ABSTRACT

In essence, official vehicles facilitate the implementation of the duties, responsibilities, and obligations of Civil Servants to the government and society. However, there are still many state officials who deviate and abuse official vehicles, but these symptoms are often ignored by law enforcement officials in order to reduce abuse of official vehicles and law enforcement. One way to overcome the problem of misuse of official cars is to install a GPS tracker on official vehicles. In this study, the authors plan to design an official car monitoring tool in the city of Bandung using a GPS tracker based on LoRa communication. In this design, the sensor readings can be monitored in real-time via platform and dashboard Antares TrackerID. The results of the design of the official car monitoring system in the city of Bandung using a GPS tracker based on LoRa communication succeeded in sending location data of a vehicle that can be monitored in real-time on dashboard Antares TrackerID. GPS tracker does not work well against concrete wall barriers, but this can be overcome by activating it or triggering it first in the open so that the GPS can receive location coordinate data from satellites. GPS tracker that has been designed has an accuracy level of <10m, with an average error distance of 1.58 meters, and the maximum distance for the device to be able to transmit data as far as 4.67 Kilometers in Non-Line of Sight (NLOS) conditions. The value of Received Signal Strength Indicator (RSSI), Signal Noise Ratio (SNR), and Packet Loss is strongly influenced by the number of obstacles in an area.

***Keywords**: Official Vehicle, LoRa Communication, Internet of Things, GPS Tracker*