CHAPTER IV

IMPLEMENTATION, EVALUATION AND RESULT

4.1 Introduction

The experimental results and evaluation achieved from simulation of the single fitness function for the model using varying parameters are described in this chapter. The chapter opens with a discussion on the performance metrics used, this was subsequently followed by the simulation results and analysis. The chapter is concluded with discussion of the results of the analysis.

4.2 Performance

In this simulation of the wireless sensor network discussed the build of the network that might be especially in an effective way on a wide range of parameters. This is a simulation of WSN, the network size number of nodes in the networks size about 10 sensors of nodes. First, that will improve this simulation of WSN. I need to make communication space, energy casts for transmitting and receiving. However, the simulation shall show us the location of the end zone 'data collection uplink the destination in for example 420 of sensors, radius in 10 pixel radius of a sensor detecting a vector, when the sensor delay of 50 the duration of the delay between packets sent by a tripped sensor that proses of sensor radius are done.

On the transmission cost the energy cost in sending a packet .Setting this value very high will cause nodes to be depleted after sending only a few packet; setting this value very low allows the nodes to send many hundred packets. Because that and this is always scaled based on the distance between the nodes; thus, since more distant nodes can only be reached by a more powerful broadcast, such transmissions more

quickly deplete the energy store of the transmitting node. The receive cost: the energy cost in receiving a packet. This value is not scaled, as is the transmit cost.

In the second part Routing parameters: These factors determine the software properties of the network essentially, the packet-routing method to be used. If routing is set to "random" each nodes selects a downstream connection randomly for each packet. If set to "Directed". The network routes packet based on the algorithm described in the change and tassels article.

