PROJECT

CARTALK 2000

Safe and comfortable driving based upon inter-vehicle communication

Funding: European (5th RTD Framework Programme)
Duration: Aug 2001 - Jul 2004
Status: Complete with results

Background & policy context:
The CarTALK 2000 consortium brought together the extensive knowledge of the leading European manufacturers of vehicles, vehicle components and communication systems, plus renowned research institutes. The seven partners DaimlerChrysler, CRF, BOSCH, Siemens, TNO, University of Stuttgart and University of Cologne focussed its research activities on safety related communication based driver assistance systems.

Objectives:
The technical objectives of CarTALK 2000 were to develop and realise co-operating driver assistance systems, to develop an extendable self-organising radio system for inter-car communication aiming at an emerging standard.

Methodology:
- Specification of today’s and future applications for cooperative driver assistance systems and selection of those which can be realized in the framework of this project.
- Develop software structures and algorithms, e.g. new fusion techniques for radio-based sensor information and local sensor information
- Development of a self-organising radio system for intervehicle and vehicle-infrastructure communication
- Algorithms for radio ad-hoc networks with extremely high dynamic network topologies
- Integrate the communication system hardware and algorithms into test vehicle
- Integrate the applications into probe vehicles to test and demonstrate both, info-mobility applications (existing applications) and safety applications in the same system architecture.
- Test and demonstrate assistance functions in probe vehicles in real traffic scenarios

Parent Programmes:
FP5-IST KA1 - Systems and services for the citizens

Institute type: Public institution
Institute name: European Comission, DG Information Society
Funding type: Public (EU)

Partners:

Germany:
DaimlerChrysler AG; Robert Bosch GmbH, Siemens AG, Universität Köln (Institut für Verkehrswissenschaften), Universität Stuttgart (IPVS)

Italy:
Centro Ricerce Fiat (CRF)

The Netherlands:
Organisation: DaimlerChrysler AG – Dept. RIC/TC HPC U800
Address: Wilhelm Runge Strasse 11
Zipcode: 89081
City: Ulm
Contact country: Germany
Telephone: (+49) 731 505 21 73
Fax Number: (+49) 731 505 41 10

Key Results:

- Defining an open architecture which allow vehicle manufacturer to bring together their predominant proprietary electronics architecture with the well defined CarTALK communication system.
- Defining and realizing an open decentralised communication system which supports a broad range of applications for entertainment and information purposes as well as safety related CarTALK applications.
- Defining and realizing the three major safety related application classes: Information & Warning Functions (IWF), Communication-Based Longitudinal Control (CBLC), Co-operative Driver Assistance (CODA)
- Integration of the communication system hardware and algorithms and the applications into test vehicles.
- Integrate the applications into probe vehicles to test and demonstrate both, info-mobility applications (existing applications) and safety applications in the same system architecture.
- Show the feasibility of the applications and their market introduction by a socio-economic assessment with a cost benefit analysis.

Technical Implications

The socio-economic assessment has been carried out for the basic warning function from the Information and Warning Function (IWF) class and for the early braking function from the Communication Based Longitudinal Control (CBLC) class. In short both systems, basic warning and early braking will lead to significant benefits by reducing accidents and hence are desirable from a societal point of view.

Documents:

- [CarTALK Final Report (Deliverable 15)]

STRIA Roadmaps:

Cooperative, connected and automated transport, Network and traffic management systems
Transport mode: Road transport
Transport sectors: Passenger transport, Freight transport
Transport policies: Digitalisation, Safety/Security
Geo-spatial type: Other