

Special Session title

Advances in Connected and Autonomous Mobility: From Data to Models, Impacts and Enablers for Adoption

Special Session proposer(s)

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Abstract

Recent breakthroughs in technology, digital infrastructure, dynamic mapping and big data computing will transform the way we will plan, undertake, interact, make decisions and use our built environment and transportation infrastructure for the movement of people and goods. Connected and Autonomous Mobility (CAM), enabled by vehicle connectivity and automation, cloud computing, artificial intelligence and Internet of Things (IoT), allows unprecedented capability to collect, exchange and analyze large volumes of data to formulate models and tools for optimal decision making at individual, local and city levels and will, therefore, increasingly be revolutionized our economy and society over the next decade. However, to what extent they will disrupt mobility and transport operations is still a subject of research. CAM services are expected to emerge in various forms affecting different user groups and imposing network-level changes on various urban scales. To this end, understanding public acceptance and the levels of adoption (and respective timing) of emerging technologies, devising novel approaches and modeling tools to replicate mixed and CAV (Connected and Autonomous Vehicles) traffic in large-scale urban networks for impact assessment and identifying large-scale procedures and policies for CAV traffic management are the key factors for successful deployment of CAM services. This special session aims at:

- 1) providing the audience with information about the deployment of state-of-the-art vehicular and transportation technologies to CAM in a smart city context;
- 2) discussing the latest advancements, existing data, conceptual and modeling hurdles and challenges in both research and practice (particularly on the selected topics below); and
- 3) identifying potential research gaps and collaboration opportunities between industry and academia.

Keywords

- Traffic Theory for ITS
- Simulation and Modeling
- Multi-modal ITS

Topics of interest

- Artificial intelligence and advanced computing for CAM
- Shared mobility systems and advanced algorithms
- Connected and autonomous vehicle applications
- Advanced public transportation systems (enabled by CAM)



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- Cooperative driving
- Traffic modeling and simulation, especially associated with CAM
- Impact assessment strategies, tools and methodologies
- Large-scale procedures and policies for CAV traffic management.
- Acceptance of connected and autonomous mobility