Perancangan dan Pembuatan Aplikasi Penampil SoC berbasis Android untuk Battery Management System Berbasis Bluetooth Low Energy = Design and Development of Android-based SoC Viewer Application for Battery Management System Based on Bluetooth Low Energy

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Abstrak

Sekitar 60 persen polusi yang ada di Indonesia di akibatkan oleh pemakaian motor dan mobil yang menggunakan bahan bakar minyak. Oleh karena itu, Kementerian Perhubungan menerbitkan aturan penggunaan kendaraan alternatif dan percepatan kendaraan listrik. Baterai merupakan media penyimpanan energi untuk kendaraan listrik. Baterai diperlukan battery management system supaya dapat dipantau, dan dipelihara. Pada skripsi ini, penulis melakukan studi literatur yang memiliki hubungan dengan Battery Management System, Flutter, Bluetooth Low Energy, dan mikrokontroller. Setelah itu penulis melakukan perancangan dan pembuatan aplikasi penampil State of Charge berbasis android menggunakan Flutter sebagai framework. Hasil aplikasi tersebut dilakukan pengujian dengan menggunakan data dummy yang dikirimkan oleh Battery Management System melalui bluetooth. Hasil uji data dummy dilakukan analisis dan ditarik kesimpulan bahwa aplikasi penampil State of Charge berbasis android terbukti berhasil.

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Around 60 percent of pollution in Indonesia is caused by the use of motorcycles and cars that use fuel oil. Therefore, the Ministry of Transportation issued regulations for the use of alternative vehicles and the acceleration of electric vehicles. Battery is an energy storage medium for electric vehicles. Batteries need a battery management system so that they can be monitored and maintained. In this thesis, the author conducts a literature study that has a relationship with the Battery Management System, Flutter, Bluetooth Low Energy, and a microcontroller. After that, the author designed and made an Android-based State of Charge display application using Flutter as a framework. The results of the application were tested using dummy data sent by the Battery Management System via bluetooth. The results of the dummy data test were analyzed and concluded that the Android-based State of Charge display application proved successful.</p>