IFAC World Congress 2023

CALL FOR PAPERS
For Open Invited Track On
Connected and Autonomous Vehicles: Scenarios & Applications

Abstract: Connected and Autonomous vehicles (CAVs) are envisioned to network with their peers, infrastructure, and pedestrians to enhance safety and mobility. Recent interest in Urban Air Mobility brings about a wide variety of practical challenges for cargo drones (CAVs) in modeling, control, collision avoidance and traffic management. The aim of this open invited track is to provide a forum for researchers in academia, scientific research laboratories, and industry to share and discuss the state-of-the-art in theory and practice of CAVs.

IFAC Technical Committee for Evaluations: TC 7.1 (Automotive Control)
TC 7.4 (Transportation Systems) – Recommended

Track Code: irc58

Organizers: Prof. Swaroop Darbha, Texas A&M University, College Station, TX, USA.
Prof. Tielong Shen, Sophia University, Tokyo, Japan.

Description of the topic:
Connected and Autonomous Vehicles (CAVs) could significantly enhance safety, and mobility. However, realizing the potential safety and mobility benefits requires addressing the challenges such as localization, control and navigation, driver-machine interactions, security, and privacy, robust V2X connectivity, and traffic management. The objective of this open invited track is to bring together researchers from academia and industry to discuss the state-of-the-art and share their novel theoretical constructs and practical applications to the broader research community.

This open invited track solicits novel contributions to advance the state-of-the-art in the broader area of CAVs; topics include but are not limited to:

(1) Advanced Driver Assist Systems (ADAS).
(2) Safety and Mobility Benefits of Connectivity (for example, with 5G etc) for different scenarios such as emergency braking, emergency lane change, merging etc.
(3) Human interfaces and human factors for CAVs.
(4) Infrastructure assisted Autonomy.
(5) SIL/HIL platforms and Experimental Testbeds for CAVs.
(6) Perception for CAVs in mixed-traffic environment and associated datasets.
(7) Cyber-security for CAVs.
(8) Traffic Control and Management.
(9) Urban Air Mobility – modeling, control, planning, and management.
(10) Field Tests and Case studies.