

## Abstract

Currently, Telkom University using RFID technology as a tool for the presence of students. However, there are still trouble that cause the system is not running as it should, the card or RFID receivers were damaged, and the scanning process is one by one causing the students have to queue to make presence.

In this thesis proposed a presence system using Bluetooth technology in mobilephones. It observe the reliability of the use of Bluetooth mobile phone as a means of student presence, influence the type of bluetooth (omnidirectional and unidirectional) and layout of the Bluetooth antenna and Bluetooth scanner that is placed in the classroom.

The average maximum distance obtained in omnidirectional outdoor measurement is 33.07 while the average distance of the effective use of Bluetooth scanner that is 7.99 meters. RSSI measurement and coverage area outdoor unidirectional gain maximum distance for mainlobes is 26.31 to 36.44 meters, while the effective range for mainlobes is 7.45 to 13.76 meters. Corresponding RSSI measurements and indoor coverage area of each scenario, it was found that each of these scenarios can reach all areas of the classroom, even outside the classroom.

The results of tests already carried out for the best performance is the use omnidirectional in the middle of the classroom, in the two sampling respectively 73.68% (62.15 seconds) and 78.95% (60.76 seconds). However, overall in this scenario the system is only able to detect 78.95% (122.91 seconds) student attendance.

**Keywords:** Bluetooth, Smart Presence.