Literature Survey on Life Time Efficiency of Wireless Sensor Networks

Roja.R[1], Sandhiya.G[2], Yugapriya.R[3], A.Karthikeyan[4]
[1, 2, 3] Dept of ECE
[4]Associate Professor, Dept of ECE
[1, 2] SNS College Of Technology, Coimbatore ,India.

Abstract- *Wireless sensor networks have many types of sensors to monitor physical or environment condition.Theyarehcm and mat. It passesthe data through network to a main location.There are some applications such as monitoring,militaryapplication temperature, approach combines medium access organization with routing. Wireless Sensor Networks require the usage of new types of network efficiency[1] to ensure a node lifetime of several years on a single battery and which can operate without assistance of central manager in a dynamic network topology.so the energy of ideal nodes is saved and it will be used only when it gets active.*

I. INTRODUCTION

Wireless sensor network (WSN) is a multi-hop infrastructure less and self-organized network comprising a group of small and power constrained sensors deployed over a vast region for different purposes such as environment monitoring, object or target tracking, industry automation and control, and etc. One of the most important performance measures for wireless sensor networks is network lifetime. The development of wireless sensor networks was motivated by military applications such as battlefield surveillance and locating the sniper. However, nowadays WSN are used in many industrial and civilian application areas, including industrial process monitoring and control, health monitoring, habitat monitoring, healthcare applications, home automation, and traffic control.

The main components of a sensor node shown are transceiver, microcontroller, external memory, power source and the sensors. Microcontroller only processes the data and controls the functionalities of other components in the sensor node. General purpose[2] desktop, Microprocessor, Digital signal processors, Field Programmable Gate Array and Application-specific integrated Circuit can be used as a controller. Microcontrollers are the most suitable choice for sensor Node and embedded system.

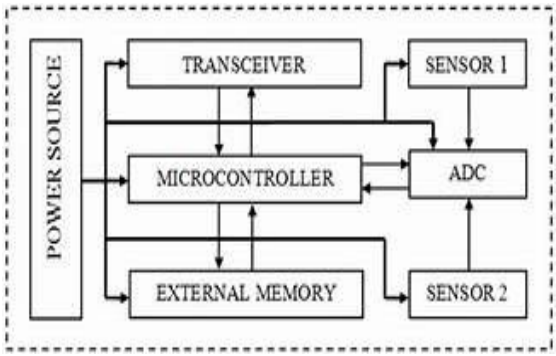


FIGURE-SENSOR NODE ARCHITECTURE

There are many challenges in wireless sensor networks (WSNs). In our work, we address in particular energy efficiency and the dynamics of a WSN. In this paper, we give a detailed description of about energy efficiency using various routing and techniques.

Some nodes in a WSN can be mobile, while others are fixed in walls or other immobile objects. Sensor nodes must assist each other in forwarding their sensor readings to a data sink in the network. A routing protocol has the task of establishing an efficient route for messages to travel in a multichip sensor network. Nodes along the route can suddenly fail or simply move away, in which case the routing protocol has to defer messages to a new route. The highly unpredictable environment makes this a challenging task.

This paper is a survey paper on energy efficiency[3] techniques .It mainly concentrates on routing and some other techniques like cross layer interactions.

II. LITERATURE SURVEY

According to the deployment of sensor Network all the nodes are in active state and it calls a Procedure BEGIN only once. After executing BEGIN, every active invokes a procedure called Active in a particular time Interval. The active nodes decide whether to state active or go ideal state. All the ideal node gets active in a particular time interval to check whether its region is covered[1] by any other node. If it's covered by

any other node again it goes to Ideal state. Otherwise it goes to active state to cover the region.

We have to execute the BEGIN procedure which proceeds like node u calculates the value based on the distance and initializes the set A (u) = Φ and N u = Φ . Node u executes a procedure[2] to find its region. If the identified region is not covered, u sends the information packet to the base station mentioning[1] that the node is not covered. If it is covered u sends the information packet containing its Node Id, Position and Life time. If u receives another nodes information packet it records the Node Id, Position and Life time and sets Nu= NuU[u]. And also if uεR (v), then v replies with an information packet containing v's ID, Position and life time.

