

# **Integrating Zigbee Technology in V2V Systems for Next Generation Road Safety**

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**Abstract:** *This project focuses on the development of a Zigbee-based alert system for two autonomous robots. Each robot is equipped with sensors capable of detecting hazards such as smoke, fire, and obstacles. Controlled by an Arduino Uno, the robots communicate wirelessly using Zigbee modules to coordinate their actions in real-time. When a hazard is detected by one robot, it sends a signal to the other robot, prompting it to halt or take necessary action. The status is displayed on an I2C LCD, and an alarm buzzer provides an audible warning. Robot movement is managed using the L293D motor driver. This system demonstrates efficient wireless communication, real-time hazard detection, and coordinated response, improving safety and collaboration among autonomous robots*

**Keywords:** Zigbee, V2V Systems, Road Safety

