

Vehicle-to-Vehicle Communication using CAN Bus Protocol

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Abstract: *This abstract introduces a groundbreaking Crash Avoidance System aimed at bolstering road safety in response to escalating vehicular congestion. Through the utilization of Vehicle-to-Vehicle (V2V) communication facilitated by the Controller Area Network (CAN) bus, the system seamlessly integrates cutting-edge hardware components to enable real-time data exchange and collision detection among vehicles. Strategic functional partitioning optimizes communication protocols and collision detection mechanisms, employing a suite of sensors and microcontrollers to orchestrate the system's functionality. Rigorous testing procedures have been conducted to validate the efficacy of collision detection and avoidance maneuvers. Future iterations of the system are envisioned to incorporate advanced driver assistance systems, machine learning algorithms, and expanded connectivity via Vehicle-to-Everything (V2X) communication, while prioritizing cybersecurity measures and regulatory adherence. This innovative system not only addresses immediate road safety imperatives but also lays the foundation for intelligent transportation networks, effectively mitigating collision risks and enhancing overall traffic safety*

Keywords: vehicle to vehicle communication(v2v),Control area network(CAN), Hardware components, Sensor, Smart transportation system

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