Cooperative Vehicle-Infrastructure System

Cooperative vehicle-infrastructure systems will allow vehicles to cooperate directly with other vehicles and with the infrastructure in the vicinity sharing the latest traffic related data and information for greater safety, efficiency and a better environment. The vehicles and pieces of roadside infrastructure will be able to communicate via local ad-hoc networks and always-on network connections to support a wide range of services including real-time on-trip traffic information as well as routing and traffic management service based on the actual traffic situation.

Auftraggeber: **European Commission**

Projekt: Cooperative Vehicle-Infrastructure System

Duration: 02/2006 – 01/2010

Methodik: Research & Development

Ergebnisse: Softwareentwicklung: Mobile Client Framework, Ko-operative Ermittlung der Verkehrslage

Infoline*:*
http://www.ertico.com/en/activities/projects_and_fora/cvis.htm

Aims

The CVIS project has the following high-level goals that can be verified at the conclusion of the project:

- Creation of a unified technical solution that allows all vehicles and infrastructure elements to communicate with each other in a transparent way using a large variety of media.
- Definition and validation of an architecture and system concept for a wide range of cooperative system applications.
- Development of common core components which support cooperation models for complex applications and services.
- Elaboration of an open and interoperable concept for cooperative systems, based on standards-based open-source technology platforms and common software modules for key applications

Procedure

As a core pre-requisite a harmonised technology for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication and networking will be elaborated. CVIS will develop a multi-channel terminal capable of employing a wide range of potential carrier technologies including cellular networks (GPRS, UMTS), mobile wireless local area networks (WLAN, or Wi-Fi), short-range microwave beacons (DSRC) or infra-red (IR). The communication specification will be based on the new international “CALM” standards ensuring full interoperability between different car brands and traffic management systems built by different manufacturers across Europe.

The CVIS applications and core technologies will be demonstrated at test sites in six European countries comprising urban, inter-urban and commercial environments. The trials will prove the technical feasibility of the innovative cooperative system concepts involving users and operators and indicate these systems’ potential effectiveness, impacts and benefits.

To strengthen the deployment of cooperative vehicle-infrastructure systems also beyond the timeframe of the project, CVIS will assess the costs for individuals, for operators and for authorities and define implementation roadmaps. It will also look into security and privacy issues, liability and user acceptance/usability.

Results

CVIS will provide an European technology platform allowing for a wireless communication between vehicles and infra structure and the implementation of cooperative applications in vehicles, road side infra structure and centres.

To prove the feasibility of the developed concepts and technologies a set of selected applications, among others incident warning, speed information and cooperative traffic status determination, will be demonstrated in different environments.