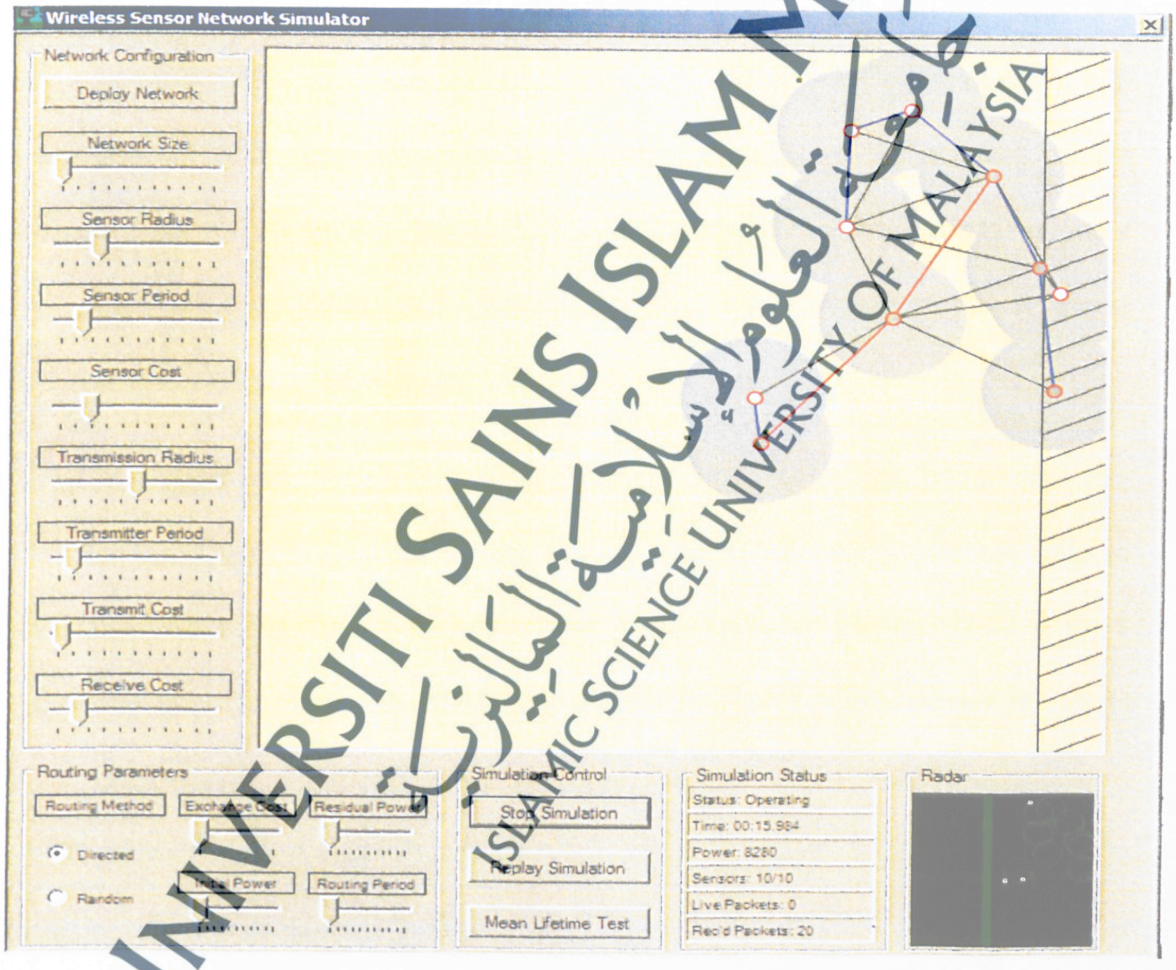

Figure 17: network simulation sensor

The directed routing parameter, that can exchange, residual energy, initial energy and routing period are best understood by reviewing the details of that case. When the

network parameter are set ,the network can be deployed by clicking the "Deploy Network" button .The nodes of the network will be randomly scattered and connected, as shown on the main map. The communications of the network are directed from left to right, and nodes in the "uplink zone" the striped zone at the right side of the map are presumed to be in direct contact with the data collector .An alternative random scattering of nodes may be created by clicking the Deploy Network" button again.

Once the network has been deployed, the simulation may be run by clicking "Start Simulation". The map will show vectors moving through the field and triggering sensors. The sensors may run out of power and drop out of the network, and eventually, all nodes will be powered down. The progress of the network can be monitored via the" Simulation Status" box. A new simulation may be run by stopping and restarting the simulation .Alternatively, the previous simulation may be reviewed by clicking the "Replay Simulation" button.

A second part, the network size of number of sensors nodes of the networks 49. I need to compare with two different application of the energy of every node in 1000 the initial energy. A sensor radius in 42 pixies radius of a sensor in detecting a vector and max (x) dimension of the map almost randomly placing nodes in 515.At same time max (y) dimension of the map nearly randomly placing nodes in 515.Therefore, the simulation of wireless sensor networks will be destination (x) the location of the end zone and date collection uplink about 475. A sensor delay or sensor period which mean that proses of sensor nodes are done on the duration of delay between packets sent by a tripped sensor in 15.And transmitter delay the duration of the packet Transmitter in 32.The transmitter radius of the max communication range of any network node in 75.

