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ENHANCING THE DISTRIBUTE ENERGY IN WSN

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ABSTRACT

Currently, wireless sensor network applications are often used in various technologies to reduce the cost of manufacturing portable wireless sensor nodes. A large number of portable wireless sensors are implemented in WSNs to increase the trend of QoS. Quality of Service (QoS) is primarily affected by the life and failure of sensor points. If the sensor node is more likely to fail as the number of sensor points increases. Many routing protocols use assemblies as their routing method. The most important goal of all routing protocols is to reduce power consumption, thereby increasing network time, especially the power cycle of the network. According to the age of the network, we mean that we refer to the beginning of the time from the network to the death of the last node, while the amount of stability indicates the start time of the master node from the network to death. This is in contrast to the development of a time-sensitive clustering base for amplifying energy efficiency by dynamically selecting cluster headers using multiple hops and multiple paths, resulting in a balanced load in different groups. This results in an improvement in the time span of the cluster node network or legacy nodes and compares the proposed protocol with the performance of LEACH & TEEN. Will improve the energy use of WSN nodes.

KeyWords: *Self Routing Protocol, WSN, LEACH, TEEN, MATLAB*

I. INTRODUCTION

Over the last few years the number of applications for Wireless sensor networks (WSNs) are increasing rapidly. Wireless sensor networks can be deployed in battlefield applications such as military applications, vehicle health management, space platforms, and industrial maintenance applications. On the military side, the main focus is on regional monitoring of safety and control applications. Because of the great growth. Electronic technology can manufacture a portable sensor at low cost with better results and sensitivity. Thus, a large number of mobile sensor nodes in this area may be deployed in order to improve the quality of service (QoS) this wireless sensor the network. If sensor usage increases, the sensor node may fail in the WSN. In WSN, for various reasons (e.g., battery failure, environmental impact, software or hardware failure), node failure sensor.

Therefore, it must create an effective and sensor nodes in the WSN [4]. The wireless sensor network is a set of sensors with limited capacity and limited computing and transport capabilities. Because of limited transmission, computational capabilities and high sensor node density, packet routing occurs in multiplex data transmission.

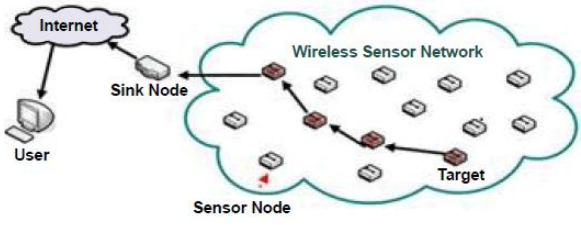

Fig 1: WSN Structure

Therefore, the guidance in wireless sensor networks has been an important area of research in the last few years. Sensor nodes operate on non-rechargeable batteries, so the road is effective while the network must be able to effectively use the resources, and thus is an important research issue. The advances in wireless technology and the development of low-cost sensor modules have led to the introduction of low-power wireless sensor networks. Since the sensor node has multiple functions and is easy to deploy, it can be used in various applications, such as target tracking, environmental monitoring, health care, forest fire detection, inventory control, power management, surveillance and reconnaissance [1]. The main duties of the information network are collected from the sensor nodes from the source to the receiver routed for further manipulation, resource reduction [2], the application of various non-trusted links to different applications between the sensor nodes in the wireless sensor longer design of effective routing algorithms in the network is a daunting task. Is suitable for various routing application design algorithms to meet the various performance requirements considered an important issue in wireless sensor networks.

Multipath Routing in Wireless Sensor Networks

The restricted capacity and transmission capability of multi hop path and high dynamics of wireless links single path approach is not able to provide efficient data rate in transmission in Wireless Sensor Networks. To overcome these issues now a day's multi-path approach is used extensively. As mentioned before multi-path routing has demonstrated its efficiency to improve the performance of wireless sensor and ad-hoc networks. In the following, we review the gain in performance that can be achieved by using multi-path approach.

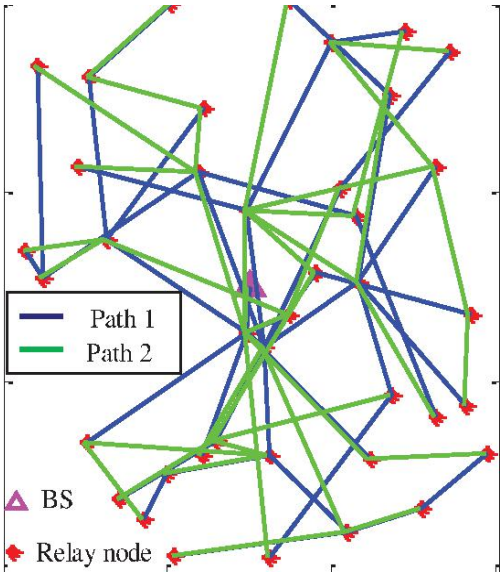

Fig 2: Multipath Routing in Wireless Sensor Networks

Applications of WNS Sensors

- Military Applications
- Environment Monitoring
- Agricultural Applications
- Support for logistics
- Human Centric Applications

