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IDEAL STEERING IN ACCUMULATIVE NUMEROUS HUBBED NETWORK SYSTEMS

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***ABSTRACT**--Networking means create a communication between two or more systems. The main purpose of networking is distributing and sharing the data and devices between other devices. Networks are constructed by using software and hardware. The Communication can be wired or wireless. In wired communication the data will be **transferred** by using physical medium like cables. The other mode of communication is wireless mode. In this wireless communication data can be transferred from one device to another device by logically. In wireless transmission the microwave, radio frequencies are used to make a communication. Wireless communication means create a communication between one source device to another destination device or number of destination devices are connected by using various ways. Each device is called as node. Every nodes connected by other nodes by using set of signals. The actual messages are encrypted in the sender side before transmit the data. The encrypted data is transmitted to the receiver through transmission medium. In the receiver side, the received data is decrypted before the messages display to the user using some algorithms. In wireless communication finding proper path is a very difficult task. In this paper describes how to find the optimum path from source device to destination device in multi-hop network with less energy consumption. In this system Floyd-Warshall algorithm is used to find the most favorable path with less amount of energy. With the single time of execution this algorithm finds the less distance path. During data transmission there is chance to loss the data packets.*

***Keywords-** Accumulative, multi-hop, energy accumulation, minimum energy, graph theory.*

I. INTRODUCTION

More than one devices are connected either physically or logically are called networks. The data transmitted over a transmission medium. The transmission medium many be physical cables or logical signals. In wireless networks data can be transmitted by using logical transmission medium. Here the original data can be divided into number of packets and send via transmission medium. In the receiver side the packets are combined and converted into the original message. Before display the content to the user the packets are converted into original content. In the wireless communication routing is the very important concept. It means select the optimum root for sending the packet form data. Mostly delay will occur during data transmission and also it used more energy. In the traditional system the specific node collect the details from its previous node. But nodes are collected the entire details from the other all nodes instead of the nearest node. Systems are directly involved in the communication

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is called as node. Initially this concept was projected van der Meulen. The following fig 1 shows the traditional multi-hop (T M) network model.

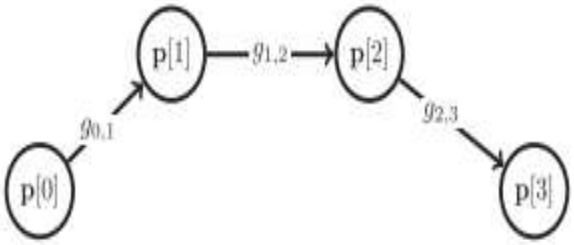

Figure 1: Traditional Multi-hop network Model

In this proposed system is providing the solution for multi-hop network routing. The multi-hop networks are divided into two types. There are traditional multi-hop and Accumulative multi-hop. Each node is collect the information from its previous node concept is applied in traditional multi-hop. In accumulative multi-hop concept each node collected the entire nodes information. The following fig 2 shows the Accumulative Multi-hop(AM) network model

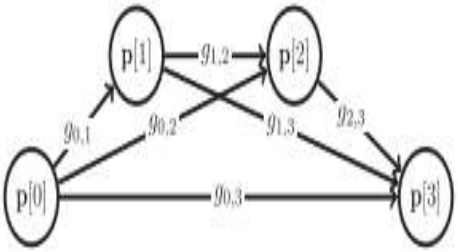

Figure 2: AM Communication Model

The collecting data from various nodes can be done by using two methods. The one of the accumulation method is called as energy accumulation. In this method mainly focus on transmission of data from a single sender to single receiver. In the mutual data accumulation improves the consistency of system and reduces energy consumption during data transmission. The main aim of the proposed system is increase the performance of the network while data transmission and find the shortest way using Floyd-Warshall algorithm.

In this paper section 2 explain about the existing techniques used in multi-hop network model. Section 3 explains about the proposed work architecture diagram and mathematical mode. Section 4 shows the performance analysis of existing and this proposed work. Section 5 concludes the work.

II. LITERATURE SURVEY

Pooja Eknath Sakunde et al., explained says that in wireless communication the data was transmitted from one source to another destination node or one source node to different destination nodes. In wireless communication

the data transmitted by using signals. The encoded data was send from the sender node. In the receiver side the data will be decoded before display to the user. In this wireless transmission selecting a path is critical task. Because the different number of paths are available from source to destination. The authors proposed a new system to choose the beast path for the multi-hop networks data transmission. Here a special code was used to collect the information regarding each packet in the time of data transmission. This proposed system reduce the usage of energy during data transmission and decrease the delay time also [1].

