The Integrated Traffic Control System

Folarin, Oluwapelumi
Lawal, Oluseyi
Lawal, Oluseyi

The project is designed to address the shortcomings observed in traffic control, which has resulted in adverse effects on the economy. Furthermore, the erratic power supply in Nigeria affects their efficiency and those that are solar powered are expensive and not durable. Our system is powered by a locally made solar panel. The prototype road, made of black perspex was demarcated into four sections, controlled by the controller circuit. The moving cars were represented by LED and stationary cars represented by toy cars with metal stripes that helps to lock and unlock the system, the working of the circuit was controlled by the PIC 16FAAA. Once the passive infra-red ray sensor perceives the presence of vehicles indicating traffic, it sends signals to the PIC which decodes the signals and controls the traffic appropriately. The processor is programmed to display traffic control light sequences for the three lanes traffic junction. As the processor is outputting the sequences and at the same time checking the traffic sensor, any lane that is not engaged is jumped over. When all the lanes are having about same number of vehicles, the traffic light goes on periodic mode. The overflow mode is activated if all lanes have vehicles but varying number, thereby allocating time based on volume of traffic on each lane. It is also programmed to recognise emergency vehicles and give them priority access. Road users can seek route of least traffic as the system is interfaced with a Traffic Mobile App which we designed using JAVA. Received signals from the traffic control are sent to Apps on the phones and tablets, which display the least traffic route and other vital information. The project has demonstrated that traffic control can be made smarter.

Awards Won: