

# “COOPERS – Co-operative Systems for Intelligent Road Safety”

Martin Böhm  
(AustriaTECH, Vienna)

## **Abstract:**

COOPERS Vision provides vehicles and drivers with real time individual/local situation based, safety related traffic status and infrastructure status information distributed via dedicated Infrastructure to Vehicle Communication (I2V).

This approach extends the concepts of vehicle autonomous systems and vehicle to vehicle communication (V2V) with tactical and strategic traffic information only be provided by the infrastructure operator in real time. I2V in this respect will significantly improve traffic control and safety via effective and reliable transmission of data fully adapted to the local situation of the vehicle (ensemble of vehicles). I2V will extend massively the responsibility and liability of the infrastructure operator as by today in terms of reliability and accuracy of information to advice drivers / vehicles.

The highest effect of I2V communications will be achieved in areas of dense traffic also known as areas where risk of accidents and traffic jams is extreme high. The real time communication link between infrastructure and vehicle can also be used vice versa for V2I communication utilising vehicles as floating sensors to verify infrastructure sensor data as source for traffic control measures. COOPERS follows a 3-step approach for implementation of I2V communication:

- Improve road sensor infrastructure and traffic control applications for more precise situation based traffic information and driver advice.
- Establish a link between road tolling systems and I2V concept.
- Development of a communication concept and applications able to cope with the I2V requirements in terms of reliability, real time capability and robustness and considering different technologies (DAB, CALM, etc.).
- Demonstrate results on important sections of European motorways with high density traffic in The Netherlands, Germany, Austria and Italy and
- develop deployment strategies for mixed environment.