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ITM: AI Powered Traffic Light Control with GPS Based Pre-emption for Emergency Vehicles

Ms. Kadam Shrutika Dilip[1], Ms. Mulla Sana Firoz[2], Mr. Jadhav Kiran Jayram[3], Prof. Yadav Prashant B.[4]

Students, Department of Electronics and Telecommunication [1,2,3]
Assistant Professor, Department of Electronics and Telecommunication[4]
Adarsh Institute of Technology & Research Centre, Vita, India

Abstract: *The vehicle tracking service is provided for real time tracking. We use open-source vehicle detection system. The emergency vehicle continuously sends its latitude, longitude and speed to GPS server. Emergency vehicles such as ambulances, police vehicles and fire engines must reach their destination as quickly as. Traffic congestion is becoming one of the critical problems as the population and number of cars in cities are increasing. Unnecessary delays in the path can ultimately lead to dangerous events. It may cause damage to life or property. One of the most important delays is the time it takes for emergency vehicles to travel between their origin and destination.*

The results suggest that the proposed system provides an optimal solution to the delay times experienced by emergency vehicles on their routes. Our proposed system aims to use live images from cameras at intersections and use image processing and AI to calculate traffic density. It also focuses on algorithms that switch traffic lights based on vehicle density to reduce traffic congestion, allowing people to pass through faster and reducing pollution

Keywords: Traffic light , Pre-emption, GPS, Delay, GSM, Congestion, Microcontrollers, Traffic light system, Traffic control, Traffic management, Intelligent Transport system, Smart Surveillance, Computer Vision, Machine Learning, Object Detections , YOLO

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