

CALL FOR PAPERS
IEEE Journal on Selected Areas in Communications
Vehicular Communications and Networks

Vehicular communications and intelligent transportation systems aim to improve traffic safety, protect environment by reducing traffic congestion and fuel consumption, and enable a plethora of new applications such as mobile infotainment. To address the special requirements of both safety and non-safety applications in the vehicle domain, there is a necessity to develop new communication technologies and find special integration solutions into vehicular and transportation systems. These result in various types of vehicular communications and networks: vehicle-to-infrastructure, vehicle-to-roadside, and vehicle-to-vehicle communications. In this growing interdisciplinary field, many research challenges need to be addressed, e.g., how to characterize communication channels due to greater dynamics and higher requirements due to e.g. latency and reliability compared to conventional wireless channels, how to appropriately design medium access control (MAC) and network protocols that should essentially be scalable in performance and adaptable to environment changes due to rapid network topology changes and node density fluctuations, and how to evaluate and validate vehicular networking protocols under realistic assumptions using simulation methodologies and real-world testing. The goal of this special issue is to report on cutting-edge research achievements covering those aspects of vehicular communications and networks that are distinctively different from communication networks in general. We are seeking papers that describe high-quality, original, and unpublished contributions. Possible topics include, but are not limited to:

- Adoption and adaptation of web technologies
- Application protocols and service architectures
- Channel measurement, modeling, & simulation
- Domain-specific security and privacy solutions
- Inter-networking technologies and architectures
- MAC technologies and channel management
- Multiple radio integration and control
- Physical layer and RF level technologies
- Radio resource management, congestion control, traffic control, routing, and QoS support
- Real-time experimental systems and testbeds
- RF integration and SDR technologies
- Safety and non-safety applications and services
- Simulation methodology and performance evaluation techniques
- Delay tolerant networks
- Energy efficient communications
- Traffic and mobility models

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