Jesús Gómez-Vilardebó, et al., provide a solution for using the best route in multi-hp networks. In multi-hop networks different paths are used to transfer the data from source to destination. in this multi-hop only one node was transmit the data. The remaining nodes receive the signals and save the signals. After receiving the signals it was processed and combined with already received signals. This concept was increasing communication consistency, decrease energy level and also reduce the latency value. To find out the optimal path by using Dijkstra's routing algorithm. The model was created and makes the hypergraph format. The traditional multi-hop network optimality properties are not used in current networks [2].

M. Sai theja et al., says that the problems to find the best path in single source system with multiple destination devices of multihop networking system. The source node was send the data through transmission medium. The data was encrypted by using various algorithms. In the receiver node decrypt the data before deliver to the user. In this multi-hop network, to find the best path by using Dijkstra's algorithm. This proposed system was finding the beast route, reduce energy consumption and decrease the latency. This above system was implemented and executed successfully with real time values [3].

Youn-Sik Hong et., al., said that AODV protocol was used in mobile ad-hoc networks. If the node mobility was increase the number RREQ and RREP message in wireless communication. When unexpected number of packets are increased in the sender side, the receiving side node receiving rate was automatically decreased. The entire energy usage is also increased in this type of networks. In this paper the author proposed a new method to control the number of packets in the sender side. This proposed system was implemented and used in real time also. The performance evaluation is also done here. The performance metrics are mobility of the node, density of the node and the velocity of the node [4].

Majid Khabbazian et al explained about the fundamental operation of the network. Energy level consumption is the important constrain of the wireless sensor network. To decrease the consumption level of energy various approaches are used in the literature survey. Energy accumulation is one of the important approach for reduce energy usage. In this paper the authors using this energy accumulation in 2D multi-hop network systems. This is the very challenging work compared with linear networking concept. The authors using a new method in multi – hop networks to reduce energy consumption [5].

III. PROPOSED METHOD

This proposed model provides a solution to select the optimal route in multi-hop networks. This problem cannot be solved by using graphical method. In wireless network each and every node transfer the information to the other nodes. In this model if the receiver node receiving signals from the previous node, the current node mix the existing data with current data. This system is modeled by using e Floyd-Warshall algorithm. In this proposed

system the information decoded and transfer to next node. The source system only sent the data. The receiver node collect the decrypted data combined with old data and the accumulative energy. This concept is modeled by using hyper graph. The following fig 3 shows the proposed architecture of multi-hop network system.

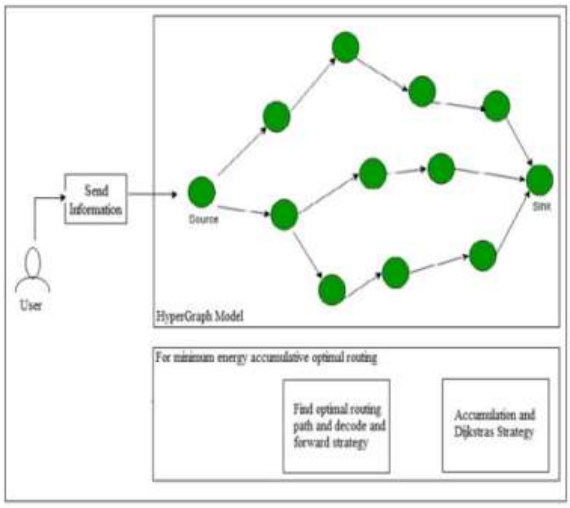

Figure 3: Proposed architecture

In this proposed system concentrate only on less energy path during data transmission. The connection between the two nodes u and v is represented by the channel gain value gu,v ∈ {R+, 0}. Here Pu represents the transmission power of the node. In the receiver side node v signal power is s gu,vPu. The threshold value HD is used to maintain the receiver side energy level. This model is used less power usage compared with existing system. The weight of the path is represented as p.

$$w(\mathbf{p}) = \frac{\sum_{i=0}^{L} P_{\mathbf{p}[i]}}{H_{\mathrm{D}}}.$$

Mathematical Model of the proposed system

S = {N=n1,n2,nn,s,d,t,sp,l,e(m),de(m),w}

Here S is the starting node to transfer the data via accumulative routing network.

N represents number if nodes in the current network = n1, n2, nn.

s - source node

d- destination node

g = (V, E) (s, d) ----------(1)

Equation 1 shows the nodes are represented in graph term.

