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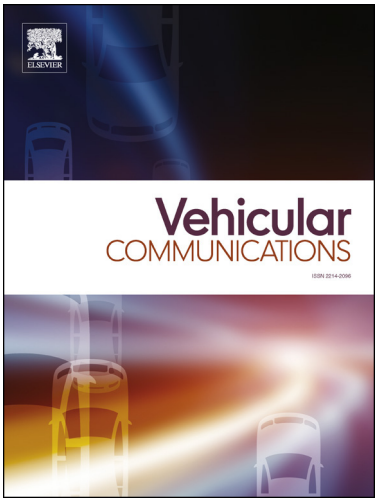

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On the Performance of WLAN and Bluetooth for In-car Infotainment Systems

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Abstract

The connected car is ushering in a new era of automotive design. Driven by increasing customer demand for connectivity and advances in electronics, connected cars are now equipped with advanced infotainment systems with a variety of applications. Seamless integration of consumer electronic (CE) devices into car infotainment systems is crucial for mimicking home and office user experience. Because wireless communication is more user-friendly than wired communication, it has become the preferred method for connecting CE devices to car infotainment systems. WLAN[1] and Bluetooth[2] are the most promising technologies for this purpose. Both systems operate in the spectrum-scarce 2.4 GHz unlicensed industrial, scientific and medical (ISM) radio band. The coexistence between WLAN and Bluetooth has garnered a significant amount of attention from both academic and industry researchers. However, the unique features of vehicle mobility and the high density of devices in a limited roadway area necessitate further investigation in the automotive domain.

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[1]WLAN, Wi-Fi and 802.11 will be used interchangeably in this paper

[2]Bluetooth has been standardized by IEEE as 802.15.1 and is managed by Bluetooth SIG