

ABSTRACT

A walking aid in the form of a cane is one of the facilities intended to help someone such as the blind, the elderly or the elderly who need this tool. However, the stick at this time still has limitations, it can't provide information on the user's location, especially indoors, it still has limitations. Currently the search for routes is made easier with the presence of Global Positioning System (GPS) technology, but the accuracy of GPS will decrease if the user is in a building or in a closed room. Because the satellite signal sent cannot penetrate the thick wall, the GPS is only limited to finding routes outside the building.

To solve this problem, a stick is designed that can provide information on the user's position in the room using Bluetooth Low Energy (BLE) and Zigbee technology and the Trilateration Algorithm to determine the location in a room. From the testing of the two technologies, it was found that BLE has an average value of the actual location distance with the estimated location in case 1, which is 2.1519 meters and in case 2, which is 3.4916 meters. While Zigbee has an average value of the actual location distance with the estimated location in case 1 which is 2.8299 meters and case 2 which is 3.9061 meters.

Keyword : Stick, Indoor Localization, IoT, Bluetooth Low Energy, Zigbee, RSSI, Trilateration