In the Graph of the proposed network for source node and destination nodeand edges to all nodes are connected in the network

Where i =0, l. t = f (e (m)) + t (sp)----------(2)

t- message transmission

e(m) –encoded information

shortest path sp. m = de (m) ----------(3)

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m - decoded message

w = weightage of selected path----------(4)

IV. RESULTS AND DISCUSSIONS

In wireless data communication the data are transferred from one system to another system by using signals. Before transfer the data it will be divided into number of packers. The decoded data transmitted though transmission medium. Deciding optimal path is very difficult in wireless data communication. In existing system the energy level used for data transfer is high. To reduce the energy level this proposed method is used. Various shortest path algorithms are available now. In this proposed system Dijkstra's routing algorithm is used to find the best route during data transmission. The receiver side node used the concept energy accumulation transmission during data transmission. Due to this reason the energy consumption and latency is reduced. The following fig 4 shows the comparison chart.

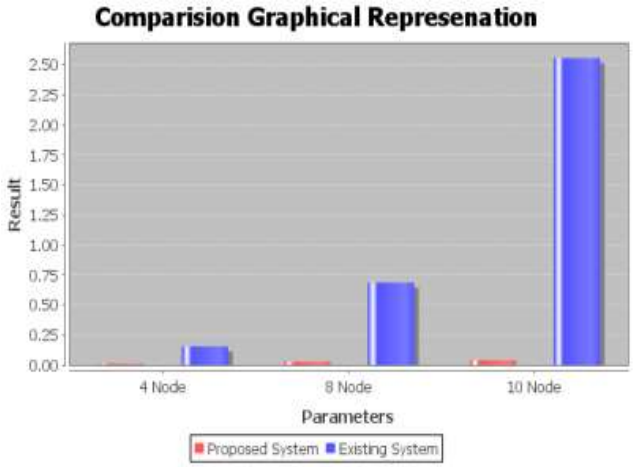

Figure 4: Comparison of Existing and Proposed System

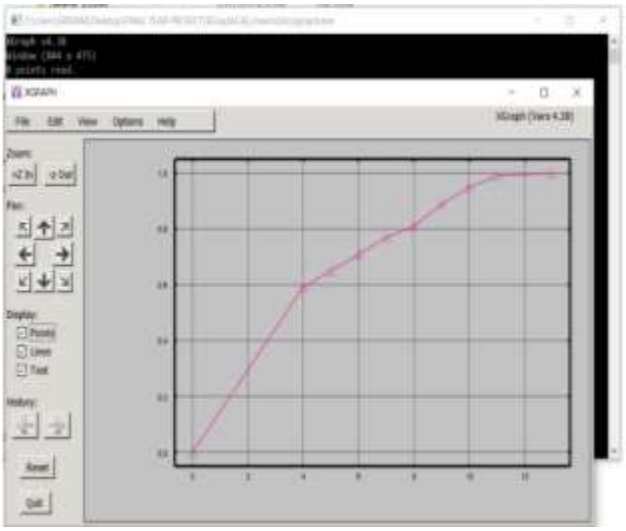

Figure 5: Outcome of the data

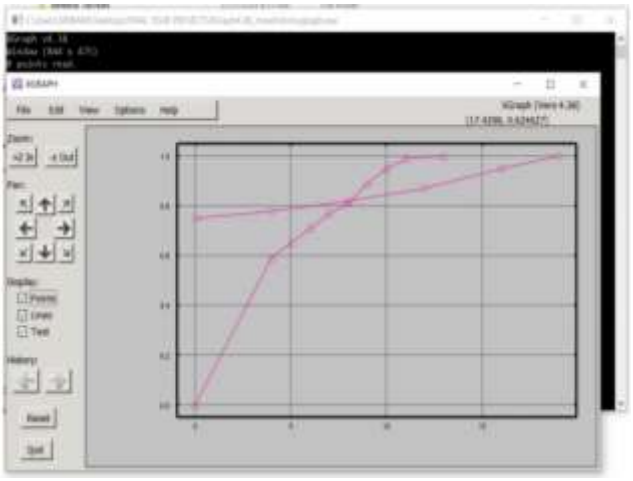

Figure 6: Outcome of the throughput

Fig 5 is the result of the information where the triangular focuses to show the directional way.

Fig 6 is the result for the throughput which results in an adjustment in the directional way of the flare in the middle of various proctors. The above figures are simply fractional results for the proposed framework. Further advancement can results out better yields that fulfill the proposed frameworks functionalities and highlights.

V. CONCLUSION

In wireless communication selection of optimal path is a very difficult process. Because the number of routes available between source node and the destination node. This proposed system is used to find the best route between source nodes to destination node. This system also provides the less energy consumed route using mutual data. Latency value also decreased in accumulative multi-hop networks. Dijkstra's shortest path algorithm is used to find the optimal route. The proposed system is implemented and executed with real time data. Finally the performance value also compared with existing values.

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