

WIRELESS TRAFFIC SIGNAL PRE-EMPTION FOR EMERGENCY SERVICES

A Report submitted to
KARNATAKA STATE COUNCIL FOR SCIENCE & TECHNOLOGY
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ABSTRACT

Often the ambulances get stuck at the traffic signals where all other vehicles try to squeeze into all the available space so as to move ahead as soon as the signal turns green. Unlike western countries, Indian cities cannot think of having separate lanes for emergency purpose because the roads are not broad enough. The need of the hour is to understand the gravity of such an emergent situation by everybody.

In this project, we will automate the traffic lights such that any ambulance or a fire brigade coming from any direction will be allowed to pass through heavy traffic without much hassle. The idea is to detect the presence and direction of an approaching ambulance or a fire brigade and immediately give them the right-of-way by turning the required traffic light green, so that the ambulance doesn't get stuck in the traffic.

We intend to achieve this by the use of transceivers in the ambulance or a fire brigade, on the roads at a specified distance from the traffic signal and also in the main traffic control. The transceivers in the ambulance or the fire brigade will signal the transceivers on the road to show their presence and direction of approach. The transceivers on the road send an acknowledgement signal to the ambulance. After receiving an acknowledgement, the ambulance signals the main traffic controller. The main traffic controller takes the necessary action of turning the required traffic light green and other traffic lights red. This condition prevails till the ambulance passes by. Once the ambulance has left, the main traffic control resumes its normal operation or redoes the same operation if it detects another approaching emergency vehicle.

Though technology to override a traffic signal exists (in select developed countries), we aim to automate the entire process which will be a first of its kind.