ABSTRACT

Smart Transportation System is a technological innovation involving wireless and automation technologies. This system uses technologies such as the Internet of Things (IoT), GPS, and wireless communication, enabling real-time communication and information exchange. This research aims to design and build a vehicle-to-vehicle communication system as part of the effort to support the Smart Transportation System. The system uses GNU Radio as the development platform, Frequency Shift Keying (FSK) modulation, and Software Defined Radio (SDR) devices to send and receive data between vehicles. In the testing, the system was evaluated using two vehicles moving at speeds of 20-40 km/h over distances of 3-6 meters. The transmitted data includes text information about the vehicles such as brand, license plate number, and color. The system's performance was measured using Bit Error Rate (BER) and Signal-to-Noise Ratio (SNR) across various distances and environmental conditions, with signal quality affected by environmental conditions and vehicle movement.

***Keywords*:** *Communication System Between Vehicles*, *Smart Transportation System, Frequency Shift Keying* (FSK), *Software Defined Radio* (SDR).