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Vehicle to Vehicle Communication for Crash Avoidance System

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Abstract: *The Dramatic increase in the traffic flow raises demand on innovative technologies that can improve safety and efficiency of transportation systems. Road safety can be substantially enhanced by the deployment of wireless communication technologies for vehicular networks, which enable new services such as collision detection traffic management, and further communication facilities between moving vehicles. Aiming at providing reliable wireless communications for vehicular networks the RF communication will serve as an underlying protocol for future inter-vehicular applications worldwide. This paper presents an implementation of a complete vehicle to vehicle communication, designed according to the specification. In addition to this a blind spot detection system for protection against misshapen like vehicle collisions that causes loss of human lives is being implemented. The blind spot detection system will be useful while changing the lane. Ultrasonic sensors, Raspberry pi, RF module and GPS modules are used to implement the complete design The main aim of V2V communication is to prevent accidents by allowing vehicles in transit to send position and speed data to one another. The vehicle's driver may simply receive a warning should there be a risk of an accident or the vehicle itself may take preemptive actions as braking to slow down.*

Keywords: For V2V Communication, Crash Avoidance System, Intelligent, Transportation System (ITS), Vehicle Safety, Collision Warnig, Cooperarive Adaptive Cruise Control (CACC), Wireless Commnication, Dedicated Short-Range, Communication (DSRC), Vehicle-to-Everything (V2X), Sensor Fusion, Connected Vehicles, Traffic Safety, Real-time Data Exchange, Automated Emergency Braking (AEB), Machine Learning for Collision Prediction

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