II. LITERATURE SURVEY

[1] S. Taruna, Rekha Kumawat, G.N. Purohit proposes a mass-based multiprocessing routing protocol that is more energy-efficient than a single-hop protocol. Simulation results show that the proposed protocol provides better

performance than the individual cluster routing protocol in terms of network life cycle and power consumption by improving FND. These sensor nodes can measure, measure and gather information from the environment and, based on some local decision-making processes, can transmit sensed data and send it to the source to the destination. Typically, WSNs have little or no infrastructure. It consists of many sensor points, which can be ten or thousands, and work together to monitor the area for data about the environment. These sensors have the ability to communicate with each other or directly with an external base station (BS). A greater number of sensors allow for a more accurate sensing of a larger geographical area. Sensors usually send this collected data to the command center (receiver) either directly or through a data center (gateway) via a wireless transmitter. Not in the wireless network. Nodes that we can communicate with. The number of nodes makes the cluster and all the nodes in the cluster the cluster header. The cluster header communicates with the base station over another cluster header. Beyond the base stations, they can communicate directly with the base station, not the base station. The nodes and nodes make the cluster headers in the block. These cluster heads continue with the base station.

[2] Taruna, Sheena Kohli, G.N. Purohit proposed a routing algorithm related to the power and distance of the coefficient of each node. The schema is then compared with the traditional LEACH protocol, which includes the choice of the cluster header closest to the selected node. We conclude that the proposed protocol effectively extends network life while reducing network power consumption.

[3] Avani Patel1, Chandresh R. Parekh, proposed a TEEN-based mass-sensitivity protocol. The TEEN sensor network architecture is based on the hierarchical cluster. TEEN is a data-based, event-based, event-driven protocol that is best suited to important applications at the time. Transports data based on solid and soft thresholds. If the limit is not reached, you will never connect to the node.

[4] Mohammed Zaher Hussein, M. P. Singh and R. K. Singh Maulana proposed a routing protocol based on application architecture and the network. Because consciousness is a mandatory design standard, many of the new protocols are for routing, power management, and data dissemination. Effective routing in router networks requires routing protocols that should reduce network power dissipation and maximize network life.

[5] Aswini Kavarthapu suggested a method to detect sensor nodes by comparing the actual RTT with current RTT by discrete path selection techniques. This method is simulated on WS2 with NS2, with eight nodes of sensor using circular topology design.

[6] Pavithra B Raj, R Srinivasan suggested an algorithm to restore the faulty node to improve the life of wireless sensor networks when some sensors are turned off. Wireless sensor networks (WSNs) typically have hundreds or thousands of sensor sensors, computing and communications, such as short-range communications over a wireless channel. These nodes can be distributed over a large area. The sensors in the wireless sensor networks are equipped with batteries for their own power sources, but because of the sudden release of energy, it is not appropriate to charge or replace the batteries.

[7] Wu Yanwei suggest TDMA-based MAC protocol is designed. In this protocol, time slots are used to hold different sensors to schedule their operations. These time slots are used for various radio activities performed by the sensor points. However, TDMA-based systems may result in inefficient distribution of time slots, where there may be idle periods in which no data station is transmitted.

[8] Shibu People. Design of distributed MAC layer protocol for scheduling wireless sensor stations. The author believes that there is a strong relationship between the MAC layer and the routing layer, so in order to improve tab-based scheduling of the MAC layer, it is necessary to consider the various routing parameters. They use routing, power control, and random access layer parameters to design protocols. They developed a probabilistic mathematical model to improve MAC layer scheduling by optimizing solutions.

III. MOTIVATION

The design of assembly technologies in wireless sensor networks is influenced by the limited capacity of batteries that require the design of energy-efficient assembly protocols. A number of studies have recently been conducted on various aspects of low power protocols, networking, coverage problems, and the establishment of reliable wireless sensor networks. However, even after many efforts, there are still some design options for improvement. This prompted me to design a new protocol that would use panic resources more efficiently on the various sensors in the application.

IV. PROPOSED WORK

This paper discusses the structure of the assembly protocol and designs an algorithm for improving life cycle and energy consumption in the self-regulatory contract. This requires identifying the tools to be followed in accordance with the proposed approach as well as the basics of the tool.

Proposal

Multiprocessor and multi-track concepts have been introduced to develop WSN self-regulatory contracts. When the cluster is changed, the nodes must include attributes such as multimode and multipath. This multi-track jump will be used to extend the life of the network and reduce power consumption. Power consumption is reduced because load balancing lies at the top of each group. The sensor network then has different features and measurements that are quite different from traditional networks. Due to the very specific application objectives of the highly cooperative nodes and sensors, this guidance does not include a common solution, so the specific characteristics determine the routing mechanism used. In this paper, we performed simulations showing that asymmetric multiplexing increases the lifetime of a large range of sensor networks. It also examines the usefulness of implementing a minimum separation distance between cluster headers in the cluster sensor network to extend the life of the network.

