ABSTRACT

Mostly, people need to have a comfortable place when they are doing activity on a daily basis especially for an indoor activity. Comfort can support the quality of performance and productivity then generate the desire to do something. Increased average temperatures and uncertain weather changes cause drastic temperature changes. This comfort system developed with Wireless sensor network technology with internet of things implementation. The system use DHT22 as a temperature sensor that can detect temperature and humidity in a room.

In this system use Arduino uno with Xbee S2C which is a communication module and serves as a communication between devices as well as a link to Raspberry pi. On Raspberry pi is used as the temporary data storage which will be uploaded using internet database. The data stored in the database will be used as data uploaded to the website viewer so that it can be monitored and controlled. On the control system using a relay for the temperature control on the Air Conditioner (AC).

The analysis of the Xbee S2C that it can communicate with a maximum distance of 56.5 meters from the koordinator node. Has an average throughput of 5.6211 bytes / s and delay of 204.13 milliseconds. In testing the system using the internet network when monitoring get the average throughput and delay of 201.0538 bytes / s and 166.43 milliseconds while the controlling system has a throughput of 165.6784 bytes / s and delay of 1.1261 second. The system also has 97.7210% availability and reliability of 97.7719%.

***Key words*: *Wireless sensor network*, Xbee S2C, DHT22, *monitoring*, *control*, *Internet of thing*.**