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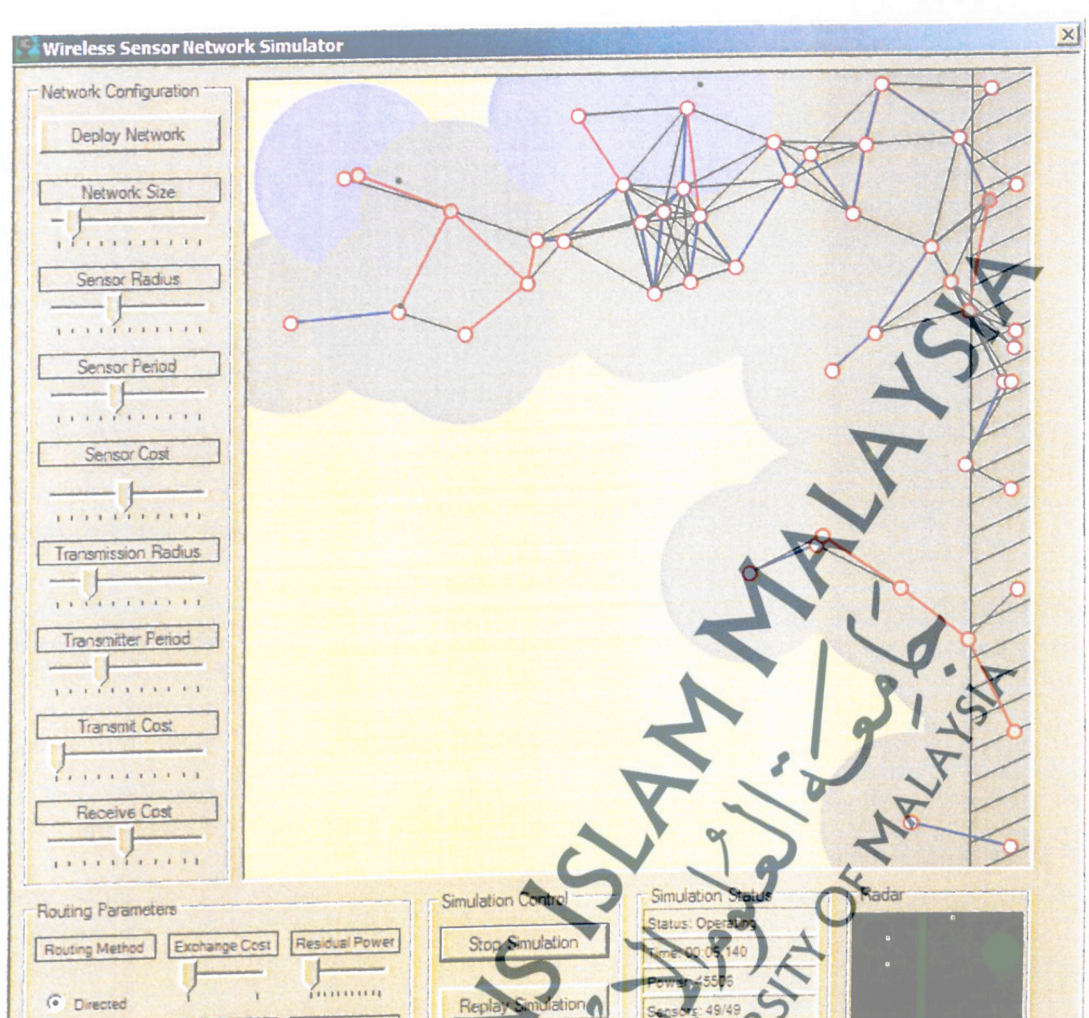

Figure 18: simulation1

Transmitter cast which mean the Power of Wireless in Application and the percent energy cost of sending a packet across (x) pixels scales with distance to be realistic 0.01. In figure 15. It showed my first simulation.

In this case of receive cost the energy cost of receiving a packet of information in 50 and another sensor cost of the energy cost of a tripped sensor =48.On time update delay of the lifetime of directed routing information depend in how long the network waits before re-routing.

4.3 Simulation Results and Analysis

The initial results of the simulator provide promising results. The GUI is able to provide the user with the visualization of the WSN and immediate changes in the different constraints are displayed. The main constraints that the visualization will be looking at are how the nodes are deployed and the appropriate size of the network. The neighbor discovery process and the impact of the number of neighbors have on the network. Furthermore, the protocol being used and the effects that it has on the Node's power supplies are critical to the overall life of the network.

Tables 6 .Test result and analysis1:

Network size	Number of nodes in the network=10
Energy	The initial energy of every node=1000
Sensor Radius	The pixel radius of a sensor for detecting a vector=45
Max X	Max X dimension of the map(for randomly placing nodes) =515
Max Y	Max Y dimension of the map(for randomly placing nodes))=515
Destination X	(the location of the "end zone"(data collection uplink)=475
Sensor Delay or Sensor period	The duration of the delay between packets sent by tripped sensor)=15
Transmitter Delay	The duration of the packet transmission)=10
Transmission Radius	The maximum communications range of any network node)=130
Transmission Cost	The percent energy cost of sending a packet across(x) pixels-scales with distance, to the realistic=2.0
Receive Cost	The energy cost of receiving a packet of information=15
Sensor Cost	The energy cost of a tripped=20
Update Delay	The lifetime of directed routing information; i.e., how long the network waits before re-routing=1

