Energy Efficient Privacy Preserving With Increased Quality of Service Parameters in Wireless Sensor Network

K. Navin kumar
M.E (Applied Electronics)
Erode Sengunthar Enginnering College
Anna University Chennai

ABSTRACT:
This Project discuss about Quality of Service Parameters in Wireless Sensor Network. Network consisting of nodes with limited power are deployed to gather useful information from the field. Wireless Sensor Networks consisting of nodes with limited power are deployed to gather useful information from the field. In WSNs it is critical to collect the information in an efficient manner and also concentrated to increase the security of the network. For the wide range of communication the Quality of service parameters are increased. We are introducing the clustering concept to increase the structure of the network that is Quality of service parameters. Navigation is used to reduce the energy consumption in the larger network. To increase the security in the network HMAC algorithm is used. The comparative analysis shows that the proposed method performed well when compared with the existing method. The main goal is to maintain the maximum lifetime of network, during data transmission in the efficient manner.
This paper defines implementation of WSN and comparison of its performance with AODV routing protocol is done in terms of packet delivery ratio, throughput and energy level.

Keywords: –Wireless Sensor Network (WSN), Quality of Service, HMAC algorithm, Clustering, Navigation.

I.INTRODUCTION

A wireless sensor network (WSN) typically consists of sensor nodes with sensing, computing and communication devices. The main goal of the WSN is to gather data from the environment and transmit it to a sink node. WSNs are usually self configured ad-hoc networks with mobile nodes. The physical size of sensor nodes is very small, which introduces challenges for the design and management of WSNs. Data transmission is expensive therefore the management of communication between nodes is an important factor in power efficiency of the network. Cooperation between sensor nodes can potentially reduce the total power consumed for data transmission in the whole network by replacing multihop with traditional single-hop communication. First, each WSN technology has its limitation, such as network reliability or bandwidth capability. Second, lack of effective deployment methods. Third, when WSN is incorporated in a real application such as environment energy control where requires tight cross domain (building control and WSN) collaboration to derive an optimized environment control system. In most real time applications, it is hard to construct a Wireless Sensor Network with pure wireless communication. The basic concept of WSN technology is low-power, low speed, short-range wireless communication. The device is typically selected for cheap, power-efficient, and disposable. Large scale service is achieved by large amount of deployment where data are collected through Ad-Hoc network. Adjacent nodes will be able to recover the failures on a network node. Realistic power consumption model of wireless communication subsystems typically used in many sensor network node devices is presented. Low power consumption models for major components are individually identified and it having effective transmission range of a sensor node is modeled by the output power

of the transmitting power amplifier. Using this basic model, conditions for minimum sensor network power consumption are derived for communication of data from a source device to a destination. Wireless Sensor Networks have rapidly positioned this technology as the premier form of variable monitoring. These types of networks maintain important advantages in their field of operation such as reliability, simplicity and ease of installation. Signal processing technique is used to overcome the challenges of power consumption in WSN. The design and implementation focus on three levels:

- Hardware
- Software
- Data transmission

The resulted system is able to satisfy all the theoretical and practical requirements with self-powered management. A Silicon interposer becomes important key components of 3D integration. It is used as an intermediate carrier and a wiring device for IC components like logics, memories, sensors, and so on. The key problem of facing silicon interposer is a cost issue. A modified communication protocol that uses the knowledge of channel to transmit packets. The impact of this protocol has been directly studied on the coin cell batteries that are used to power wireless sensors by emulating the loads for the battery and radio channel conditions. It is found that small packet size data's are only used for network transmission.

