

Special Session title

Next generation Traffic Management for Connected, Cooperative and Automated Mobility

Special Session proposer(s)

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Abstract

Connectivity and automation constitute two of the most prevailing technology trends which will play a significant role in future transportation systems and services. The development of Cooperative Intelligent Transportation Systems (C-ITS), i.e. Vehicle-to-Infrastructure (V2I), Vehicle-to-Vehicle (V2V), and Vehicle-to-Everything (V2X), is already speeding up in many countries, which are met with the challenge to modernize infrastructure and operations, in order to allocate the smooth integration of connected vehicles. Traffic management should be prepared to accommodate the circulation of connected vehicles and the regulation of C-ITS services. Connectivity is anticipated to benefit Traffic management. Road network operations could be upgraded and become more efficient since communications between vehicles and the roadside infrastructure are to be direct and faster. This fact paves the way to future automation where C-ITS services have the potential to become legally binding instructions for vehicles. Concerning operational aspects, traffic management is considered to be in a state of transition as future traffic management systems will need to function in a more integrated manner by collecting and aggregating data from different sources, i.e. traditional sensors data along with in-vehicle data, and exploit it for the enhancement and optimization of traffic management strategies. The main objective of the session is to assess how the gradual road presence of connected vehicles will affect the current traffic management practices. Moreover, another target is to analyse how new traffic management practices can facilitate the smooth integration of C-ITS services in real traffic while gaining the maximum benefits from this introduction. Finally, innovative concepts and tools with the purpose to allocate holistic coordinated traffic management, taking into account conventional, connected and automated vehicle fleets, are discussed.

Keywords

- Network Management
- Cooperative Techniques and Systems
- Theory and Models for Optimization and Control

Topics of interest

- Cooperative Intelligent Transportation Systems
- Connected and automated mobility
- Next generation traffic management
- Traffic control and strategies
- Centralized and decentralized approaches towards traffic management



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- Tools for coordinated responsive dynamic traffic and fleet management
- Simulations for traffic optimization under various scenarios in connected environments