

ABSTRACT

The wireless communication system usage as communication media in computer networking is growing rapidly and almost all of the people use it these days. Using too much cables in a network is less efficient and flexible to be implemented in an application which is using the distances between the object's locations are measured by a remote monitor. One of those applications is Wireless Sensor Network (WSN) which can be used to gather informations from sensor nodes to do monitoring and controlling at ease. In a chicken poultry, there are many things to be noticed for getting a good chicken quality and meet with the requirement. Some of those important things are temperature and humidity of the chicken coop.

Therefore, it is necessary to create a system which is capable to monitor the temperature and humidity of the chicken coop everytime. one of the solutions is creating a temperature and humidity monitoring system, and also automatic equipment controller in chicken coop using Zigbee (IEEE 802.15.4) based Wireless Sensor Network (WSN). This system is also capable to be used everywhere. So to solve this problem, this final assignment is also created by using android smartphone as a monitor and control media/device for user.

In this final assignment, the measurement stated that the maximum distance of Zigbee to send the data in Line Of Sight (LOS) is 81m and Non Line of Sight (NLOS) is 31m. according to the experiment, the implememntation of Ad Hoc On Demand Distance Vector algorithm is successful. By using AODV algorithm, the measurement stated that the average maximum delay is 235ms.

Key words : Wireless Sensor Network (WSN), Zigbee, DHT11, microcontroller, Android Smartphone