ABSTRACT

In reality the implementation of Wireless Sensor Network, know the location of the sensor becomes important for managing and analyzing sensor data in spatial and temporal context. The use of WSN is already increasing in various sectors such as military, medical, disaster relief as well as mapping the environment [3]. Limitations of the coverage area into consideration in the design and integration of WSN for wide area coverage and details as well as the demands of precision and correct results.

Integration between WSN system localization can be a solution with regard to the limitations of the internet in reaching an area. Mapping locations such as on the space-basements, multi-storey buildings and a wide area can be addressed by the system Indoor Localization. The placement of the device node as XBee transmitter location mapping then conducted against an arbitrary node and then processed so that the actual distance based procured calculation power level received. In this final task performed three scenarios testing by using four devices as sensors node (TX) to changes the distance between the different nodes and three different environments.

The experiment results in this study, the value of localization error obtained i.e. 0.0966 in 7 meters while testing the value of the smallest error is 0.0929 on the testing of 10 meters. Most localization coordinate error value 1.3144 meters. The value of the largest localization error against different room conditions is 0.1078 while the smallest 0.0708. The results of the above errors indicate the system is working well and can conduct localizations are pretty precision

Keywords: RSSI, WSN, indoor localization and Xbee.