Distinguish Between Wireless Communication Bellman-Ford & Fisheye Routing Protocols

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Abstract
There are so many different type of applications in which the wireless sensor networks are used. In wireless sensor network there are different kinds of routing protocols. Bellmanford, AODV, LANMAR, DSR, DYM O, IERP, IGRP, Fisheye etc. These are some routing protocols. In this paper we will describe the comparison between two protocols namely as Bellman ford and Fisheye routing protocols. Here comparison of routing protocols are performing on a special type of emulator software i.e Exata developer version 5.1.

Keywords: *Routing protocol, Exata network emulator software, Nodes*

INTRODUCTION

In wireless communication, communication takes place through the media. Air is a media by which communication is done. Communication means packets are transmitted and received through air. There is a care should be taken that all packets which are transmitted by transmitter are must be received by the receiver. This is very important and challenging role of the receiver that all packets are received by the receiver from the transmitter without any packet loss. So there are some protocols in WSN. In short protocols mean set of the rules for networking purpose. In WSN to forwarding the data packets routers are used. For wireless communication a router is placed between two or number of wireless network. Routers are located at the gateways. So router performs traffic directing function in wireless communication network. So there are set of algorithms and software tools for routing purpose.

OBJECTIVES

- Implementing Bellman-Ford routing protocol.
- Implementing Fisheye Routing protocol.
- Comparing the Bellman-Ford and Fisheye routing protocols.

DESCRIPTION OF ROUTINGPROTOCOLS

Bellman-Ford: The Bellman-Ford algorithm is a graph search algorithm that finds the shortest path between a given source vertex and all other vertices in the graph [1]. This algorithm can be used on both weighted and unweighted graphs. The Bellman-Ford calculation is ensured to locate the briefest way in a diagram. Despite the fact that it is slower than Dijkstra's calculation, Bellman-Ford is equipped for dealing with diagrams that contain negative edge weights, so it is more flexible. It is important that in the event that there exists a negative cycle in the chart, there is no most brief way [2]. Circumventing the negative cycle an unending number of times would keep on diminishing the expense of the way (despite the fact that the way length is expanding). Along these lines, Bellman-Ford can likewise identify negative cycles which is a valuable component.

Fisheye

Fish do have 360 degree vision. Fishes do have higher concentration of optic nerves close to the focal point than elsewhere in eye. As a result fisheye captures with high details in the points near the focal point. In the Fisheye routing protocol every node holds the neighbor list, topology table, next hop table, distance table. This protocol is similar to a link state protocol as it a full topology map at every node. It periodically exchange the topology table within local neighbor only instead of flooding entire network [3]. The topology table updates when frequency decreases with distance to destination. As distance increases the information decreases.

SCENARIO FOR PROTOCOLS
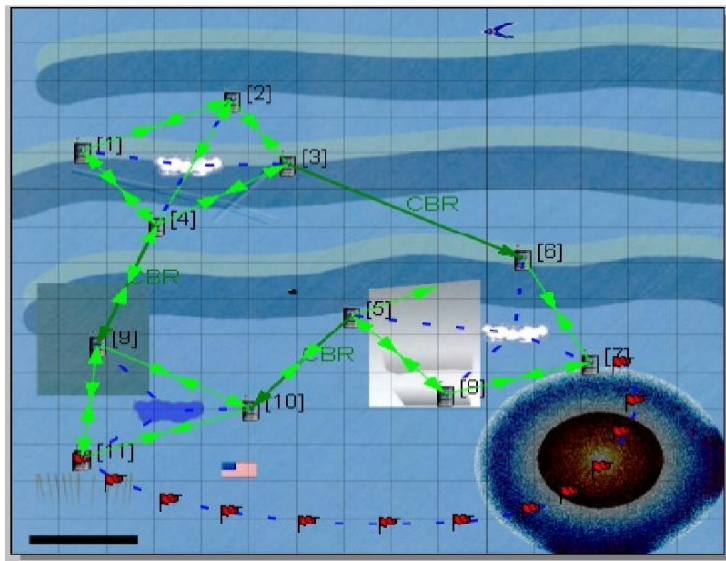
Here the analysis of the scenario is done with the Exata 5.1.This scenario is Airbody. In this scenario there are three Personal Area Networks and eleven mobile nodes are implemented and the path is given from the node 11 to node 7.Thus the communication is done in the network through all the nodes.

COMPARISON BETWEEN BELLMAN-FORD AND FISHEYE

Table 1: *Comparison between Bellman-Ford and Fisheye*

| Parameters	Bellman-ford	Fisheye
Unicast session start / Fragment received	1 sec	1 sec
Unicast session finish / last fragment received	24 sec	24 sec
Total fragments received	21	24
Total Data sent	12288	12288
Total data received	10752	12288
Average end to end delay	0.0409959sec	0.0833903 sec
Throughput	3142.62sec	3443.16 sec
Average Jitter	0.00772237sec	0.0030487 sec

