

## **ABSTRACT**

*Nowadays, Overall poultry meat consumption has increase continually. So we must give more attention about several factors that can support the production. One of these factors is the temperature and humidity in the chicken broiler farm must be controlled. Hence, automation is crucial in poultry farming industry. In this case focuses on the integration of wireless sensors network to control and monitor following environmental parameters.*

*In this automatic temperature system consists of temperature and humidity sensor DHT11; microcontroller; switch relay; and Zigbee technology as a data communication medium between nodes. The system starts from a sensor scanning the environment until it is displayed on a website page, so user can monitor the farm environment.*

*To know the performance of the designed system, so this measurement is very important to test the quality of the network between multiple nodes with several different scenarios. Maximum range of xbee when the conditions of Line of Sight (indoor and outdoor conditions) farther than urban conditions. Range of xbee when the indoor Line of Sight conditions are 79 and outdoor can to reach a distance until 94 meters. for urban areas, indoor conditions at 46 meters distance, but for outdoor conditions about 83 meters. In the wireless communication system, distance becomes the factor that affect the end2end delay value. The end2end delay value is directly proportional to the distance. This is due to the long distances between the transmitter and receiver nodes create a longer delay end2end. The throughput value are inversely proportional to the end-to-end delay value. The node sensor requires 3.15 mW of power supply and has a system life time of 4 hours and 42 minutes.*

**Keyword:** *Automatic temperature and humidity system, monitoring, Wireless Sensor Network (WSN), QoS.*