



PROJECT PRESENTATION

Contract no.: 027293

Project acronym: CVIS

Project name: "Co-operative Vehicle-Infrastructure Systems"

PRIORITY 2 "Information Society Technologies"

IST-2004-2.4.12 - eSafety-Cooperative Systems for Road Transport

Total cost €41.155.204

EC Funding €21.905.793

PROJECT ABSTRACT

The CVIS (Cooperative Vehicle-Infrastructure Systems) FP6 Integrated Project aims to develop and test new technologies to allow road vehicles to communicate with any nearby roadside infrastructure. Based on such real-time road and traffic information, many novel applications can be produced. The consequence will be increased road safety and efficiency, and reduced environmental impact.

The project's ambition is to start a revolution in mobility for travellers and goods, completely re-engineering how drivers, their vehicles, the goods they carry and the transport infrastructure interact and cooperate.

This can only work if different makes of vehicle and different types of roadside system all use the same communication standards. CVIS will therefore develop a world "first": a mobile router to link vehicles continuously with roadside equipment and servers. The project will apply and validate the ISO "CALM" standards for continuous mobile communication, and will provide input to standards development in European and global standardisation bodies.

Other key innovations include high-precision positioning and local dynamic maps, a secure and open application framework for access to online services and a system for gathering and integrating monitoring data from moving vehicles and from roadside detectors and sensors.

These technologies will be developed for selected urban, interurban and freight/fleet applications, and tested at test sites in France, Germany, Italy, Netherlands/Belgium, Sweden and the UK.

Lastly, the CVIS project is creating guidelines and tools to address key technical and non-technical issues for deployment.

OBJECTIVES

The CVIS objectives are:

- to create a unified technical solution allowing all vehicles and infrastructure elements to communicate with each other in a continuous and transparent way using a variety of media and with enhanced localisation;
- to enable a wide range of potential cooperative services to run on an open application framework in the vehicle and roadside equipment;
- to define and validate an open architecture and system concept for a number of cooperative system applications, and develop common core components to support cooperation models in real-life applications and services for drivers, operators, industry and other key stakeholders;
- to address issues such as user acceptance, data privacy and security, system openness and interoperability, risk and liability, public policy needs, cost/benefit and business models, and roll-out plans for implementation

KEY PROJECT RESULTS

Within the main blocks of Core Technologies, Cooperative Applications, Test Sites and Deployment Enablers, the CVIS sub-projects will produce the following key results:

- a multi-channel terminal capable of maintaining a continuous Internet connection over a wide range of carriers, including cellular, mobile Wi-Fi networks, infra-red or short-range microwave channels, ensuring full interoperability in the communication between different makes of vehicle and of traffic management systems;
- an open architecture connecting in-vehicle and traffic management systems and telematics services at the roadside, that can be easily updated and scaled up to allow implementation for various client and back-end server technologies;
- techniques for enhanced vehicle positioning and the creation of local dynamic maps, using satellite positioning, radio triangulation and the latest methods for location referencing;
- extended protocols for vehicle, road and environment monitoring to allow vehicles to share and verify their data with other vehicles or infrastructure nearby, and with a roadside service centre;
- application design and core software development for:
 - cooperative urban network management, cooperative area destination-based control, cooperative acceleration/deceleration and dynamic bus lanes;
 - enhanced driver awareness and cooperative traveller assistance on inter-urban highways;
 - commercial vehicle parking and loading zones booking and management, monitoring and guidance of hazardous goods and vehicle access control to sensitive areas.
- deployment enabling toolkit in the form of models, guidelines and recommendations in the areas of openness and interoperability; safe, secure and fault-tolerant design; utility, usability and user acceptance; costs, benefits and business models; risks and liability; cooperative systems as policy tool; and deployment road-maps.

CONSORTIUM

ERTICO (Coordinator)	Belgium	M.V.G.	Belgium
5T	Italy	Mapflow	Ireland
ASF	France	Mizar	Italy
ATC Bologna	Italy	mm-lab	Germany
AVVC	Hungary	MMS	Italy
BAES ATC	UK	NAVTEQ	Netherlands
BMW	Germany	Peek Traffic	Netherlands
BOSCH	Germany	Province of North Brabant	Netherlands
CIT	Ireland	POLIS	Belgium
CNRS	France	PTV	Germany
CRF	Italy	Q-Free	Norway
DaimlerChrysler	Germany	RACC	Spain
DfT	UK	Ramsys	Hungary
DLR	Germany	Renault	France
EFKON	Austria	RWS	Netherlands
FEHRL	Belgium	Siemens	Germany
Grand Lyon	France	SINTEF	Norway
Gatespace Telematics	Sweden	SRA	Sweden
Highways Agency	UK	Technolution	Netherlands
HSVV	Germany	TELCORDIA	UK
HTW	Germany	Tele Atlas	Netherlands
Imperial College	UK	Transport for London	UK
Infoblu	Italy	THETIS	Italy
INRIA	France	Thomas Miller	UK
INTEMPORA	France	Telecom Italia	Italy
ISMB	Italy	TNO	Netherlands
Kapsch	Sweden	TRIALOG	France
Lacroix	France	Vialis	Netherlands
LCPC	France	Vodafone	Germany
LogicaCMG	Netherlands	Volvo Technology	Sweden

PROJECT COORDINATION

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