V. CONCLUSIONS AND FUTURE SCOPE

Based on the analytical data provided, it is clear that the structure of the SOA structure is well suited to improve the network lifecycle. In wireless sensor networks, sensors can be deployed randomly or permanently. Random sensors can be used in battlefields or dangerous areas, and unavoidable sensors can be used in friendly and accessible environments. In general, fewer sensors are needed to perform the same task with an inevitable pattern. Wireless sensor networks are typically deployed in hazardous or inaccessible environments, so the energy used to keep the sensors is limited and can not be updated. Due to these limitations, the power consumption of the node must be reduced while maintaining network connectivity to increase age. After you deploy a node in ad-hoc mode, the wireless connection is usually self-adjusting. These self-regulated sensor networks have limitations on system resources such as battery power, communication range, storage space, and processing power. Low processing power and wireless connectivity make this network a real challenge. Self-regulation can be defined as the process by which the system achieves a goal with minimal human intervention. . In addition, the nodes may fail (due to lack of power or physical damage) and the new nodes may join the network. Therefore, the network must be able to reconfigure itself periodically so that it can continue to run. Each node can be separated from the rest of the network, but must remain heavily installed. Expansion requires that any configuration process be fully distributed and local information used only, a classic problem for all self-regulatory systems, how to achieve the best global level of local adaptation in the future.

REFERENCES

1. *S. Taruna, Rekha K., G.N. Purohit "Multi-Hop Clustering Protocol using Gateway Nodes in Wireless Sensor Network" International Journal of Wireless & Mobile Networks (IJWMN) Vol. 4, No. 4, August 2012.*
2. *Taruna, Sheena Kohli G.N .Purohit Computer Science Department, Banasthali University, Rajasthan "Distance Based Energy Efficient Selection of Nodes to Cluster Head in Homogeneous Wireless Sensor Networks" International Journal of Wireless & Mobile Networks (IJWMN) Vol. 4, No. 4, August 2012.*
3. *Avani Patel, Chandresh R. Parekh "Dead Node Detection Teen Protocol: Survey" IJRET: International Journal*

of Research in Engineering and Technology e-ISSN: 2319-1163 | p-ISSN: 2321-7308.

4. *Md. Zair Hussain, M. P. Singh and R. K. Singh 1Maulana Azad College of Engg. & Tech., Patna, India 2National Institute of Technology Patna, India 3Muzaffarpur Institute of Technology, Muzaffarpur, India "Analysis of Lifetime of Wireless Sensor Network" International Journal of Advanced Science and Technology Vol. 53, April, 2013.*
5. *Aswini Kavarthapu Department of Computer Science and Engineering, QIS College of Engineering and Technology, Ongole, Andhra Pradesh, India. Narasimha Rao Sirivella "A Failure Node Detection based on Discrete Selection in WSNs": International Journal of Computer Applications (0975 – 8887) Volume 106 – No. 15, November 2014.*
6. *Pavithra B Raj, R Srinivasan PG Student, Department of Computer Science & Engineering, M.S. Ramaiah Institute of Technology, Bangalore "Fault Node Identification and Route Recovery in Distributed Sensor Networks" International Journal of Advanced Research in Computer and Communication Engineering Vol. 3, Issue 5, May 2014.*
7. *Yanwei Wu; Xiang-yang Li; Mo Li; Wei Lou "Energy-Efficient Wake-Up Scheduling for Data Collection and Aggregation" Parallel and Distributed Systems, IEEE Transactions on Vol.21,2010.*
8. *Shibo He; Jiming Chen; Yau, D.K.Y.; Youxian Sun "Cross-Layer Optimization of Correlated Data Gathering in Wireless Sensor Networks" Mobile Computing, IEEE Transactions onVol.11, 2012.*
9. *Alam, M.M.; Berder, O.; Menard, D.; Sentieys, O. "TAD-MAC: Traffic-Aware Dynamic MAC Protocol for Wireless Body Area Sensor Networks" Emerging and Selected Topics in Circuits and Systems, IEEE Journal on Vol.2, 2012.*
10. *Di Francesco, M.; Anastasi, G.; Conti, M.; Das, S.K.; Neri, V. "Reliability and Energy-Efficiency in IEEE 802.15.4/ZigBee Sensor Networks: An Adaptive and Cross-Layer Approach" Selected Areas in Communications, IEEE Journal onVol.29, 2011.*
11. *Akhlaq, M.; T.R. "RTSP: An Accurate and Energy-Efficient Protocol for Clock Synchronization in WSNs" Instrumentation and Measurement, IEEE Transactions onVol.62, 2013.*
12. *Otal, B.; Alonso, L.; C. "Highly reliable energy-saving mac for wireless body sensor networks in healthcare systems" Selected Areas in Communications, IEEE Journal onVol.27, 2009.*
13. *L Shi;, A. "TDMA Scheduling with Optimized Energy Efficiency and Minimum Delay in Clustered Wireless Sensor Networks" Mobile Computing, IEEE Transactions onVol.9,2010.*