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Ambulance Detection using RFID Reader

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Abstract: *In urban environments, ensuring the timely and unobstructed movement of ambulances is critical for saving lives. Traffic congestion and unawareness of approaching emergency vehicles can lead to delays, which may be fatal for patients in critical conditions. The proposed system aims to provide an intelligent solution for ambulance detection and prioritization at traffic signals using RFID (Radio Frequency Identification) technology. The system involves equipping ambulances with RFID tags and placing RFID readers at strategic points such as traffic signals. When an RFID reader detects the presence of an ambulance (through its unique tag), it communicates with the traffic control system to give priority to the ambulance by turning the traffic light green, thereby clearing the route ahead. This process can be integrated into existing intelligent traffic management systems to improve the overall efficiency and response times of emergency services. The RFID-based detection system offers several advantages over traditional methods like sirens or GPS tracking. It is cost-effective, requires minimal infrastructure changes, and can function independently of network connectivity, unlike GPS. Moreover, the RFID tags are passive, meaning they do not require a power source, making them a durable and long-term solution. In summary, this RFID- based ambulance detection system will contribute to reducing delays at intersections and ensuring faster and safer transportation for patients incritical conditions. It enhances the effectiveness of emergency response efforts by automating the process of giving ambulances the right of way without the need for human intervention*

Keywords: Ambulance detection system, RFID reader

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