IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, July 2025
Impact Factor: 7.67

Lifeline Traffic: Based Ambulance and Emergency Vehicle Priority

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Abstract: *An IoT-based solution to prioritize ambulance and emergency vehicle movement in urban traffic. Traditional traffic systems often delay emergency responses due to congestion and lack of dynamic signal control. Our system integrates GPS, sensors, and real-time data transmission to detect approaching emergency vehicles. Traffic lights are automatically adjusted to provide a green corridor, minimizing response time. A central control unit monitors all connected signals and vehicles using cloud-based analytics. The system enhances coordination between ambulances and traffic infrastructure. Emergency vehicles are tracked live, and routes are optimized dynamically. Smart traffic algorithms, wi-fi modules, and microcontrollers are utilized in implementation. This technique lowers the opportunity of fatalities and ensures quicker, more secure emergency services.*

Keywords: Emergency vehicle prioritization, Smart traffic management, Ambulance tracking, Real-time traffic control, Green corridor, GPS-based navigation

DOI: 10.48175/IJARSCT-28465