II. SYSTEM ARCHITECHTURE DESIGN

Fig 4.1 System Architecture Design
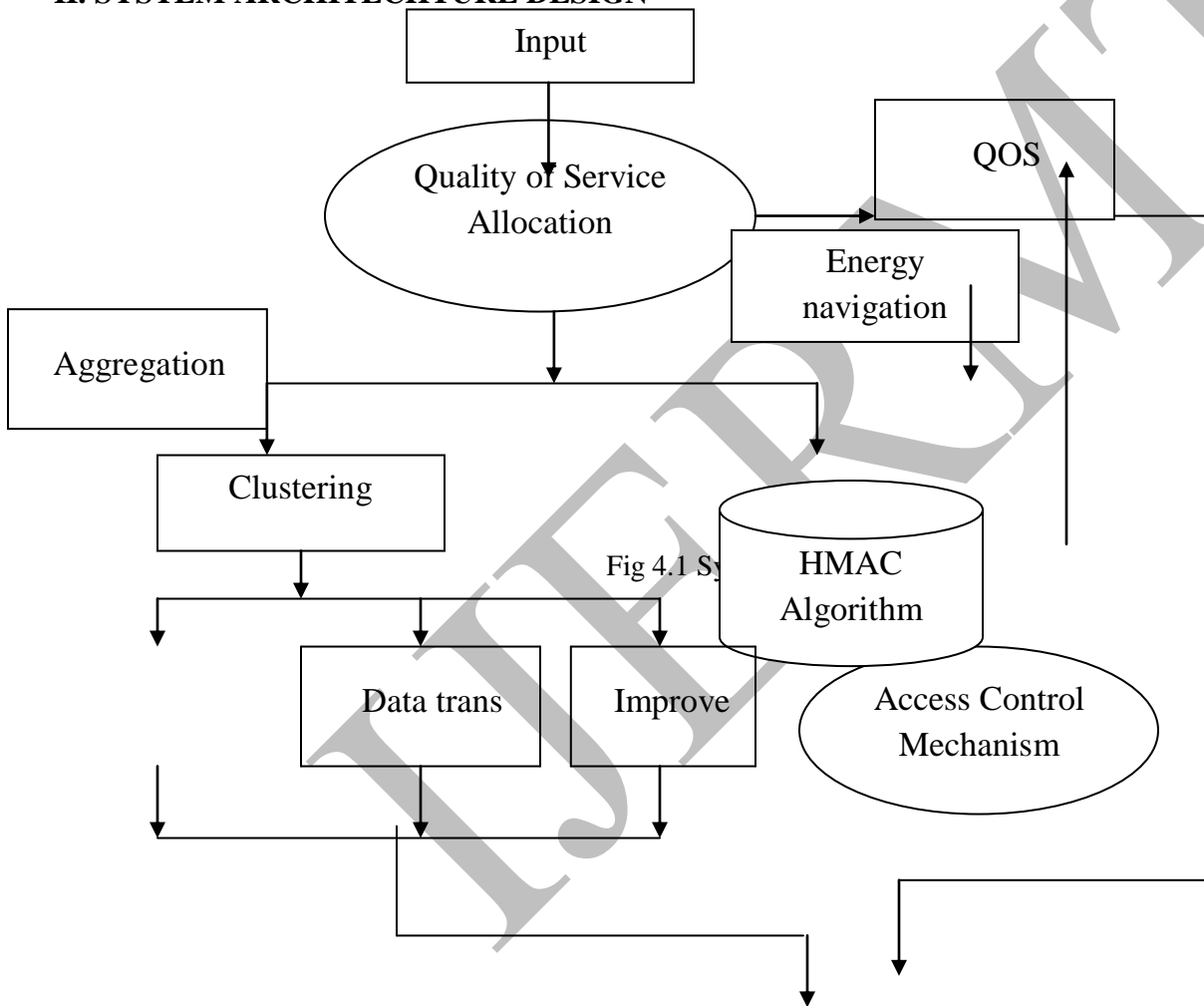
DATABASE DESIGN

The most important consideration in designing the database is how information will be used. The main objectives of designing a database are:

- Data integration
- Data integrity
- Data independence

DATA INTEGRATION

In a database, information from several files are coordinated, accessed and operated upon as through it is in a single file. Logically, the information are centralized, physically, the data may be located on different devices, connected through data communication facilities.

