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Intelligent Traffic Control System using RFID

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Abstract - An ambulance is a vehicle that is used to carry an accident prone victim or a patient to a hospital. Due to the recent increase in vehicular population, the congestion caused by it has led to failure of the ambulance to arrive in time to the hospital. This is a serious issue. Lives of people are at stake. Ambulances carry victim in a very critical condition. The victim should be given intense care or treatment so as to save his life. But most of the times, the ambulances are stuck in traffic, which reduces the chance of survival of the patient. With the current traffic control system it is impossible for the ambulance to always reach the hospital in time. In the current traffic control system, at an intersection, each road is given a particular time interval in which the vehicles of that particular road can move. When one road is given a green signal, all the other three will be red. But, one of the major drawbacks is that even when there are no vehicles on the road that is green, other vehicles has to wait until the time period is over. When an ambulance arrives at any of the three roads, it will be stuck in the traffic, leaving it no choice but to wait with the patient in critical condition.

I. INTRODUCTION

Since the invention of vehicles controlling the traffic has been as serious concern for law enforcers. Many solutions have been brought up but all in vain. No method has been proven efficient. When it comes to ambulances, they are vehicles that must be given highest priority on road as it carries a person who needs immediate medical care. Usually vehicles move aside to give way for ambulances to pass, but it may not be the case always as at high traffic congestion areas like intersections, it may not be possible for vehicles to give way in time for the ambulance to pass. The only way is to manually control the traffic but even that is not always efficient. We are trying to bring out a way to control the traffic automatically by detecting the arrival of the ambulance before it reaches the intersection.

II. PROBLEM STATEMENT

In foreign countries, ambulances are given special lanes so that they can move through without any blockage. But due to population congestion and space complexity, special lanes cannot be adopted for ambulances.

III. METHODOLOGY

STEP 1: The arrival of the ambulance is detected and the information is sent to the processor placed at the traffic control system.

STEP 2: A fourth light (blue) which is a part of our proposed system is turned on with whichever light is currently turned on, letting everyone know that there is an ambulance coming.

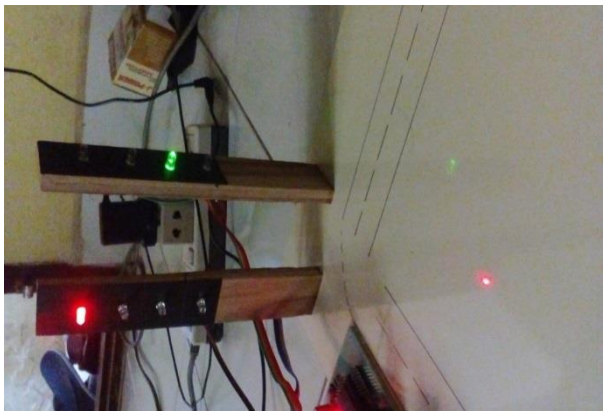
STEP 3: After a particular time interval the signal of the particular road on which the ambulance is coming turns green letting the vehicles waiting on that road to move ahead and clearing the path for the ambulance to move through the intersection

Step 4: By the time the ambulance reaches the intersection, all the vehicles on that particular road would have moved forward leaving a clear path for the ambulance.

STEP 5: Once the ambulance passes through the intersection, the light turns to whichever condition it was before the ambulance was detected.

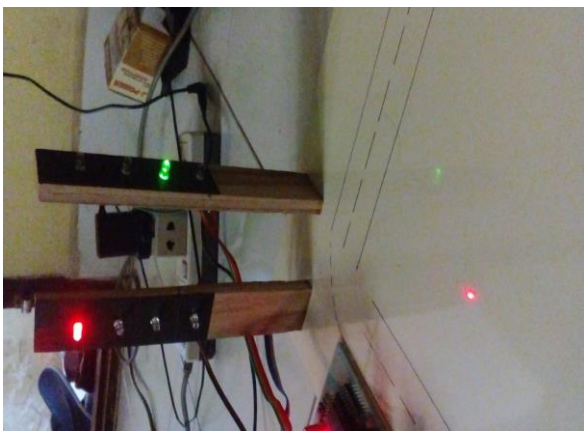
Images

1.) Before the arrival of the ambulance.



2.) When the ambulance is detected

3.) After the ambulance passes the signal



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IV. CONCLUSION

The proposed system detects the arrival of the ambulance before it reaches the particular intersection. It uses a fourth light (blue) to let the vehicles at the traffic signal know that an ambulance is arriving at that particular intersection. The blue light is shown with whichever signal that is on at that particular time which helps to prevent any confusion. At a particular distance, the signal of the particular road turns green letting the vehicles move before the ambulance arrives. Once the ambulance crosses the intersection, the signal turns to whichever condition it was on before the arrival of ambulance.

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