Traffic congestion, delays, and accidents in the transportation systems have caused significant loss of lives, waste of energy, and loss in productivity. To improve the safety, security and efficiency of the transportation systems and enable new mobile services and applications for the traveling public, Intelligent Transportation Systems (ITS) have been developed, which apply rapidly emerging information technologies in vehicles and transportation infrastructures. The development of inter/intra-vehicle and infrastructure-to-vehicle mobile mesh and ad hoc networks is one of the most challenging and critical issues for the ITS industry, which has also sparked substantial interest in the communications and networking research community.

This Special Issue of AD HOC NETWORKS (ELSEVIER) JOURNAL on Vehicular Networks will include and solicit contributions focusing on vehicular ad hoc networks (VANET), vehicle-to-infrastructure (V2I), infrastructure-to-vehicle (I2V), and vehicle-to-vehicle (V2V) communications and networking. In addition, research issues pertaining to DSRC standards, Intelligent Transportation Systems (ITS), as well as wireless sensor networks within cars are also topics of interest for our Special Issue. The objective of this Special Issue is to disseminate the state-of-the-art R&D results in this fast-moving research area, to facilitate the deployment of vehicular communications networks, and to bring together people from both academia and industry, with the goal of fostering interaction among them to promote further research interests and activities to enable new transportation products and services, e.g., advanced traffic management, vehicle control, safety control, and networking and information services for users on the road.

Topics of interest:

- Routing protocols for active safety in VANET
- Emerging applications such as content distribution, infotainment, Internet access, etc.
- Challenges of V2V, V2I, and I2V wireless communication
- Use of wireless technology within cars
- Security issues in VANET and trustworthy networking
- Propagation issues
- Emerging inter/intra-vehicle and infrastructure-to-vehicle wireless communication technologies
- Simulation models and testbeds for VANET
- Implementation and field tests of VANET systems
- Potential modifications needed to improve the DSRC standard

- Vehicular network architectures and protocols
- Vehicular network performance modeling and analysis
- Vehicular network medium access control and routing protocols
- Vehicular network flow and congestion control
- Quality of Services (QoS) provisioning in wireless-enabled ITS systems
- Traffic management, vehicle control, and safety related applications for ITS systems
- Networking and information services for users on the roads (by automobiles, trains, planes, or ships)
- Cross-layer design and optimization for vehicular ad hoc networks
- Mobility management and intersystem handovers
- Incentives, cooperation, and reputation systems

Authors are requested to prepare their papers according to the Guide For Authors on http://www.elsevier.com/locate/adhoc and to submit their paper to the online submission and reviewing system, at http://ees.elsevier.com/adhoc. They should choose the article type, Special Issue-VEHICULAR NETWORKS.

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