DATA INTEGRITY

Data integrity means storing all data in one place only and how each application to access it. This approach results in more consistent information, one update being sufficient to achieve a new record status for all applications, which use it. This leads to less data redundancy; data items need not be duplicated; a reduction in the direct access storage requirement.

DATA INDEPENDENCE

Data independence is the insulation of application programs from changing aspects of physical data organization. This objective seeks to allow changes in the content and organization of physical data without reprogramming of applications and to allow modifications to application programs without reorganizing the physical data.

INPUT DESIGN

Input design is the process of converting user-originated inputs to a computer understandable format. Input design is one of the most expensive phases of the operation of computerized system and is often the major problem of a system. A large number of problems with a system can usually be tracked backs to fault input design and method. Every moment of input design should be analyzed and designed with utmost care. The design of the input should be made the input as the over to the numerous networks in the reliable area that should be passed as the installation in the remote network. It has the following constraints in the input database.

1 All the files from the disk should be acquired by data.
2 It is suitable to more available data clearance and made available.
3 The menu of design should be understandable and it is in the right format.

The system takes input from the users, processes it and produces an output. Input design is link that ties the information system into the world of its users. The system should be user-friendly to gain appropriate information to the user. The decisions made during the input design are,

The application gives the low time consumption to make the sensitive application made simple. When applying the project it provides the low man-power attrition with the reasonable output. The amount of fund that the company can spend into the research and development of the system is limited.

 System analysis decide the following input design details like, what data to input, what medium to use, how the data should be arranged or coded, data items and transactions needing validations to detect errors and at last the dialogue to guide user in providing input.

OUTPUT DESIGN

Output design generally refers to the results and information that are generated by the system for many end-users; it should be understandable with the enhanced format. The Output of the software is used to make the remote installation of the new software in the system and, it is awake the immediate alert to the system that should be enhanced it as the input to the system. Output is the main reason for developing the system and the basis on which they evaluate the usefulness of the application.

Computer output is the most important direct source of information to the user output design deals with form design efficient output design should improve the interfacing with user. Previewing the output reports by the user is extremely important because the user is the ultimate judge of the quality of the output and, in turn, the success of the system. NAM output windows shows before and after execution which having details of the Energy consumption of the nodes and transmitting packets with respect to time.
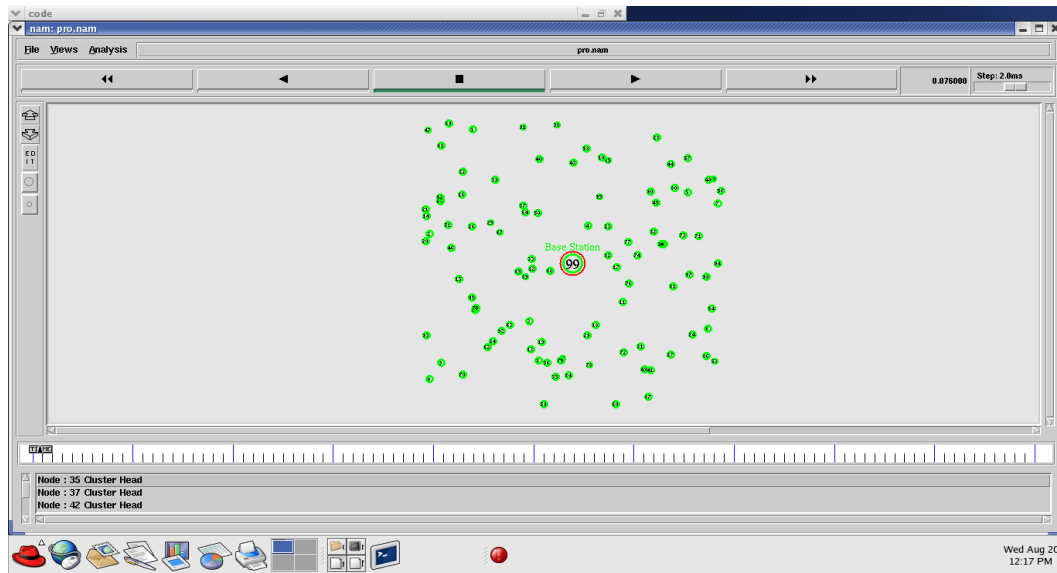

