ANTONYMOUS QUERY FOR RNN SEARCH IN WIRELESS SENSOR NETWORK

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ABSTRACT ***The queries made to the system which is built by using the distance vector algorithms with label concept for based on hop and with the localization algorithms for finding the location of the node performance expected level. So the system performance improved lot which is built by using the algorithms avoiding the wormhole attack and improved the performance by node locating by using the beacon nodes so unwanted of transfer of message is avoided. By avoiding the unwanted messages and transferring the required data for the query the network life time is improved.***

In this algorithm the objects which need to track in the wireless based sensor node networks are injected the RNN monitoring query near to the query point of the objects.so we develop the algorithms for both monochromatic and Bichromatic. Usually the developed algorithm are works according to our requirements to track the object by injecting the query near to the object for query. When the query are injected near to the query point so he transfer of the data between the various nodes are reduced so automatically there the power consumption of the node is minimized. The query lifetime is mainly used to update the location of the various object from the injected object. Our algorithm is developed with two steps such as initial and incremental steps.

KEYWORDS– WABSN,Query Monitoring,Life Time,Transfer,Objects

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1. INTRODUCTION

In many applications such as may be object tracking with help of wireless based sensor node network can be monitored by using algorithm such as reverse nearest neighbor monitoring queries. the algorithms which is developed for monitoring other applications is not suitable for wireless based applications, because that all developed by centralized based concept. Most of the centralized based applications are required exchange of messages so there is a chance for reducing the power of the sensor node. So the network will get down easily. There are the two types of monitoring queries for RNN available named as Monochromatic and Bichromatic. These two monitoring algorithms has developed such as incremental and localized for both bichromatic and monochromatic.in this algorithm for every area the monitoring query is injected with help of computer or specialized devices after injecting the query the areas are incremented according to the information got it. During the lifetime of query in the whole space the object locations are collected and processed. Experimental result shows the progress compare to centralized ones in the energy consumption terms.

Spatial databases required growth and more advanced development computational resources have pave way for creating more important Geographic Information Systems (GIS) with big complexity. In between, the location-based services requirement expectation among the user is increasing tremendous, where the execution of complex queries is easily handled by these services. It proper research on wireless sensor networks shows that the large scope is there to for reverse nearest neighbor (RNN) queries for monitoring,

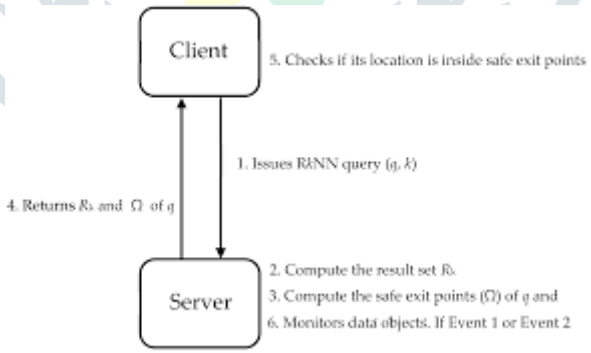

Fig.1.1 Reverse Nearest Neighbor (RNN) queries for monitoring

2. LITERATURE SURVEY

2.1 MONOCHROMATIC AND BICHROMATIC REVERSE NEAREST NEIGHBOURHOOD QUERIES

2.1.1 Monochromatic RNN:

The monochromatic queries used in the applications such as the operation carried out in the military and some outdoor to take care of some activities. examples when there is a group of peoples entering into a forest for a picnic the peoples use to track the team members one another to ensure the safety. If any person has met with any problem the nearby person can track the particular person with their GPS system. The same thing when a navy people jump into the sea, they will always to find there is any causality happens in the enemies area.

2.2.2 Bi-chromatic RNN:

The Bi-chromatic are mainly used in the applications which is built for real world entity. The bi-chromatic applications are disaster management. Examples when there is heavy causality is happened in the disaster such as may be Tsunami or Earthquake. There is a chance for transportation system to be blocked and damages, maybe there will be human causality will have happened in such situation the rescue team members always will keep track of the victims via RNN.

