

ABSTRACT

Cat has fast body movements and high levels of stress if the environment is bad. Giving space to the animal by releasing it from the cage is a way to maintain the health of cats. But this is very risky because losing a cat can occur. Therefore, it needs a tracking system that is easy to use by cat owners to find out the presence of cats inside and outside the home.

This final project will design a tracking system for monitoring the position of the cat using Bluetooth and GPS modules. Bluetooth HC-05 module as a beacon to emit frequency signals in 10 meters radius. GPS will provide coordinate points in the form of latitude and longitude data that can be displayed via digital maps on Google Maps. So that the cat owner can find out the position of the cat outside the house.

The test results show, 1) Frequency signals emitted by the Bluetooth module HC-05 as a beacon could be detected by Bluetooth on SIM808 in various test points and a predetermined distance in radius of 10 meters. 2) The device on the cat is able to send latitude and longitude coordinate data to the user periodically every 3 minutes via SMS after GPS first gets the latitude and longitude coordinates. But there is a different time difference or more than 3 minutes due to an error that occurs in the GPS to get a signal of at least 3 satellites to get the latitude and longitude coordinates. 3) Using Haversine formula, the difference of distance for testing GPS on open plains has an average value of 2,01 meters and for testing GPS on plains around high-rise buildings has an average value of 7.07 meters.

Keywords: *Cat, SIM808 Module, Bluetooth HC-05 Module, beacon, GPS, latitude and longitude, Google Maps, Haversine formula.*