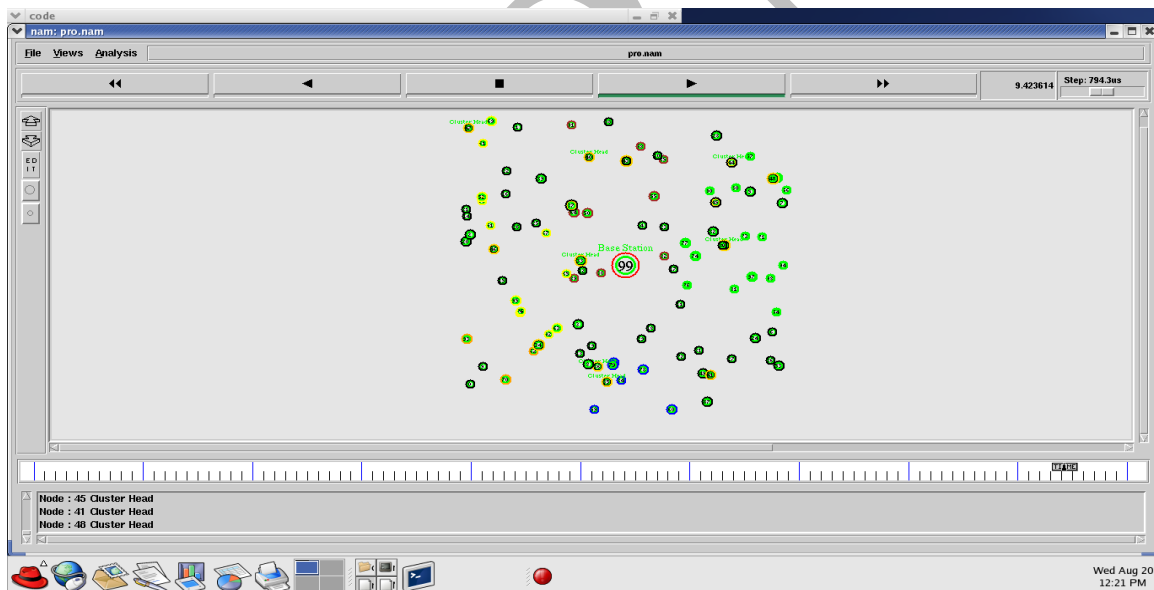**Fig. NAM Outputs before Execution**

Fig. NAM Outputs after Execution

V.CONCLUSION

The Wireless sensors with less energy consumption are proposed in this method. The Quality of service parameters and the security of the network is increased by this method. Clustering concept is used to increase the Quality of service parameters. The HMAC algorithm is used to increase the security in the network. The comparative analysis shows that the proposed method performed well when compared with the existing method. Coin batteries and solar cells were used currently for sensor node evaluation.

In future works, it will be replaced by a flexible stand-alone power source, which is under development in the 'Green Sensor Network System' project. The sensor nodes are also considered to be coated by polymer thin film for a better stability and reliability under humidity environments and for a longer lift time.

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AUTHOR BIOGRAPHY

K.NAVINKUMAR received the B.E degree in electronics and instrumentation from anna university, Chennai, india in 2013. From 2014-15 he is currently doing M.E in erode Sengunthar college of engg. his research area includes wireless communication, microwave circuits.