently. It resolves the problem of the data aggregation. The literature on iterative filtering has been increased rapidly per day. The aggregation algorithm is used to detect and prevent from various attacks.

B. Concealed Data Aggregation Technique

Concealed Data Aggregation places more intensity on passive attacks. These are considers if adversaries can eavesdrop the communications on the air. After CDA, to achieve higher security levels succeeding research has been proposed. If sensors within the similar cluster encrypt their sensing data with a same secret key, by compromising only one sensor an adversary may decrypt the aggregated cipher text. Addition homomorphism public-key encryption proposed a data aggregation scheme. It looks like more secure since every sensor stores only public key protecting secure aggregation is a challenging task.

C. EPSDA Protocol

To prevents the replay attack by achieving data freshness during aggregation using ESPDA protocol, this performs the aggregation on encrypted data and reduced number of transmissions this increases the accuracy of the aggregated result.

D. Scaling Laws and Block coding and Parallel scheme

Scaling laws of the aggregation capacity for wireless sensing network. The main advantage of researching scaling laws is to overview qualitative and architectural properties of the system without getting bogged down by too whole details. The capability scaling laws of a network are directly determined by the adopted network models, including delivery models, scaling

models and transmission models, besides the pattern of traffic sessions.

E. Energy efficient routing protocol and EERDAT:

For WSN's EERDAT technique is reliable and energy efficient. This strategy is based on cluster formation technique. To decrease the energy consumption can be effectively measures the lost data in nodes in cluster. By using a coordinate node reliable communication can be given. The above literature analysis shows pros and cons of various protocols and methods. They will transmit the data to the base station. This paper uses a new data aggregation strategy called "READA*"*.

III. PROBLEM DEFINITION

In wireless sensor networking (WSN), when the environment is sensed the nodes are created, which transfer the collected data to the base station.

1. When the data in wireless sensor network are interrelated, multiple number of nodes available report similar readings to the base station.

2. When millions of redundant data are transmitted a very large amount of energy is wasted.
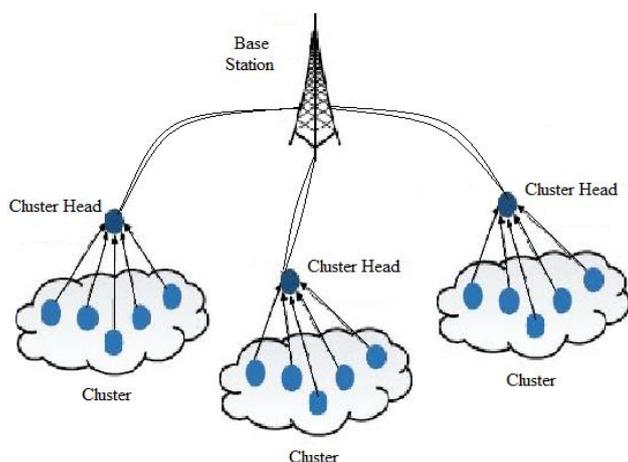

Fig III.I: Network Model for WSN

The figure shows that assumption for network model in wireless sensor network. The sensor nodes used in clusters and every cluster has a cluster head these acts as an aggregator. Data are periodically collected and generated by the aggregator. We provide a through empirical evaluation of the effectiveness and efficiency of our proposed aggregation using this method. The result shows that our method provides both better accuracy and higher collusion resistance than the previous methods.

IV. PROPOSED SYSTEM

Using READA technique Network lifetime of WSN's is increase by following way: For the proposed aggregation technique, the nodes will be arranged in clusters and one of them is work contribute cluster head. After that each cluster head is connect to the base station in aggregation technique.

They will sends the data to the base station. In this paper we use a new data aggregation technique called "Redundancy Elimination for Accurate Data Aggregation". (READA)

A. Data Aggregation

Aggregation technique will be performed by several ways that is monitoring system and event detection. In READA strategy aggregation will be manipulated by two ways that is monitoring system and event detection. First of all the observing system is used to search the sensor nodes. In this way two strategies will be used that is one of the compression and another grouping. For divination data grouping strategy is to be used. Sensor nodes with the similar profile and having a efficiently "small" scale factor are grouped to form new sensor nodes. This way the number of nodes can be reduced in linear time. The elevator is making from grouping expression. It first selects the elevator. Instead of transferring a single data that transmit the group of compressed data. Event detection strategy continuously monitoring the nodes and report an unused node.
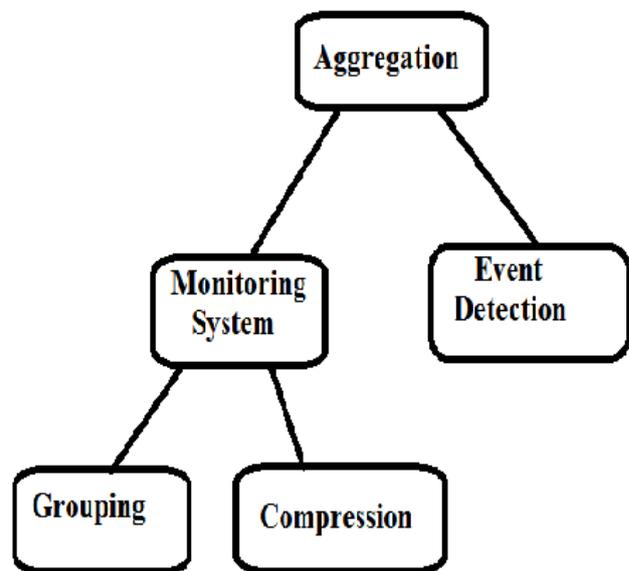

