

## Editorial

# Cooperative Systems for Autonomous Vehicles

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Intelligent Transport Systems are responsible for providing technology to improve the operation, management, and safety of land transport in urban, interurban, and rural roads. With the current interest in the development of autonomous vehicles, cooperative systems C-ITS can be considered as catalysts of these, and their implementation, not limited to independent actions, but adding perception, decision, and additional actions supported by communications, aiming to the cooperative autonomous driving.

In this scenario, the European Platform C-ITS approved the deployment of the first set of cooperative systems, called Day 1, which will use V2V and V2I communications. At this time, it is expected that this initial set will be expanded to the C-ITS Day 1.5, with the intention that, in 2020, 20% of vehicles have all these capabilities. Therefore, a shared traffic situation arises among vehicles with cooperative capacities with autonomous or semiautonomous functions, with others with purely manual driving. This situation will be the most common for a long period of time.

For all these reasons, the objective of this special issue focuses on research and development of technologies of C-ITS systems, focused on the cooperative autonomous driving. It is in complex scenarios where C-ITS systems can provide further solutions to the problems identified. In addition, studies of the impact of these technologies in drivers are another important aspect. These studies will focus on both drivers of vehicles equipped with C-ITS solutions and those not equipped with them, with the purpose of establishing the basis to ensure coexistence in shared traffic between

the two types of vehicles, during the transition to the fully autonomous driving.

C-ITS increase the quality and reliability of information available to drivers about their immediate environment, other vehicles, and road users by sharing information such as vehicle position, direction, and speed, with other connected vehicles in real-time. This information helps us observe and assess what is happening on our roads, building a picture of real-time traffic situations.

This technology can respond to the traffic situation in a number of ways such as providing warning messages to driver via variable message signs, reducing variable speed limits, and updating available traveler information.

Cooperative Intelligent Transport Systems enable vehicles, infrastructure, personal mobile devices, and transport management systems to share information about the road safely through a wireless network.

## Conflicts of Interest

The authors declare no conflicts of interest.

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