2.2.3 Cluster

In wireless based sensor wide network, the technique of clustering is mostly used to grouping nodes as a disjoint and non-overlapping in order to improve the energy utilization of the batteries avoiding unwanted transmission of the data between the nodes and to reduce the latency of communication between the nodes. Leader is selected in every cluster by the conducting the election among the sensor nodes naturally they may be called as Head of the Cluster.

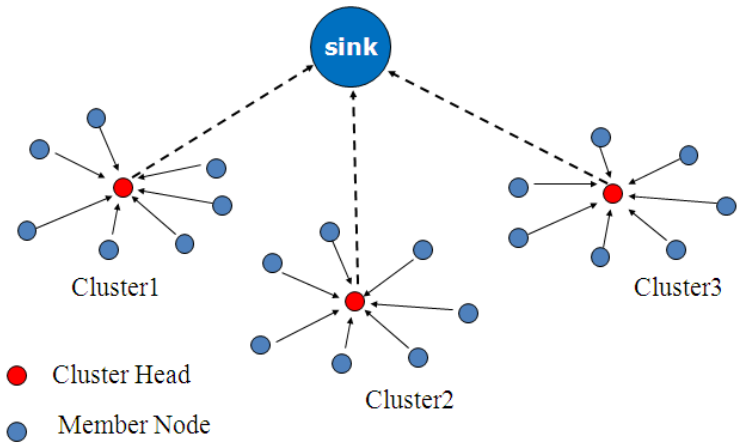

Fig.2.1 Clustering of the Nodes

2.2.4 Node Positioning

Each Node in the WSN find its locating itself geographically is the problem called as localization. Localization problem for node solving is difficult task and basically need to solve. Localization of the node is very complex problem which requires various parameters with different requirement. For example, major problem is the installation of beacon such as localization devices are cost extra this hardware is high, data accuracy about localization what we got, radio range of the device, how many is required, the device is outdoor based or indoor based, are the nodes need to place in line of visible to these device problem of 3d based or 2d based system of locating, energy required to maintain the information, security related information.

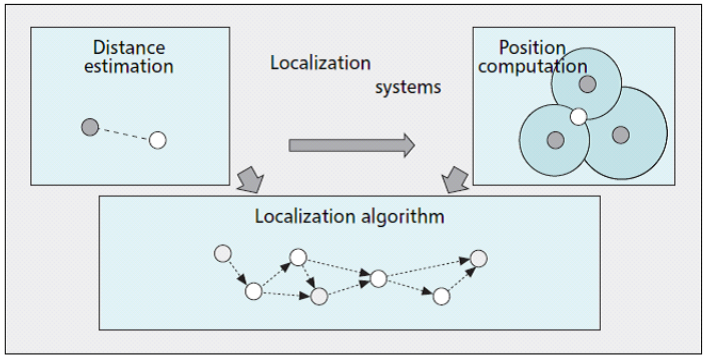

Fig. 2.2: The Division of Localization Systems into three Distinct Components.

3. DISTRIBUTED ARCHITECTURE FOR EXECUTING THE REVERSE NEAREST NEGIHBHOR QUERY FOR COLLECTING THE DATA IN THE WIRELESS BASED SENSOR NETWORKS