Fig III.II. Working Principle of the Data Aggregation**:-**

The working principal of WSN's strategy proposed architectural model illustrated below figure that starts working together choosing and selecting of nodes and divided into clusters. These clusters can satisfy the intended parameter conditions and requirements. The parameters like RSSI, MRIC, bandwidth, TTL, battery consumption are accustomed verify the amount of nodes that will be accommodated in a cluster. There after a cluster head [CH] is selected among nodes exist within the every cluster. Cluster head are going to be responsible for administration of all different nodes within the several clusters and grouping the data from the nodes within the cluster and information transferring to the neighboring cluster head for huge amount of information updating and exchange. The currently arrived nodes will be assigned as cluster head if the global cost of arrived node is reduced, else other cluster nodes are going to be give opportunity to global and participate cost is once more calculated. There after the data aggregation approach is presumed as the collection of data and numerous problems defines from the user end are checked and sends into minimum level schemes by a query processor. Data are aggregate and collected is stored at a storage location to the

database server. Finally at last the data is aggregated by data cube approach and each and every one the grouped data are going to be transfer to the base station.
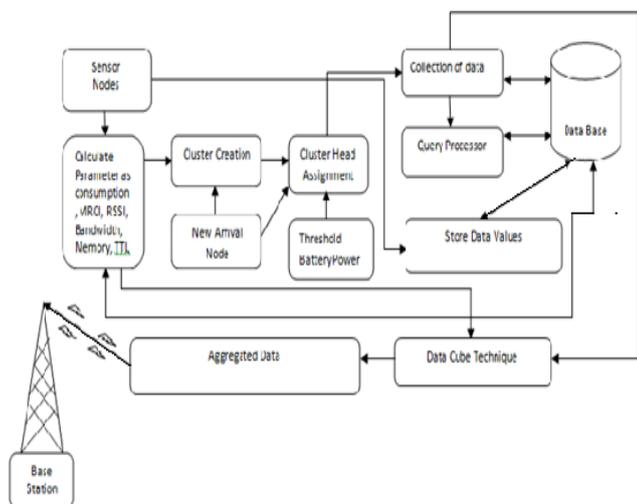

Fig: III.IV Architecture of Data Collection and aggregation for WSN.

IV. SYSTEM WORKS:-

The flowchart of proposed system work is given below:

In the below flow chart first of all the cluster head are connected to the N number of nodes, collecting the data and aggregating at cluster head then transfer the data to the base station.
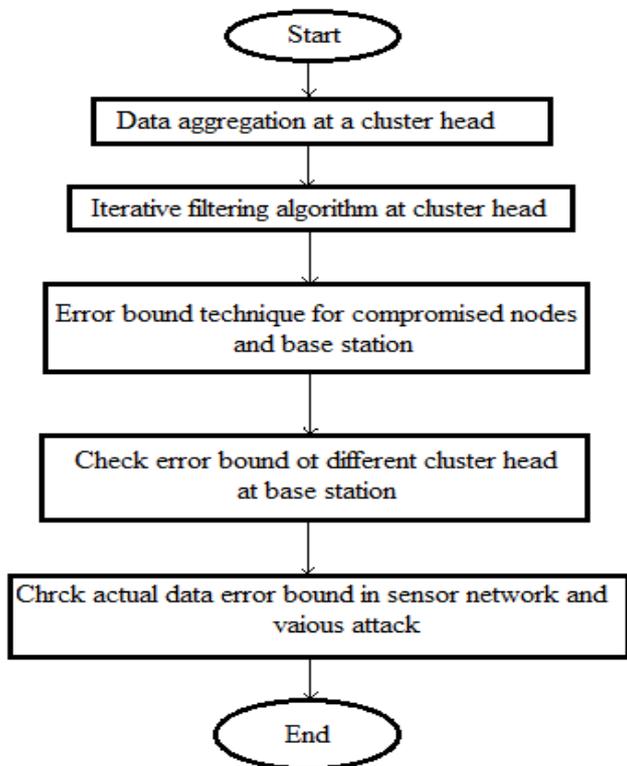

Fig IV.I Flow chart of proposed system

In next step will be apply the READA strategy provides the trust to the given sources. In this process some nodes are compressed by the attackers. To solve that error bound technique is used to

cluster head and find actual error bound and also various attacks.

