ABSTRACT

The development of technology, especially in the field of telecommunications and information is currently growing and sophisticated. One of them is a system of tracking or finding objects in the room based on the user's position. The technology that is being widely used today is using the Global Positioning System (GPS) which can be easily used, but this GPS technology still has drawbacks when used indoors or in buildings, its performance is not optimal and cannot detect where the user is exactly where. For this reason, this study applies indoor localization at the Telkom Purwokerto Institute of Technology by utilizing (WSN) Wireless Sensor Network and Zigbee technology with localized Received Signal Strength Indicators (RSSI) as a communication medium. Using ZigBee technology because of its superior distance range and power consumption compared to other technologies. The trilateration method in this study is used to calculate the estimated position of the unknown node. Where the number of unknown nodes is 18 points. From the test results, the pathloss exponent value is 0.9836, and the level of accuracy obtained from the real distance with the estimated distance is 1.652 meters. And if it is divided into 4 zones in 1 room, it will be seen which part has the best positional accuracy value.

Keywords — Indoor Localization, RSSI, ZigBee, Trilateration..