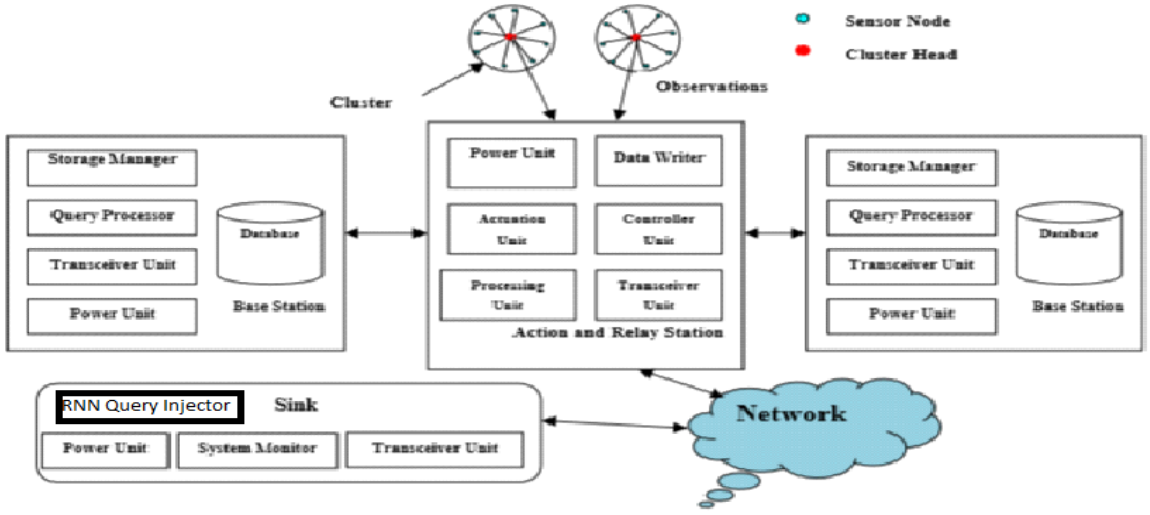

Fig. 3.1 Proposed System Architecture

The architecture which is defined here are combined with various components each component performs various roles to make overall system properly. The basic required components and various operations need to be performed are discussed below.

3.1 Sensor node

The sensor nodes are very small element which is equipped with various resources with constraint such as communication between the nodes, memory to maintain the data's and computations to performed on various queries. Even though there are various constraints the sensor nodes with the combinations of other sensor nodes may be a thousands of them work together in the organized manner to find the required events which is happened in particular are where it is deployed can be found. To increase the life time of the network and the sensor nodes the clustering technology is employed in the network to minimize the energy consumption by reducing the communication between the nodes.

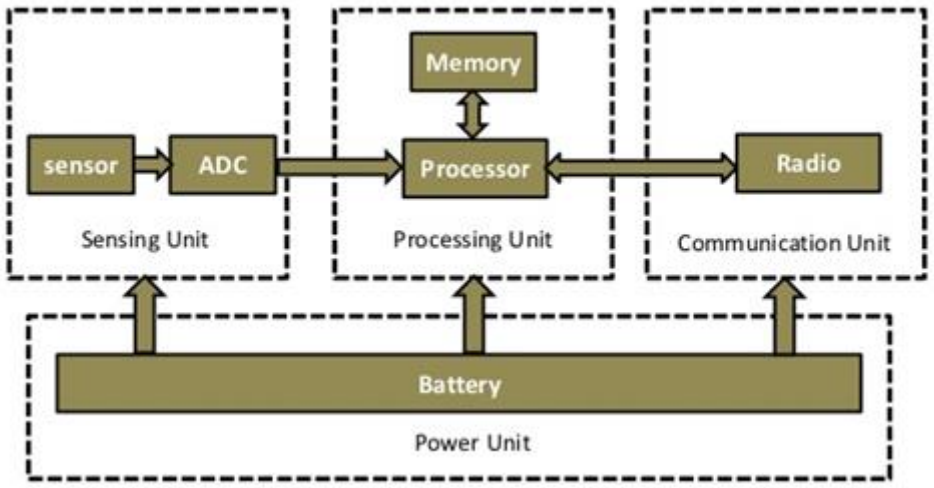

Fig.3.2 The Four Major Components

The sensor nodes are built by using the four major components such as:

- Computing Unit
  The Computation component consists of processor for performing computation and small memory for storing the data. The Processor main job is to execute the program used for communication between the different nodes and it's the heart of the sensor node it takes overall control. Data aggregation technique needs a memory to perform the various operations on the data.
  The two major activities done by Computation unit is
  - Administering and monitoring the perform of the various components in the sensor node by connecting between the various node it will perform the various task used for sensing data and perform the various operation Sensors and analog-to-digital converters
  - The environment information is gathered by the sensors and forwarded to the processor. The main thing to observe the event such as may be heat, visual events and some of the sound type of event occurs. The analog and digital convertors are used here if the data collected is analog and need to be converted to digital.
- Transceiver unit.
  This unit is mainly responsible for sending and receiving the signals of optical or may be a radio. Through this radio or optical signals, the networks of wireless sensor networks are formed.
- Power unit:
  The power unit is built by using may be a cells charged by solar or a battery. Based on application requirements the components such as power generator for generating the power for operation and locating devices such as GPS, every sensor node in the wireless based sensor networks are identified by their ID. Based on the ID the functionality of the network can be identified. A sensing node based on the sensing events by the radio or signal can cover in 2D Plane.