Test Simulation for Analysis 1

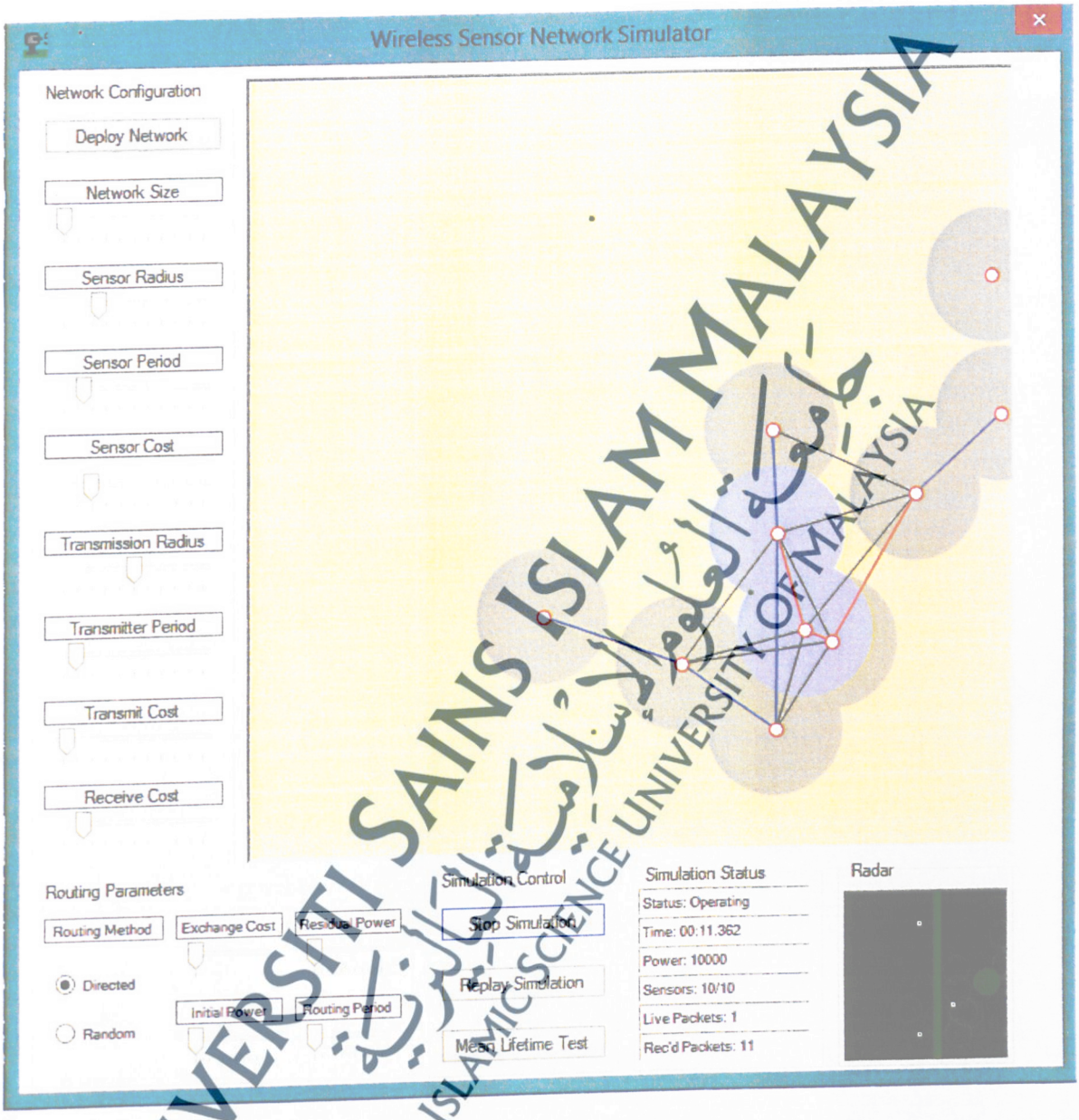

Figure 19: Test Simulation for Analysis 1

Table 7. TEST .

Network Parameters	Network size	Sensor radius	Sensor delav	Transmitter delav	Transmission cost	Receive cost	Sensor cost
Simulation Test 1	10	45	15	10	2	15	20
Simulation Test 2	15	81	64	45	59.15	81	64
Simulation Test 3	20	24	42	43	2	46	69
Simulation Test 4	25	76	72	54	47.32	70	45
Simulation Test 5	30	119	32	52	48.4	63	43
Simulation Test 6	35	75	46	52	35.49	73	62
Simulation Test 7	40	105	70	53	39.79	70	65
Simulation Test 8	45	61	53	64	52.7	64	63
Simulation Test 9	50	73	62	42	62.38	55	47
Simulation Test 10	55	76	70	67	67.75	60	72

