

ABSTRAK

Perawatan dalam menjaga keamanan perjalanan kereta api tidak cukup hanya dengan kemampuan manusia, namun juga perlu adanya dukungan dari perkembangan teknologi. Kondisi prasarana rel harus dalam kondisi laik operasi merupakan tolak ukur keselamatan dan keamanan perjalanan kereta api. Salah satu masalah yang sering muncul dalam jalan rel yaitu keausan rel. Rel yang laik beroperasi adalah didapat dari hasil perawatan menggunakan alat ukur keausan rel yang telah dibuat. Penerapan teknologi *Internet of Things* yang akan dilakukan pada penelitian ini berupa *software web dashboard* Blynk. Tujuan penerapan IoT, guna memonitoring data *output* hasil pengukuran rel secara *wireless*. Didapatkan hasil penelitian, sistem dapat berfungsi menampilkan seluruh data informasi berupa nilai *a max*, *e max*, *safety status a*, *safety status e*, *latitude* dan *longitude*. Tingkat akurasi GPS mencapai titik eror jarak terbesar. Data *logging* dapat tersimpan real time setiap 1 detik. Terdapat 215 data csv pada 21 titik rel uji. Setiap titik rel uji terdapat 8 sampai 10 nilai. Data GPS yang terbaca, sebagian ada yang tidak tersimpan. Hal ini disebabkan jaringan koneksi yang kurang kuat.

Kata Kunci : keausan rel, monitoring, *wireless*, *Internet of Things*.

ABSTRACT

Care in maintaining the safety of train travel is not enough only with human capabilities, but also the need for support from technological developments. The condition of rail infrastructure must be in operational condition, which is a measure of the safety and security of train travel. One of the problems that often arise in railroads is rail wear. A rail that is operational is obtained from the results of maintenance using a rail wear gauge that has been made. The application of Internet of Things technology that will be carried out in this study is in the form of the Blynk web dashboard software. The purpose of implementing IoT is to monitor the output data from rail measurements wirelessly. The research results show that the system can function to display all information data in the form of values a max, e max, safety status a, safety status e, latitude and longitude. GPS accuracy level reaches the biggest distance error point. Logging data can be stored real time every 1 second. There are 215 csv data on 21 test rail points. Each test rail point has 8 to 10 values. GPS data that is read, some are not stored. This is due to a network connection that is less strong.

Keywords : *rail wear, monitoring, wireless, Internet of Things.*