Cooperatively Interacting Automobiles

Proposal of an open invited track for the 10th IFAC Symposium on Intelligent Autonomous Vehicles

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Abstract:

Linking automation with the connectivity of vehicles is expected to have a huge economic, environmental and social impact. In the long-term vision, networked automation will fundamentally change our road traffic. Cooperative behavior between road users will be automatic and thus form the typical behavior. In addition, compared to today's manual co-operation between road users, technical cooperation opens up qualitatively improved and novel functional possibilities due to the achievable latency, accuracy, unambiguity and reliability of automatic behavior. Correspondingly, coordinated trajectories provide a higher density, velocity and safety. When a high degree of penetration of road traffic with connected automated automobiles is reached, safe and highly efficient traffic flows are conceivable that resemble the motion of biological swarms. This special session focusses on the state of research in program Cooperatively Interacting Automobiles.

Keywords: cooperative perception, situation prediction, cooperative decision-making, verification of cooperative decisions, interaction of automated vehicles

Topics:

- Cooperative perception for automated vehicles
- Situation prediction for automated vehicles
- Cooperative decision making for automated vehicles
- Verification of cooperative decisions for automated vehicles
- Interaction of automated vehicles with pedestrians and with passengers
- Interaction of automated vehicles with each other
- Vehicle-to-vehicle communication for cooperatively interacting automobiles
- Cross-cutting Issues of cooperatively interacting automobiles

For exemplary references, please refer to www.coincar.de