RESULT
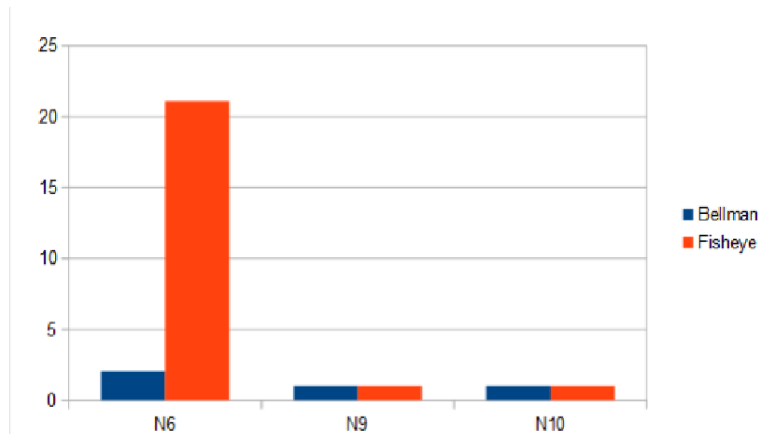
Figure 1: *Analysis of Unicast data send*

Unicast data send

By analyzing these two protocols on Exata 5.1, on basis of graph unicast data send of Fisheye Routing protocol is more than Bellman-Ford Routing protocol at node number six.
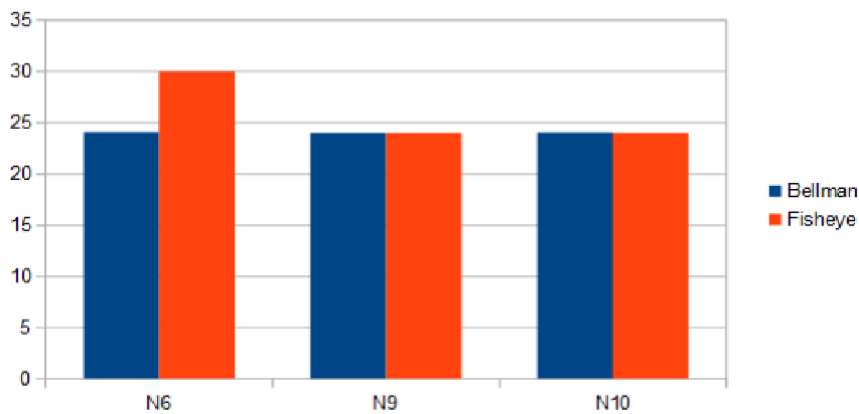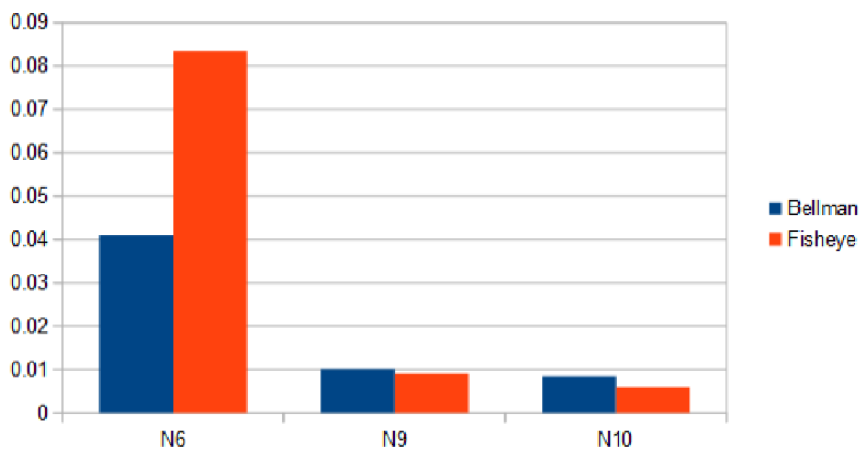

Figure 2: *Analysis of Unicast session finish*

Unicast session finish

By analyzing these two protocols on Exata 5.1, on basis of graph unicast session finish of Fisheye Routing protocol is more than Bellman-Ford Routing protocol at node number six.
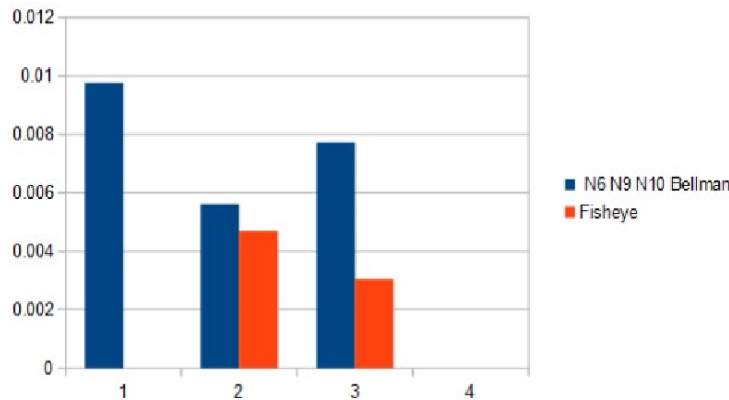

Figure 3: *Analysis of Average Delay*

Average Delay
By analyzing these two protocols on Exata5.1, on basis of graph Average Delay

of Fisheye Routing protocol is more than Bellman-Ford Routing protocol at node number six.

Figure 4: *Analysis of Average Jitter*

Average Jitter:-
By analyzing these two protocols on Exata5.1, on basis of graph Average Jitter of Fisheye Routing protocol is very low sometime it is negligible at some nodes and in Bellman-Ford it is more than the Fisheye Routing protocol.

CONCLUSION
In wireless sensor network having different routing protocol and for different kind of applications. The paper showed difference between two different protocols i.e belman ford routing protocol and fisheye routing protocol and in this paper exata simulator is used for simulation results.by simulation results different parameters are compared and based on that parameters protocols are studied.

REFERENCES
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