

Estimating the effects of the macroscopic traffic parameters on the overall Cooperative awareness Message generations

In V2V communication, Cooperative Awareness Message (CAM) also known as Basic Safety Message (BSM) is one of the basic messages that a vehicle broadcasts to its surrounding vehicles. This message is triggered based on certain events, like change in the vehicle's position, speed or direction. One of the main concerns in vehicular communication is the load on the communication channel. As the spectrum is limited, generation of more messages would mean more load on the spectrum. Hence it is necessary to have an estimate on the messages generated in different traffic scenarios. Therefore in this study, we would like to find out on how the traffic parameters (also known as the macroscopic parameters) like the vehicle density, traffic flow, the average speed of the traffic, etc have an effect on the CAM generations.

This project will mainly involve two steps:

- 1) A tool needs to be designed, which can use the vehicle trajectory data which consists of the vehicle position, speed, and other parameters for different time instances and model the CAM generations. (since it is easier to get databases of vehicle trajectories than actual CAM Message generations. We are already in possession of some of these databases).
- 2) From the vehicle parameters (also known as the microscopic parameters) calculate the traffic parameters and analyse on the effects of these parameters on the CAM generations.

Contact: Aashik Chandramohan and Geert Heijenk