

Safety System for Bicycle Rider

Ahmed Bensenouci, Huda Shamsaldeen, Azzah Alshmarani

Electrical and Computer Engineering Department (ECE)

Effat University, Jeddah, KSA

abensenouci@effatuniversity.edu.sa, hishamsaldeen@effat.edu.sa, aalshmarani@effat.edu.sa

Abstract

Road accidents are increasing every year. According to the world health organization, the Percentage of cyclist's victims are 5% and motor cyclists' victims are 23%, and the most Accidents happened between 4:00 pm to 11:59 pm when the sun is setting. These numbers indicate the importance of finding a solution to reduce these accidents for the cyclists, so that we keep the cyclists safe.

We aim at having a safety system that will capture the cyclists intended actions by using switches and send this information to the microcontroller (Arduino) which, in turns, will send the proper signal to the actuator which is basically the LED Matrix (Figure 1 and 2). The LED Matrix will display a message to the drivers near the bicycle to inform them with the intended action of the cyclists. The message may be an arrow indicating that the cyclist is going to turn to a specific direction, etc. This system will help making the drivers more attentive to the cyclists and will help reduce the percentage of cyclist's victims. The topic will include features for the rider which are a mobile phone charger and GPS tracker. Electric power supply is obtained using a DC Generator to both recharge the battery and supply power to divers' components.

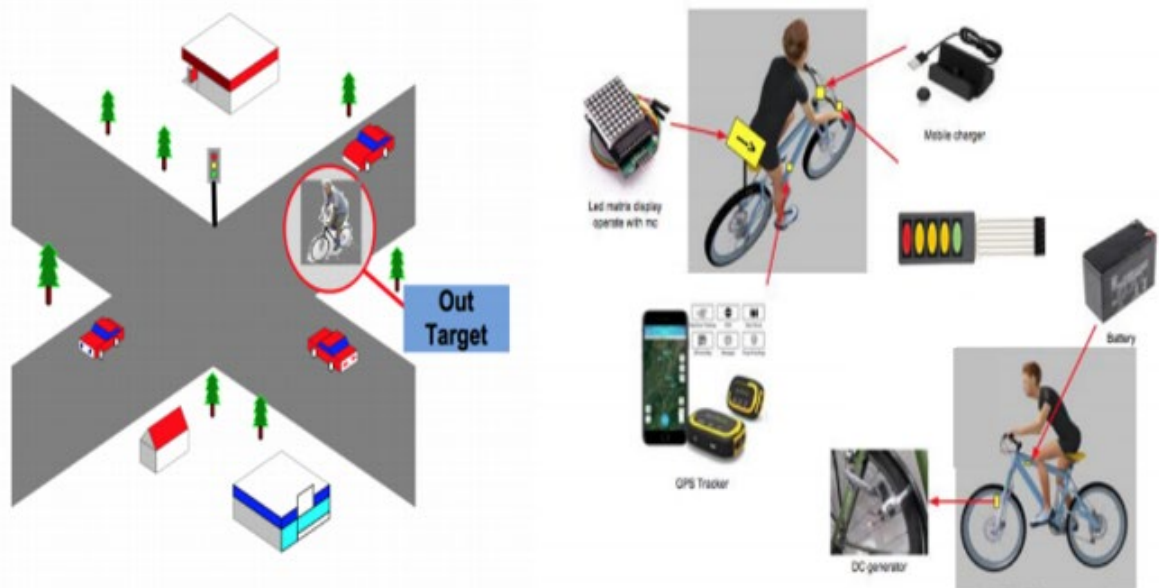


Figure 1 System Architecture

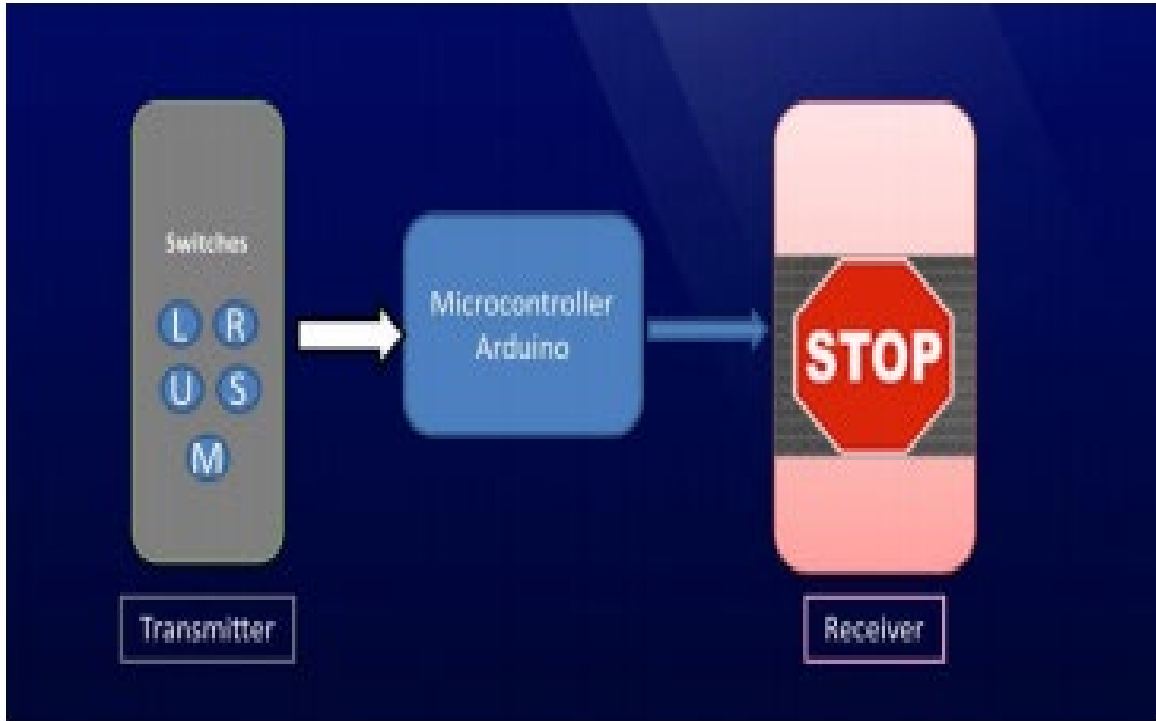


Figure 2 Block diagram of the signaling system