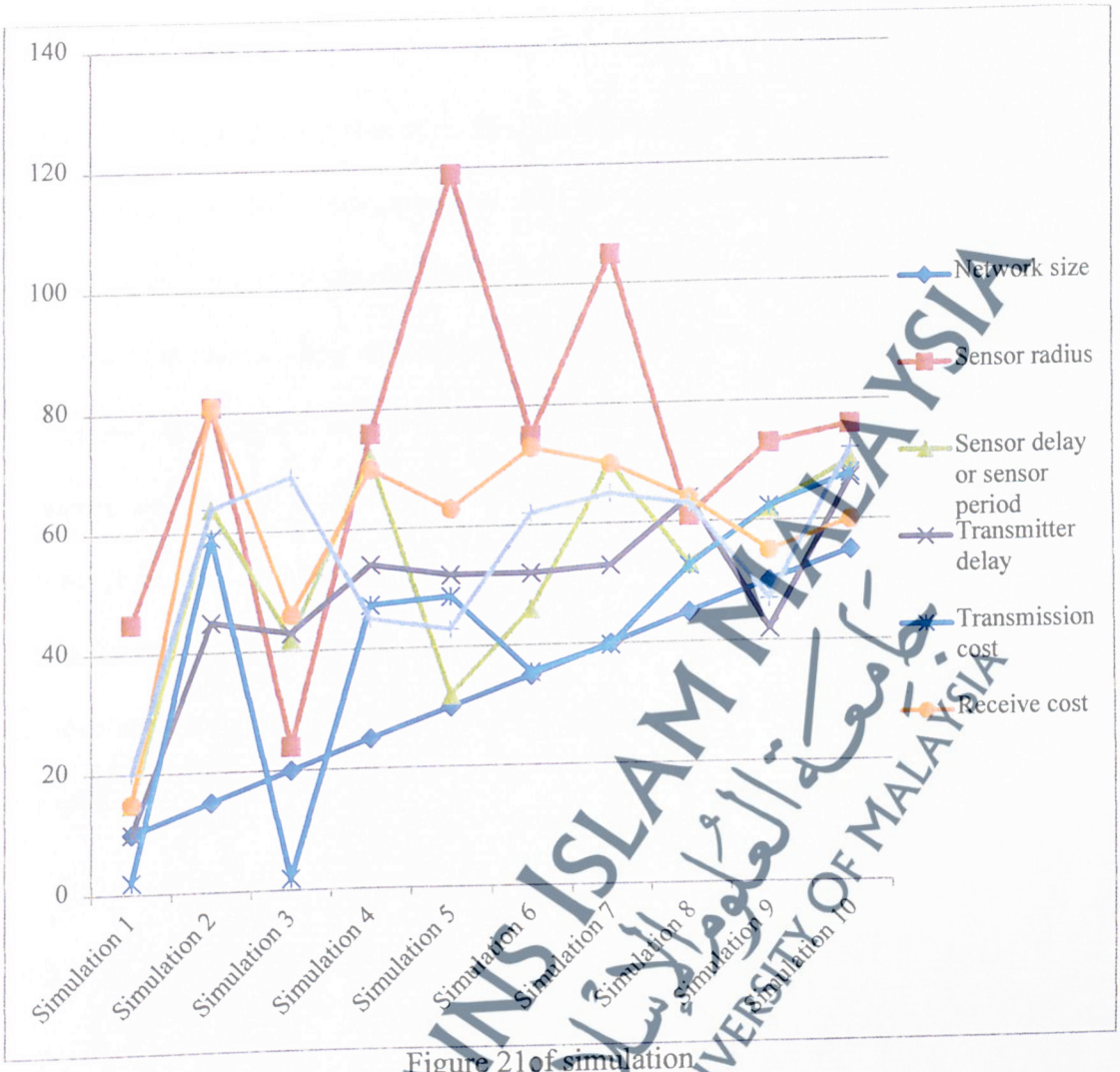

Figure 21of simulation

4.4 SUMARY

In this research, the project was done through a simulation of wireless sensor network, their formulations and assumptions as well as solutions are proposed. The sensor coverage is an important element for QoS in the applications of simulation of wireless sensor network. Scheduling sensor nodes to alternate between sleep and active mode is an important method to conserve energy resources. Such as, each node also depends on energy stord which is depleted by sending and receiving packets and by detecting vectors. It is also suitable for those who need a little update on this simulation of wireless sensor .In future research, more and more work will be focused on distributed and localized solutions for practical deployment by simulation of wireless sensor networks.