

Abstrak

Jumlah Dokter Spesialis Gawat Darurat tidak sebanding dengan angka kasus kegawatdaruratan atau kecelakaan yang terjadi dan membutuhkan layanan ambulans gawat darurat. Oleh karena itu diperlukan sistem monitoring ambulans berbasis *Internet of things* (IoT) terintegrasi dengan HP Android melalui jaringan internet. Sehingga peran dokter spesialis dalam memonitor pasien gawat darurat lebih efektif dan efisien.

Piranti yang digunakan IP Kamera, ESP8266, HP Android, *mifi*, DHT11, dan GPS. Sistem dari ambulans mengirimkan paket data ke cloud server kemudian diteruskan menuju HP Android yang berada di Rumah Sakit untuk keperluan monitoring dan pengawasan oleh dokter spesialis manakala terjadi perburukan saat perjalanan menggunakan ambulans.

Hasil survei, percobaan dan pengukuran menunjukkan bahwa sistem integrasi ini dapat bekerja lebih aman dan fisien. Dimana pengukuran pada sistem ambulans pada kualitas jaringan di atas 3,7 Mbps dan tingkat error GPS 0% atau ketepatan akurasi 100%, pengukuran rata-rata sensor suhu didapat kesalahan 0,61% dan akurasi mencapai 99,39%, pengukuran rata-rata sensor kelembapan mencapai akurasi 99,71% dan kesalahan 0,29%. Sedangkan gambar masih terlihat jelas pada kecepatan laju ambulans maksimal pengujian 80 km/jam.

Kata kunci : Ambulans Gawat Darurat, Internet of things, Gambar, Suhu, kelembaban, dan GPS monitoring.

Abstract

The number of Emergency Specialists is not proportional to the number of emergency cases or accidents that occur and require emergency ambulance services. Therefore, an Internet of things (IoT)-based ambulance monitoring system is needed that is integrated with Android phones via the internet network. So that the role of specialist doctors in monitoring emergency patients is more effective and efficient.

The devices used are IP cameras, ESP8266, Android phones, mifi, DHT11, and GPS. The ambulance system sends data packets to the cloud server and then forwards them to the Android phone in the hospital for monitoring and supervision purposes by specialist doctors when the patient get worse while traveling by ambulance.

The results of surveys, experiments and measurements show that this integrated system can work more effectively and efficiently. Where the measurement on the ambulance system on the network quality is above 3.7 Mbps and the GPS error rate is 0% or accuracy is 100%, the average temperature sensor measurement has an error of 0.61% and the accuracy reaches 99.39%, the average measurement humidity sensor achieves 99.71% accuracy and 0.29% error. While the picture is still clearly visible at the maximum ambulance speed of 80 km/hour testing

Keywords: Emergency Ambulance, Internet of things, Image, Temperature, Humidity, and GPS monitoring.