V. SIMULATION RESULTS

In this simulation section study that examines efficiency of our data aggregation method .The objective of our practical is to introducing the efficiency and robustness of our approach for estimating the correct values of signal based on the sensor accurate readings in the presence of collusion and faults attacks. For every practical, we evaluate the accuracy based on Root Mean Squared error efficiency based on the number of iterations needed for convergence of IF.

VI. EXPERIMENTAL RESULTS

Experimental result shows that all form of clusters. There are clusters are form. Each and Every node senses. The area of sensor and assign the location of sensor nodes, locate it. All the sensor nodes get connected to the each other to communicate. A sensor node depending On their nearest position they connected to each other. This done in all cluster is shown given below.
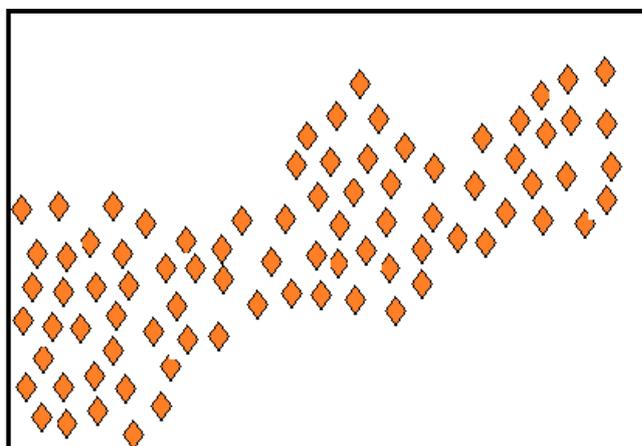

Fig VI.I Number of Sensor Node

The entire nearest node are connected to each other in next step. In this process find the receiving time, sending time and pending. The figure show in bellow
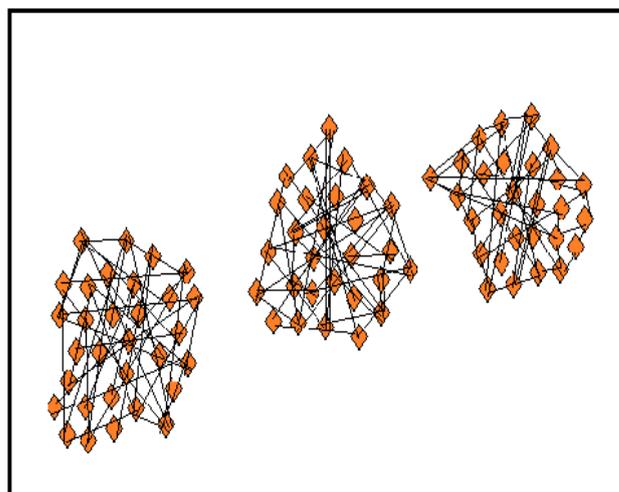

Fig VI.II Sensor Node are connected to each other

After all nearest node connected to each other formed to be a cluster, the number of cluster is created. Then next few sensing nodes are missed due to their distance is so long and capacity of sensor is low.
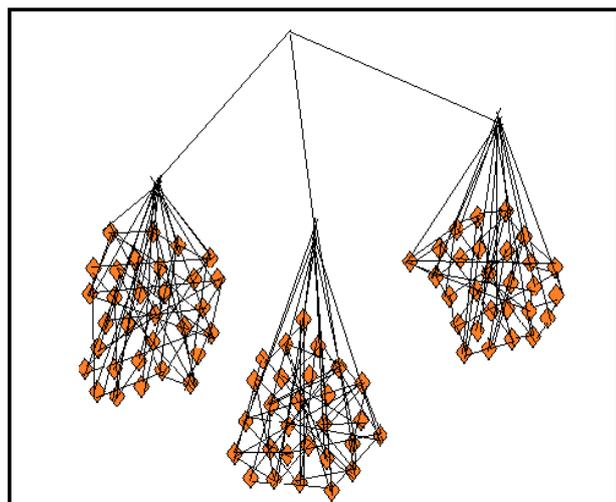

Fig VI.III Number of Sensor Node Connected to Cluster HEAD

CONCLUSION

In this paper we are conclude about various strategies and Techniques used for maximization of wireless sensor network. Thus considering those factors a latest technique READA is to be introduced and conclude. READA is used for huge amount and sensor networks lifetime maximization scheme for decreasing the power and maximize the lifetime. To elaborate a compromised but accurate aggregate data the compression and grouping technique is to be used this experimental result.

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