A detailed power consumption model for each component In a wireless sensor node can be found. For an AFN, the radio-related power consumption (i.e., in transmitter and receiver) is the dominant factor. When AFN transmits data to AFN k, the power consumption at the transmitter can be modeled as pt= ik ¼ cik .fik.

where fik (in b/s) is the bit-rate of the flow sent by AFN i to AFN k. Here, cik is the power consumption cost of link(i,k).For a cycle-free multisession flow routing solution with maximum network lifetime T, the following iterative algorithm obtains an equivalent single-session flow routing solution ^ :

1. Identify a multisession AFN s such that

a) Either is not receiving flows from any other AFN (i.e., a non relay AFN) or
b) All AFNs from which AFN s receives flows are already in single-session mode. If there does not exist such a multisession AFN, we already have an equivalent single-session flow routing solution ^; otherwise, perform the following Transformation for AFN s.

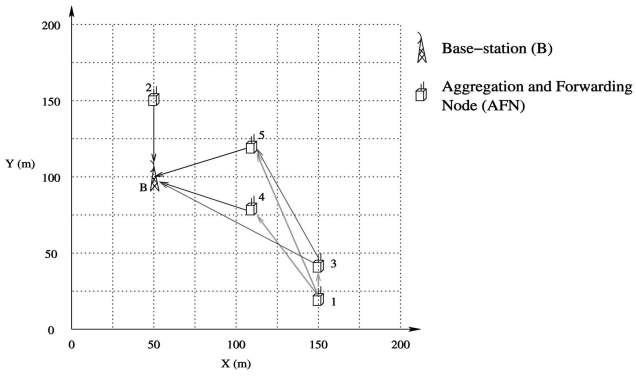
2. For AFN s, denote Rs=r1,r2r3.....r|RS|as the set of relay nodes for AFN s under multisession solution . If s has a direct flow to the base-station B under, B is also included in Rs. Let r|RS|denote the number of nodes in Rs. We define |Rs|as the number of time duration[2] .Theorem 1. Suppose that we have a multisession flow routing solution with maximum network lifetime T for a sensor network. Then, there exists an equivalent single-session flow routing solution ^ for the same network. Theorem 1 can be proved by constructing a singlesession flow routing solution (denoted as ^) for a given multisession flow routing solution , and showing that ^ is equivalent to according to our criteria. In the following, we will describe such an algorithm. Before we perform the transformation, it is important to remove all flow cycles in. This is necessary to ensure that upon the termination of the algorithm, the flow routing of each AFN[3] will be in single-session mode.

Learning automaton can be classified into two mainfamilies : fixed structure learning automata and variablestructure learning automata. Variable structure learningautomata are represented by a triple hb, a, Li, where b isthe set of inputs, a is the set of actions, and L is learningalgorithm. The learning algorithm is a recurrence relationwhich is used to modify the action probability vector. Letai(k) 2 a and p(k) denote the action selected by learningautomaton and the probability vector defined over the actionset at instant k, respectively. Let a and b denote the rewardand penalty parameters and determine the amount of increases and decreases of the action probabilities,

Respectively. Let r be the number of actions that can be taken By learning automaton. At each instant k, the action probability vector p(k) is updated by the linear learning algorithm, if the selected action ai(k) is rewarded by the random environment, Similarly, the actual average bit-rates for AFNs 2,

3, 4, and 5 over time interval ½0; 302:38_ days are 7:0011, 4:9937, 1:0017, and 3:0062 (all in kb/s), which are very close to the estimated averages bit-rates 7, 5, 1, and 3,respectively.

III. RESULT



The level of life time improvement is achived and global barrier coverage is achieved .The energy is exhausted in the effiency.The energy consumption is more.

IV. CONCLUSION

Wireless sensor network is to improve the energy efficiency and to increase life time .It may enable the developement of coverage .It may have any coverage protocols and multicasting information .It has maximizing

network lifetime of upper tier aggregation and forwarding nodes.And also it perform optimal single session flow network is local or global barrier covered .The area coverage uses only an activation message to construct the structure .When the message frequency is greater ,because next node of the transmitter and receiving nodes will switch their transceivers to standby to prevent energy waste in overhearing.

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