4. PERFORMANCE EVALUATION

4.0 Evaluation Parameters

In WSN the procedure which is used for clustering the node need to find their power in enhance the efficiency of the network by using the more metrics. If the Base Station failed, then the procedure need to be done for change in the clustering of nodes by using six metrics. Some of the metrics are selected and discussed below:

4.1 Power Consumption of Sensor Nodes

The sensor nodes are deployed in the places where human being not able to access the sensor nodes, so recharge of batteries is not possible. The usage of batteries power in the sensor nodes care need to be taken. Some process such as communication between the nodes, creating various process and deleting the various process and node in wake state utilize the power of the batteries.

The energy utilization of nodes can be reduced by avoiding the unwanted transfer of packets, redundant packets using the cluster concepts so the life time of the network is improved. The data transfer takes places as collected sensor node to base station via the cluster head. The selecting the procedure for clustering need to be careful because the communication cost is high then automatically increase power utilization.

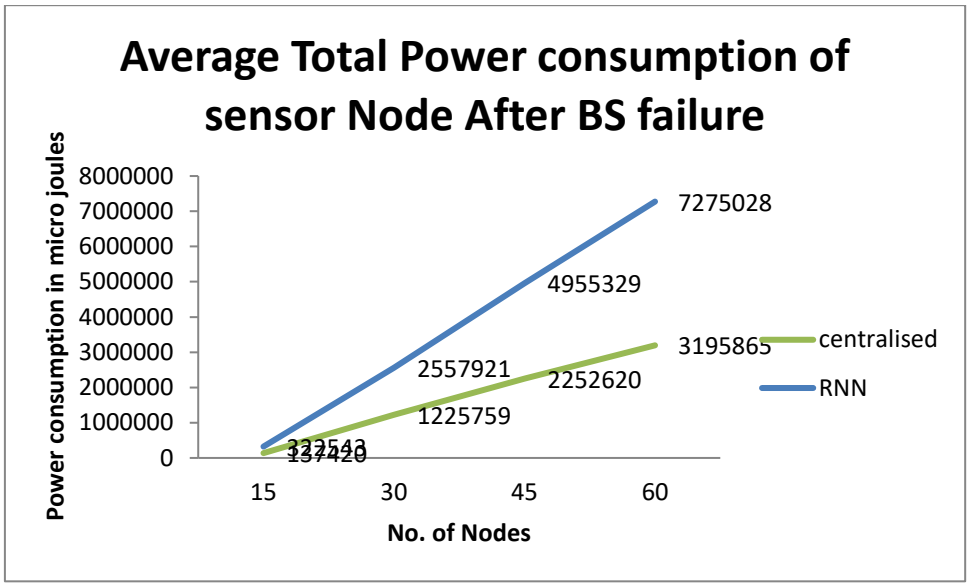

Figure 4.1: Power Consumption of all sensor nodes in Centralized and RNN after failure of Base Station (average of different positions of new BS)

5. CONCLUSION

The message passed to the centralized where it required a large amount of energy to transfer every data to the forward the data to central server. To avoid the large amount of data to transfer we introduce RNN to collect the information in particular area by injecting the query so we get accurate in result and also reduce the transfer of large messages in that way we minimize the power utilization.

6. FUTURE ENHANCEMENT

The network which uses this designed method scheme works very well only if the participated nodes all are in the same range and there is loss of packet is not there. There is a need to implement in the future the scheme of label secured localization and RNN monitoring to entire area to tolerate the loss of packet and nodes that have various transmission ranges.

7. REFERENCES

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