Project:	Document:
Smart Mobility	Smart vehicular mobility and traffic management

Smart vehicular mobility and traffic management

Traffic is time and energy consuming and produces negative effects on the environment. The first pillar of the Green Paper on Urban Mobility: Towards a new culture for urban mobility adopted by the EU commission in 2007, puts a strong emphasis both on reducing congestion and its impact in everyday life on urban environments, and on developing smarter urban transport systems, whose aim is to spread good practices towards more efficient urban transport.

Traffic control systems should cope with the ever increasing demand by determining the situation on the road network and by controlling traffic flows. Emerging cooperative techniques, like vehicle-to-infrastructure communication and exploitation of smartphone sensing to monitor traffic status, increase the knowledge about road traffic participants and open new channels for delivering information to these participants. Related topics of interest include, but are not limited to:

– exploiting different types of sensors for traffic monitoring and surveillance, ranging from induction loops to cameras and smartphone-onboard sensors;
– sensor data fusion, merging, and corroboration techniques;
– achieving desired cooperative behaviors even with low penetration rates of participating vehicles;
– self-organizing traffic management algorithms based on incentives and opportunistic exchange of traffic information;
– advanced traffic light control algorithms;
– completely decentralized and scalable techniques for self-organization, self-management, and emerging behaviors.

Vehicles send local information to a central server that uses it to manage the traffic, to plan best routes for emergency vehicles and optimize traffic lights behavior. Local communication between vehicles can be used entertainment and safety (e.g.: collision alarm).